CORPORATE GOVERNANCE AND THE USE OF EVA COMPENSATION

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Abstract

The purpose of this paper is to determine if companies that chose to incorporate Economic Value Added (EVA®) as part of their executive compensation package tend to have better corporate governance than similar firms who have not chosen to use EVA®. EVA® is an economic profit metric developed by Stern Stewart & Co., which is calculated by taking the Net Operating Profits after Taxes (NOPAT) and subtracting a capital charge from it. Through the use of binary logistic regression the strength of several key corporate governance measures were tested in order to ascertain whether they have a significant impact on influencing a firm to use EVA®. A major finding is that firms that employed EVA® as part of their compensation package tend to have a weaker corporate governance.

Keywords: Corporate Governance, EVA, Executive Compensation

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Introduction

Economic Value Added (EVA®) is a performance metric developed by Stern Stewart & Co. in the early 1990's. Since that time there has been a wealth of empirical studies performed which analyzed the explanatory power of EVA® by looking at the correlation between EVA® and equity returns. There has also been a large body of studies which examined the change in management behavior after the adoption of EVA® as a performance measure.

This paper adds to the extant literature by studying the role corporate governance plays with the selection of EVA®. To study the quality of corporate governance within a firm one critically important component will be the composition of the board of directors. The board of directors are elected by the shareholders to oversee management and ultimately approve the compensation packages and the performance metrics by which management will be judged.

We have compiled a useable sample of 52 companies that implemented EVA® as a part of their compensation package. Those EVA® companies are matched with 52 companies who do not use EVA®. The results indicate that there is a significant correlation between poorer corporate governance and the selection of EVA® as a performance measure. Part 1 of the paper provides a detailed literature review of EVA® and applications. Part 2 discusses the data collection, methodology, and analysis. The results and conclusions of the study are provided in Part 3.

1. Literature Review

Economic Value Added (EVA®) is a metric that was created by Stern Stewart & Co. which is conjectured to provide a better link to value creation then any of the other current metrics in practice including EPS, FCF, RONA, ROE, ROA and other ratios or multiples. Evans and Evans (1998) suggest that "under agency theory, the agent (CEO) is attempting to maximize their utility within the constraints imposed by the principal (owner)." Therefore if the wrong metric is chosen to judge the performance of an executive then he/she will conduct their actions in such a way which will maximize that metric, whether or not it is creating value for the shareholders. This is the reason why it is so important to identify a metric which provides a stronger link to value creation then any other criteria. The effect of this would be a minimization of agency costs, which would create value for shareholders. G. Bennett Stewart (1991) demonstrates that EVA® is the solution. Stewart defines EVA® as Net Operating Profits after Taxes (NOPAT) minus a capital charge. The key difference between EVA and accounting-based performance measures is the capital charge includes the opportunity cost of providing equity capital. Hence,

the hurdle rate includes the explicit cost of debt (interest expense) and implicit cost of equity (opportunity cost). Accordingly, NOPAT can be defined as follows:

NOPAT = Income available to common equity + Preferred dividends + Minority interest + Interest expense + Increase in equity equivalents

Stewart (1996) claims that increasing EVA® will positively correlate with increasing the value of the firm, and thus become the key value driver of any company. EVA® can only be increased in three ways: (1) increase NOPAT, (2) decrease the amount of capital used, or (3) decrease the WACC. In theory, there are no additional information problems between shareholders and managers and so the link to increasing shareholder value must flow through one of the above conditions.

Drucker (1995) states the theory behind EVA®. He suggests, "Until a business returns a profit that is greater than its cost of capital, it operates at a loss." This definition implicitly incorporates the opportunity cost of capital whereas the firm may operate profitably from an accounting point of view, i.e. Net Income is positive. The theory behind EVA® is similar to that behind NPV, in that they both have to exceed their respective costs of capital in order to create value. For both EVA® and NPV if they do not exceed zero the company or project is destroying value for the shareholders.

Stewart (1991) examined the relationship between Market Value Added (MVA) and EVA®. His sample consisted of 618 US companies with data gathered from the late 1980's. He concluded that the relationship between MVA and EVA® was strong when EVA® was positive. However, the relationship tended not to hold up that well when EVA® became negative. A major reason for this could be the fact that no matter how bad companies do they still have the option of liquidation, which may create a floor for the MVA.

