CEO Pay and Company Performance in the Food and Tobacco Industry

Kevin J. Sigler, PhD

601 S. College Road, Cameron School of Business, University of North Carolina Wilmington
Wilmington, NC 28403

Abstract:

Chief executive officers for companies in competitive industries are motivated to maximize shareholder wealth and not shirk job responsibility since lack of effort could result in firm bankruptcy or a takeover from a competing firm. On the other hand, CEOs of firms, enjoying large market share and product differentiation from competitors, may not be as motivated. For these types of firm shareholders may be best served linking executive pay to firm performance to insure the convergence of management and owner interests.   This paper tests the link between CEO total compensation for a sample of large firms in the food and tobacco industry, an industry dominated by large companies. The results support the principle-agent theory that lack of competition in an industry may encourage firms to tie the pay of their top executive to the performance of the company. The coefficient for the performance variable, return on equity, is significant in explaining the variation in total compensation for the chief executive officers in the 15 food and tobacco companies in the sample.

Key words: CEO, compensation, agent, principle

INTRODUCTION

The food and tobacco industry is composed of large companies as shown in Table 1. The trend in food is towards corporate concentration in the food supply chain**.** At most stages of processing and distribution, the number of companies involved is diminishing and the market share of the largest players is growing. It is the same in the tobacco business where large players dominate the market place.

Under principal-agent theory as industry concentration decreases and the degree of competition increases shareholders should be able to pay the CEO less and not have to tie the performance of the firm to the pay of the chief executive officer. On the other hand if companies in less competitive industries may be forced to tie executive pay to company performance to motivate their top management to work in shareholder interests.

Chief executive officers for companies in competitive industries are motivated to maximize shareholder wealth and not shirk job responsibility since effort less than that could result in firm bankruptcy or a takeover from a competing firm. But CEOs managing firms that enjoy large market share and product differentiation from competitors may not be as motivated. For these types of firms shareholders may be best served linking executive pay to firm performance.

This paper tests the link between CEO total compensation for a sample of large firms in industries the food and tobacco industry. The results support the principle-agent theory that lack of competition in an industry may encourage firms to tie the pay of their top executive to the performance of the company. The coefficient for the performance variable, return on equity, was significant at an $\alpha = .05$ in explaining the variation in total compensation for the chief executive officers for the 15 food and tobacco companies in the sample.

The paper first reviews the literature on executive pay and company performance. Next, the method to conduct the analysis is presented and the results to the study are offered. Finally, the conclusion is provided.

LITERATURE

Assuming that firms' cost structures are related, an increase in the number of competitors generates additional information not available in a monopoly. The board can use the information to better monitor executive behavior and minimize managerial slack.

Under principal-agent theory as industry concentration decreases (the degree of competition increases) shareholders should be able to pay the CEO less. It would work the opposite for large companies that dominate their markets. In these types of industries shareholders may be forced to attach incentives to CEO pay for company performance to insure maximum effort from top manager in maximizing shareholder wealth.

The premise of the owner-agent relationship is that shareholders and the board of directors do not have enough information to determine if the CEO is making decision in the interest of shareholders or rather in their own interests . Competition forces the executive to work in the best interest of the firm in his decision making (Fama and Jensen, 1983; and Fama, 1980). And if he does not, the company risks bankruptcy or being taken over by a competitor. Both result in the CEO losing his job and the wealth generated by the position. In addition, competitors provide valuable monitoring information so the board of directors can observe the management of firms in a competitive industry to determine how well their own CEO is

performing. Companies in less competitive industries are, therefore, more likely to offer pay incentives that tie company performance to CEO compensation.

Schmidt (1997) concurs that an optimal incentive scheme for executive compensation was a function of competition. He finds that an increase in competition increases the firm's likelihood of exiting the marketplace through acquisition or bankruptcy thereby motivating the manager to exert maximum effort to increase shareholder wealth. According to Schmidt, with abundant competition the firm does not have to tie pay closely to company performance to get maximum effort out of the chief executive officer. Hart (1983) also contends that competition reduces shirking and that competition leads to management increasing effort when compared to a single non-profit maximizing monopolist firm.