Uyemura, Kantor and Pettit (1996) studied 100 bank holding companies again to examine the relationship between MVA and EVA® in the banking sector. The data was collected over a ten year period from 1985 to 1995. They set up a regression with MVA as the dependent variable and EVA®, ROA, ROE, Net income, and EPS as the independent variables. The correlations between the performance measures and MVA were as follows: EVA® (0.40), ROA (0.13), ROE (0.10), Net income (0.80) and EPS (0.60). These results are contrary to the conclusions found in the Economist article, "Valuing Companies – A Star to Sail by?"(1997). In this article the author suggested that EVA® metrics would not work well for financial companies, since they must hold capital on the side for regulatory purposes. O'Byrne (1996), also of Stern Stewart & Co., reported similar results in his study. He found that over a five year period the changes in EVA® year over year explained 55% of the variation in the year over year changes of MVA. He had even better results once the study was enlarged to look at a ten year period. Over a ten year period the year over year changes in EVA® explained 74% of the variation in the year over year changes of MVA. However, the studies conducted by employees of Stern Stewart & Co. must be qualified since there are obvious conflicts of interest. The following partial list of research studies conducted by independent, i.e. non-Stern Stewart employees, provides additional insight into the relationship.

Milunovich and Tsuei (1996) also report a high correlation between EVA® and MVA. In their study they showed that EVA® explained 42% of the variation in MVA, while EPS growth only explained 34% of the variation in MVA, and ROE and EPS only explained 29% of the variation in MVA.

Lehn and Makhija (1996) also studied the link between MVA and EVA®. Their data consisted of 241 US companies covering 1987 – 88, and 1992 -93. They concluded that EVA® correlates slightly better than ROA, ROE, or ROS with MVA. More interestingly in their study they found that CEO turnover was significantly related to EVA®. In a follow up study, Lehn and Makhija (1997) concluded that CEO's are evaluated more on the basis of EVA® then they are with other accounting metrics.

Biddle, Bowen and Wallace (1999) came to an interesting conclusion in their analysis of the annual *Fortune 1000* performance over the period of 1988 - 1997. The authors find that the difference between EVA® and Residual Income is fairly small which would indicate that the majority of the adjustments that Stern Stewart makes in calculating EVA® tend to offset each other. Anderson, Bey and Weaver (2004) also agree with these conclusions. They found very strong correlations between adjusted and unadjusted EVA®, which led them to question the usefulness of calculating and making these set of adjustments.

Biddle, Bowen and Wallace (1999) analyzed at a set of 6,174 firms over the period from 1984 -1993. They regressed EVA®, residual income, net income (before extraordinary items), and cash flow from operations (CFO) against annual market adjusted stock returns. The results showed that net income is significantly more associated with market adjusted stock returns than any of the other metrics. The correlation coefficients were as followed, NI (0.13), RI (0.70), EVA® (0.60), and CFO (0.30). The regressions over a cumulative five year window also show net income to generate the highest pair-wise correlation coefficient of (0.31), followed by CFO (0.19), EVA® (0.14), and RI (0.11). These results are contrary to the findings of the previously mentioned studies which seem to indicate a strong relationship between EVA® and share price.

Biddle, Bowen and Wallace (1999) also studied the actions of management to see if firms that adopted EVA® changed relative to the period before

the EVA® adoption. Their results found a statistically significant increase in the amount of asset dispositions and a statistically significant decrease in the amount of asst acquisitions, pos- adoption of EVA®. The authors also report a statistically significant increase in the amount of share repurchases. Broadly speaking, All three of these corporate activities are consistent with the actions expected from a company following an EVA® maximization strategy. They also found that EVA® increased 1300% after the adoption of EVA® into the executive compensation plans, which shows that management will seek to maximize the metric directly tied to their compensation. This finding reiterates why it is so important to find the right metric defined as the one that has the highest correlation with stock returns. Wallace (1997) in his earlier study also found similar results with regard to the decisions managers make when their compensation is linked to EVA® improvements. He observed that when EVA® firms were compared with non-EVA® firms, EVA® firms tended to: 1) make less investments, 2) dispose of more assets, 3) made more share repurchases, and 4) used their assets more intensely.

Chen and Dodd (1998) studied a sample of 668 US firms taken from Stern Stewart's performance 1000 database over a ten year period. They regressed operating income, residual income, and EVA® against stock returns. Their empirical results found operating income, residual income and EVA® to have a 0.06, 0.05 and 0.02 correlation, respectively. Therefore they concluded that EVA® exhibits less explanatory power than the more traditional accounting measures.

It is also to point out that the EVA® metric has limitations as well. This was the focus of Riceman, Cahan, and Lal (2000). Their goal was to how easy it was for corporate executive using EVA® to truly understand what activities would increase it. In their research design, executives at companies employing EVA completed questionnaires. Surprisingly, the authors conclude that the executives had a relatively poor understanding of what activities would increase EVA®. Using a standard grading system (A-F), the average score would have been a D. The analysis also bifurcated the sample into firms that understand EVA and firms that do not. Not surprisingly, the interaction between understanding EVA® and using EVA® revealed interesting insights. In particular, companies that had both understanding and EVA® usage outperformed against the sample companies, while companies that used EVA® but did not fully understand the metric, under performed against the sample companies.

Overall the results of EVA® studies seem to be conflicting. Many of the studies conducted by Stern Stewart & Co. and some of the independent studies tend to support a strong relationship between EVA® and price. However, the majority of studies performed, especially the ones with larger sample sizes, seem to indicate that EVA® is in fact less correlated to market returns than EPS or other commonly used metrics.

2. Data and Analysis

The universe of sample companies were selected to be used in this study were identified by one of two ways. The first group of firms that use EVA® were identified directly from Stern Steward & Co website. These are firms which selected to use EVA® as part of their compensation system under the guidance of Stern Stewart & Co. The second set of firms was identified by their stated use of EVA® as part of their compensation package in their proxy statement. The second set of firms was hand collected after searching the Lexis-Nexis database with appropriate key word searches. All firms that used EVA® for at least two consecutive years over the period from 1990 to 2000 were included in the sample. The rationale behind this data screen is that if a firm used EVA® for less than two years it was likely not a large part of their compensation package or compensation philosophy. It is likely that these firms would not have the same characteristics of a true EVA® company and would be misclassified. This procedure yielded 87 EVA® companies, 45 of which were being advised by Stern Stewart & Co. and 42 of which were implementing EVA® without the help of Stern Stewart & Co. From this sample only 52 companies (36 Stern Stewart & Co., 16 non Stern Stewart & Co.) could be used in the analysis due to data limitations. The primary data item that was missing was the overnance Index developed by Gompers, Ishii, Metrick (2003). In short, the index compiles 24 anti-takeover and governance variables to rate each firm. The 52 remaining EVA® companies were paired up with a size and industry matched, non-EVA® company. Specifically, the matched sample found the firm with closest total assets within the same two-digit SIC code. This pairwise procedure should control for any systematic size or industry effects.

The data used in the study is based upon the first identifiable filing date of the proxy denoting the use of EVA® in the compensation scheme. The paired firms use the closest available proxy relative to the event firm. Return data were compiled from the Center for Research in Securities Prices (CRSP) database. Information relating to SIC codes, total assets, balance sheet ratios and other accounting data were gathered from Compustat. The corporate governance data was extracted directly from firm proxy statements available on EDGAR. The Governance Index (GIndex) data used in this study was constructed by Gompers, Ishii, and Metrick (2003). The GIndex is calculated by adding one point for every corporate provision which reduces shareholder rights, e.g. staggered board. In total, twenty four different provisions are examined so the GIndex for each firm must fall within 0-24 range. A

high GIndex would signal that management possesses a relatively entrenched and/or poorly aligned management.

The basic empirical methodology is as follows: t-tests are used in the univariate analysis and binary logistic regressions are used in the multivariate analysis. Twelve independent variables have been identified in the extant literature as possible drivers of EVA® selection. A complete description of all variables used in the analysis can be found in Table 2. The corporate governance variables used in this study include the GIndex, percentage if insider directors, percentage of outsider directors, percentage of gray directors, board size, and whether the CEO holds a dual leadership position (also serves as chairman of the board). Besides corporate governance variables, we include return variables in the analysis to examine if there is any systematic influence on the choice of EVA® selection.