Other competing theories by Nalebuff and Stiglitz (1983) do not find a clear cut connection between competition and manager effort in maximizing shareholder wealth. Scharfstein (1988) findings show that executives can receive increased pay under increased levels of competition. The study indicates that each manager's wage depends solely on his firm's performance. He shows that if a manager's marginal utility from income is strictly positive, then an increase in the degree of competition may increase agency costs resulting in higher compensation. Karuna (2007) presents evidence through studying industry concentration that overall shareholders will offer stronger incentives when the degree of industry competition increases. Although he suggests that industry concentration alone may not be a good proxy for competition.

METHOD

The regression equation that is used to test the relationship between CEO pay and company performance for the sample of food and tobacco companies is listed below.

$$(1) \quad \text{CEO Pay}_{it} = \alpha_1 \text{ Tenure}_{it} + \alpha_2 \text{ ROE}_{it} + \alpha_3 \text{ Sales}_{it} + \alpha_4 \text{ Beta}_{it} + \varepsilon_{it}$$

The dependent variable, CEO Pay, is the amount of total compensation paid to the chief executive officer. CEO pay, is taken from the article entitled, *Special Report CEO Compensation*, in Forbes for the years from April 2007 through April 2010. The dependent variable is total compensation for each CEO that includes the following: salary and bonuses; and other compensation, including vested restricted stock grants, and perks; and stock gains which are the value realized by exercising stock options.

Table 1
Food and Tobacco
Company Sample
Altria Group
Campbell Soup
Coca Cola
Coca Cola Enterprises
ConAgra Foods
Dean Foods
General Mills
Hershey
HJ Heinz
Hormel Foods
Kellogg
Molson Coors
Reynolds American
Sara Lee

Smithfield Foods

There are four independent variables included in the model. Tenure is defined as the number of years the CEO has been in his present position as top manager. Leonard (1990) contends that chief executive officer pay should reflect the executive's human capital. The logic is that managers with more time (human capital) invested in the job is expected to perform better, and, therefore, should be paid more. Hill and Phan (1991) present evidence that the connection between chief executive pay and company common stock returns becomes weaker as tenure increases. They conclude that CEOs may use their time in power to become entrenched in their positions enabling them to set their own pay with no regard to company performance. In the regression tenure is used as a proxy for the CEO's human capital. It is calculated as the total number of years the CEO has served as the top executive of his firm. The tenure data for each CEO comes from *Forbes*, *Special Report CEO Compensation*, from the April issue for years 2007 through 2010.

Another important variable in explaining executive compensation is company size. There appears to be a limited amount of managerial talent available to manage large complicated companies so compensation may be used to attract top managers with the appropriate skill set (Stathopoulos, Espenlaub and Walker, 2004; Ittner, Lambert and Larcker, 2003; and Murphy, 2003). Net annual sales is one account on the income statement that is used to measure the impact of firm size on executive pay (Aggarwal and Samwick, 2003; Elston and Goldberg, 2003). It is included in my model as an independent variable and it comes from the S&P Compustat data base for years 2006 through 2009.

Company managers are naturally risk averse since investment opportunities selected by firms are

forecasted as profitable but also run the risk of a poor performance. A poor outcome can mean the executive losing his or her position and the wealth that goes with it. The top manager's risk aversion may therefore cause him or her to make investment decisions counter to the desire of the firm's well-diversified stockholders. Palia (2001) finds the level of company risk affects executive decision making and should affect compensation. One way to encourage CEOs to increase their risk taking with the firm's funds is through pay incentives such as stock and stock options (Murphy, 2003 and Bernasek and Shwiff, 2001). Equity beta is the risk measure used in this study for the 15 company sample of Food and tobacco firms to account for risk. Beta represents the degree of market risk or volatility in common stock returns that cannot be eliminated by

investors even if they are holding a well-diversified portfolio. There should be a positive relationship between CEO pay and the company's beta in the sample. Beta is taken from the S&P Compustat data base.