Two control variables (total assets and long term debt / total capital) appear in all regression models. The reason for including these variables is that firms significantly different in size and leverage may have, on average, drastic differences in board composition and market returns, respectively.[10] By including those two variables in the regression, any systematic influence can be controlled for. The Pearson correlation coefficients between the variables are displayed on Table 3. The only variables which have a correlation which exceeds 0.50 in magnitude are (1) % Inside with % Outside variables with -0.69 correlation and (2) excess (1yr) with excess (3yr), 0.56pair-wisecorrelation. The signs of these correlations fit our intuition: the percent of insiders will move inversely with the percent of outsiders on the board. Similarly, the 3 year excess return will be positively related to the 1 year return. In the empirical models, only one measure is used at a time. The remainder of the other variables are not strongly correlated therefore inclusion should not bias the coefficients or standard errors. Table 4 summarizes the t-test for the difference in means between the EVA® and Non EVA® samples. The results indicate two variables that yielded significant differences. The first variable was the GIndex which is significant at the 1% level. The GIndex difference reported a significantly positive t-statistic which means that EVA® companies tended to have a higher GIndex indicating poorer corporate governance. The dual leadership variable (CEO = CBOD) was significant at the 6% level. The t-statistic was also positive indicating that EVA® companies tended to have the CEO also serve as the chairman of the board more often than non-EVA® companies. This is anecdotally also indicative of poorer corporate governance among EVA® companies. We also note EVA® possess marginally more insiders (p=0.11) also signaling greater inside board representation and weaker corporate governance.

Although the univariate analysis reported significance in two of the variables it is necessary to check to see if the influence is retained under the multivariate analysis framework. For the multivariate analysis a binary logistic regression was performed on the data since the dependent variable (whether or not the firm uses EVA®) was constructed as an indicator variable. The results of the regression models are shown on Table 5. Interestingly, the full regression model yields only one significant variable, the GIndex (p=0.021). However, under the multivariate framework the CEO=CBOD variable is no longer significant. We also note that the constant in the equation is not significantly different from zero which indicates the independent variables in the regression model are explaining most of the variation in the dependent variable. The Omnibus tests of model coefficients also supports these findings as the Chi-square test for the model is significant at the 10% level indicating a good fit for the regression model.
In a logistic regression the interpretation of the estimated coefficients is subtle. For instance the only significant variable in the regression, the GIndex, has a logit coefficient of 0.211. All of the odds ratios can be found on Table 5 under the heading Exp(B). The interpretation is that for every one unit increase in the independent variable the odds that the dependent variable will be one increases by the odds ratio. So, for every one point increase in the GIndex the odds that the company will use EVA® compensation increases by 1.235.

An additional logit regression was performed including the 3-year excess return prior to EVA adoption. The sample size is reduced to 94 based on data availability. The results are displayed in Table 6. From this regression there appears to be no significance in the ability of the prior three years excess returns to predict whether a company will use EVA®. However, the GIndex continues to be significant at the 5% level providing robustness to the previous empirical finding.

The final regression that was performed was a regression where the dependent variable denotes if the firm was advised by Stern Stewart Co. The independent variables remained the same as for the first regression model. The sample was necessarily reduced by this limitation and yielded a sample size of 52. The logistic output can be found on Table 7. The results find one variable that distinguishes the firms that use Stern Stewart and those that do not, board size (p=0.011). The results indicate that larger boards tend to use Stern Stewart more than smaller boards, all else equal. The interpretation of this result is not clear. First, there is ample anecdotal evidence and prior research that finds that larger boards are unwieldy and provide less oversight of firm management. Thus, the board may be enacting its fiduciary responsibility to outsource a component of

[10] There are many studies that document a firm-size effect.

CEO compensation. Second, larger boards are more likely to be process-oriented and employing an outside consultant is consistent with that interpretation. Smaller boards are more likely to be ad hoc in their decisions and processes.

We also validated the model by computing the correct classification. The overall correct classification is 73% as reported in Table 8. In addition, Wald Test was performed to observe how far the estimated parameters differ from zero. Note that the Wald test can be used to test multiple parameters simultaneously. The results are tabulated in Table 9. The interpretation of Wald test for the variables is provided in the forthcoming section of conclusions.

3. Conclusions

The results of this study provide evidence that EVA® firms tend to have a higher GIndex than non-EVA® firms. Since a higher GIndex number indicates more entrenched / less aligned management, it provides a strong signal of poorer corporate governance. Therefore this study suggests that firms that chose to use EVA® as part of their compensation package tend to have weak corporate governance. This finding is somewhat counterintuitive as firms that use EVA® would a priori be expected to have better corporate governance. This opens a larger question of why do EVA® firms have poorer corporate governance than non-EVA® firms. This question is beyond the scope this research. However, it could be speculated that companies which suffer from poor corporate governance want to window dress the quality of their governance by selecting EVA® as a performance measure. Note that the claim and perception behind EVA® is that it will align shareholder's and manager's goals more effectively. A second plausible explanation is that firms that exhibit relatively poor corporate governance, could employ the EVA® metric as a conscious choice to reduce agency costs.

This study also show finds no significant difference in the returns achieved by companies which use EVA® compared to companies which do not use EVA® after controlling for industry and size. Further, prior performance does not appear to influence the decision to adopt EVA. Since the return data prior to the implementation of EVA® and after the implementation of EVA® shows no significant difference when compared to the non EVA® companies over the same time span, it does not help explain why weak boards tend to select EVA® as a performance measure. It does however show that the choice of using EVA® does not have an observable, significant effect on performance.

It is also interesting to note that there was no significance found in the multivariate analysis for any of the other corporate governance variables aside from GIndex. Another question raised by these findings is about the lack of influence on the board structure. Why there was no role for the board structure if the quality of corporate governance plays such a strong role in determining whether a company will use EVA®? The answer may be that "outsider" directors are sometimes not really outsider directors in substance. The results are also consistent with the robustness of the GIndex subsuming the impact of individual board characteristics for a more holistic measure.

The final regression performed showed that the excess returns after the implementation of EVA® were statistically equivalent between firms under the guidance of Stern Stewart & Co. compared with firms that implemented EVA® on their own. It is important to note that this study, as all empirical studies, has limitations. First, this study used a restrictive sample size of only 52 companies employing EVA®. A larger sample size, if available, might yield additional insight into the nuances of corporate governance. Second, firms may differ in their use of EVA® as part of executive compensation. For example, some firms may tie EVA® to salary and others may link EVA® to bonuses or incentive compensation only. Unfortunately, the proxy statements did not provide enough information to further differentiate EVA® beyond a simple binary variable.

Nevertheless, the results of this study should bring to light the importance the quality of corporate governance has on the implementation of EVA®, executive compensation and more generally the complex principal-agent relationship between shareholders and manager.

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Appendices

Table 1. Paired sample firms using EVA® vs. not using EVA

Name of Firm	Ticker	Firms uses EVA® (1) or Not (0)
ARMSTRONG WORLD INDUSTRIES INC	ACK	1
AVERY DENNISON CORPORATION	AVY	1
COOPER CAMERON CORP	CAM	1
CILCORP INC	CER	1
FLEMING COMPANIES INC /OK/	FLM	1
FLOWSERVE CORP	FLS	1
GENESCO INC	GCO	1
GREAT LAKES CHEMICAL CORP	GLK	1
IMMUNOMEDICS INC	IMMU	1
MILACRON INC	MZ	1
PERFORMANCE FOOD GROUP CO	PFGC	1
CHILDRENS PLACE RETAIL STORES INC	PLCE	1
TENNECO AUTOMOTIVE INC	TEN	1
TARGET CORP	TGT	1
TECHNITROL INC	TNL	1
WHOLE FOODS MARKET INC	WFMI	1
Acxiom	ACXM	1
ADC Telecommunication	ADCT	1
Best Buy	BBY	1
Biose Cascade	BCC	1
Becton Dickinson	BDX	1
Briggs & Stratton	BGG	1