RESULTS

Table 2 presents yearly summary statistics of the dependent variable, CEO total compensation, and the four independent variables for the sample of 15 large companies in the Food and Tobacco industry from 2006 through 2009. Total compensation includes the salary and bonuses; other compensation, such as vested restricted stock grants, and perks; and stock gains, the value realized by exercising stock options.

Table 2: Summary Statistics

(in $millions)

Variables		2006	2007	2008	2009
CEO Total	Mean	11.500	10.921	7.660	8.584
Compensation	St. Dev	17.380	16.090	5.730	6.047
Tenure	Mean	5.033	4.400	4.670	5.667
	St. Dev	5.051	5.065	5.314	5.314
ROE	Mean	24.442	41.605	39.666	38.059
	St. Dev	23.974	23.974	36.412	31.285
Sales	Mean	$15,264	$13,641	$12,784	$12,368
	St. Dev	$16,123	$ 9,074	$ 6,903	$ 6,943
Beta	Mean	0.488	0.550	0.716	0.670
	St. Dev	0.294	0.261	0.452	0.436

In 2006 the companies my sample paid its top executive officer an average total compensation of $11.5 and was the highest average pay for the four year sample. The CEO of Deans Foods, Greg Engels, received the highest pay of $66 million for both 2006 and 2007. The lowest pay for a CEO in the sample is for David West earning $816,000 in 2007 according to the Forbes data. Table 3 compares total CEO compensation in

the Food and Tobacco industry to all industries for 2009. The average total CEO pay for all industries for 2009 was $8.2 million compared to the Food and Tobacco industry average of $8.6 million. The average total compensation for the Food and Tobacco industry ranked ninth out of 24 industry listed by Forbes for total CEO pay .

Table 3: Average Total CEO Compensation by Industry For 2009

Industry	Total CEO Pay
Aerospace	$ 9.8 million
Banking	3.5
Business Services	6.3
Chemicals	6.0
Conglomerates	19.2
Construction	7.0
Consumer Durables	5.2
Diversified Financials	9.3
Drugs and Biotech	15.2
Food Markets	1.8
Health Care Equipment & Service	8.5
Hotel, Restaurant & Leisure	17.2
Household & Personal Products	8.0
Insurance	7.3
Materials	9.3
Oil & Gas Operations	16.8
Retailing	8.4
Semiconductors	5.7
Software & Services	4.5
Technology, Hardware & Equipment	5.7
Telecommunication Services	9.1
Transportation	5.6
Utilities	8.1
Food and Tobacco	$ 8 .6 million
Average for All Industries	$ 8.2 million

Table 2 also has data for the independent variables for the period from 2006 through 2009 period. Tenure is used as one independent variable which is the number years the CEO of each company in the sample has served as chief operating officer.

The average time the retail CEOs have been in their position is just over five years for each of the four years of tenure data. Return on equity for the 15 companies ranged for an average of 24.4 percent in 2006 to a high of 41.6 percent in 2007. Annual sales for the sample average from 12.4

billion to 15.3 billion over the four year period. The risk measure, beta, for the sample is well below the market average of 1.0. Beta ranged from 0.49 in 2006 to 0.72 in 2008.

Table 4 presents the regression results using ordinary least squares as the estimation method. The dependent variable is the total compensation (salary and bonuses; other compensation, such as vested restricted stock grants, and perks; and stock gains, the value realized by exercising stock options) paid to all chief executive officers. Firm performance is measured by ROE (return on equity). CEO tenure is included as a variable and company size and firm risk are measured by the annual sales and beta, respectively. The t-statistics are reported in parentheses (**) and indicate the level of significance.

Table 4: Regression Results Dependent Variable – Total Compensation

	Coefficient	t-stat
Tenure	1.505***	8.123
ROE	0.050**	2.047
Sales	0.0004***	4.299
Beta	- 6.650**	-3.294
Adj. R^2		.77

* significant at an $\alpha = .05$ ** significant at an $\alpha = .025$ *** significant at an $\alpha = .01$

The results of the regression in Table 4 show that executive pay is significant and positively related to the return on equity at an $\alpha=.05$. This is consistent with the notion that large companies that dominate markets tie CEO pay to company performance to insure the top executive acts in the interests of the firm's shareholders. Sales and tenure are significant at an $\alpha=.01$. The significance of the sales' coefficient is in line with the idea that these large companies are difficult to manage and take a specific skill to be successful and is incorporated in the pay of the CEO. The importance of the tenure coefficient in explaining CEO pay may imply that chief executive officers may acquire knowledge to more efficiently run their companies or use their time in power to become entrenched in their positions enabling them to set their own pay. Surprisingly, the coefficient for beta, the risk measure, is negative and significant. According to the results taking risk is not rewarded in the food and tobacco industry and in fact is penalized. This may be because the industry is composed of a few large players and investment opportunities are not as prevalent as in other industries. The performance coefficient (ROE) is positive and significant

indicating CEO is rewarded for improving the firm. The regression equation has a high level of explanatory power with an adjusted R-squared of .77.

My findings are consistent with agent-principle theory that lack of competition motivates shareholders to link CEO pay to company performance.

CONCLUSION

Chief executive officers for companies in competitive industries are motivated to maximize shareholder wealth and not shirk job responsibility since lack of effort could result in firm bankruptcy or a takeover from a competing firm. CEOs managing firms that enjoy large market share and product differentiation from competitors may not be as motivated. For these types of firm shareholders may be best served linking executive pay to firm performance. This paper tests the link between CEO total compensation for a sample of large firms in the food and tobacco industry, an industry containing a group of big players. The results support the principle-agent theory that lack of competition in an industry may encourage firms to tie the pay of their top executive to the performance of the company. The coefficient for the performance variable, return on equity, is significant at an $\alpha = .05$ in explaining the variation in total compensation for the chief executive officers in the 15 food and tobacco companies in the sample.

REFERENCES

Aggarwal, R.K. and Samwick, A.A. (2003). "Performance Incentives within Firms: The Effect of Managerial Responsibility", *Journal of Finance*, Vol. 58 No. 4, pp. 1613-1650.

Bernasek, A., & Shwiff, S. (2001). Gender, risk and retirement. *Journal of Economic Issues, 35,* 345–356.

Elston, J. & Goldberg, L. (2003) *"Executive compensation and agency costs in Germany,"* *Journal of Banking & Finance,* 27(7): 1391–1410

Fama, E. F. 1980. Agency Problems and the Theory of the Firm. *Journal of Political Economy* 88: 288-307.

Fama, E. and Jensen, M., 1983. Agency problems and residual claims. Journal of Labor and Economics, 26: 326-334.

Hart, Oliver D. "The Market Mechanism as an Incentive Scheme." The Bell Journal of Economics 14.2 (1983): 366-382.

Hill, C.W.L. and Phan, P. (1991). "CEO Tenure As a Determinant of CEO Pay". *Academy of Management Journal*, Vol. 34 No. 3, pp. 707–717.

Ittner, C*.,* Lambert, R. & Larker, D. *(*2003) "The structure and performance consequences of equity grants to employees of new economy companies,*"Journal of Accounting and Economics,* 34*:* 89–127.

Karuna, Christo. "Industry Product Market Competition and Managerial Incentives." The Journal of Accounting and Economics 43. 2-3 (2007): 275-297.

Leonard J. (1990). "Executive Pay and Firm Performance". *Industrial and Labor Relations Review*, Vol. 43, pp. 13-29.

Murphy, K.J. (2003) *"*Stock-based pay in new economy companies," *Journal of Accounting and Economics,* 34(1): 129–147.

Nalebuff, Barry J. and Joseph E. Stiglitz. "Information, Competition, and Markets." The

American Economic Review 73. 2 (1983): 278-283

Palia, D., 2001. The endogeniety of managerial compensation in firm valueation: A solution. Rev. Finance Stud., 14: 735-764.

Scharfstein, D. (1988), Product Market Competition and Managerial Slack", Rand Journal of Economics 19, 147-155.

Schmidt, K. (1997) Managerial incentives and product market competition, Review of Economic Studies, 64 pp. 191-213.

Stathopoulos, K., Espenlaub, S. & Walker, M. (2004) "UK executive compensation practices: New economy versus old economy," *Journal of Management Accounting Research*, **16(**1*): 57–92.