Table 1 continued

Bausch & Lomb	BOL	1
Bowater	BOW	1
Centura Banks	CBC	1
CDI Corp	CDI	1
Crane	CR	1
RR Donnelly & Sons	DNY (RRD)	1
Equifax	EFX	1
Sprint	FON	1
Guidant	GDT	1
Georgia Pacific	GP	1
Hershey Foods	HSY	1
Interntaional Multifood	IMC	1
JC Penny	JCP	1
Coca Cola	KO	1
ELI Lilly	LLY	1
Millenium Chemical	MCH	1
Herman Miller	MLHR	1
Material Sciences Corp	MSC	1
Manitowoc Company	MTW	1
Noble Drilling	NE	1
Olin	OLN	1
Perkinelmer	PKI	1
Ryder Systems	R	1
Silicon Valley Bank	SIVB	1
Standard Motor Products	SMP	1
SPX	SPW	1
Tenet Healthcare	THC	1
Toys R US	TOY	1
Tupperware	TUP	1
Vulcan Materials	VMC	1
Cabot Corp	CBT	0
Central Louisiana Electric	CNL	0
Costco	COST	0
Donaldson Company	DCI	0
Deb Shops	DEBS	0
Goodyear Tire	GT	0
Millennium Phamaceuticals	MLNM	0
Newell Rubermade	NWL	0
Patterson Companies	PDCO	0
Pall Corp	PLL	0
Rex Stores	RSC	0
Sonoco Products	SON	0
Sysco	SYY	0
Trimble Navigations	TRMB	0
Varco International	VRC	0

Table 1 continued

Weis Markets	WMK	0
Anchor Bankcorp	ABCW	0
Aptar Group Inc	ATR	0
Brunswick	BC	0
BJ Services	BJS	0
BMC Industries	BMC	0
Bristol Myers Squibb	BMY	0
Circuit City	CC	0
Cerner Corp	CERN	0
Chiron Corp	CHIR	0
Dun & Bradstreet	DNB	0
Downey Financial	DSL	0
Gannett Inc	GCI	0
General Mills	GIS	0
W.R. Grace	GRA	0
HCA Inc.	HCA	0
Hertz	HRZ	0
Kimball International	KBALB	0
Kimberly Clark	KMB	0
Lamson & Sessions	LMS	0
Magnetek Inc.	MAG	0
May Department Stores	MAY	0
Martin Marietta Materials	MLM	0
Office Depot	ODP	0
Pepsi	PEP	0
Pentair, Inc.	PNR	0
Qwest Communication	Q	0
Robert Half Intl	RHI	0
Scientific - Atlanta Inc.	SFA	0
Smurfit Stone Container	SSCC	0
St. Jude Medical	STJ	0
Terex Corp	TEX	0
Temple - Inland	TIN	0
Tootsie Roll Ind	TR	0
Varian Medical Systems	VAR	0
WHX Corp	WHX	0
York International	YRK	0

Table 2. Definitions of Variables

Definition of variables used in the study. Returns data are from CRSP and accounting data are form Compustat. The GIndex is from Gompers, Ishiii and Metrick (2003).

Variable	Definition
EVA® Companies	Dummy variable which represents whether a firm uses EVA® or not
Stern Companies	Dummy variable which represents whether a firm is advised by Stern Stewart & Co. or not
GIndex	Represents the GIndex number for the respective firm
NBOD	Represents the number of members on the board of directors for the respective firm
% Outside	Represents the % of outside directors on the board
% Inside	Represents the % of inside directors on the board
% Gray	Represents the % of gray directors on the board
CEO=CBOD	Dummy variable which represents whether the CEO is also the chairman of the board of directors or not
Excess (1YR)	One year return of the company (starting on the date of the proxy release which first used EVA® as a performance measure) minus the one year return of the CRSP value weighted index over the same period
Excess (3YR)	Three year return for the company (starting on the date of the proxy release which first used EVA® as a performance measure) minus the three year return of the CRSP value weighted index over the same period
Excess (-3YR)	Three year return for the company (starting three years before the date of the proxy release which first used EVA® as a performance measure) minus the three year return of the CRSP value weighted index over the same period
Total Assets	Dollar value of the total assets within a firm (in millions)
LTD / Capital	Long term debt of the company divided by the capital of the company

Table 3. Pearson Correlation Statistics

Pearson correlation coefficients for the independent variables used in this study. The sample size is 52 EVA® firms and a matched sample of 52 non-EVA® firms. Stock return data are from CRSP and financial accounting data are from Compustat. GIndex is from Gompers, Ishii and Metrick (2003). Board size (NBOD), % insiders, % outsiders and % gray directors are from proxy statements using standard classification.

		GINDEX	NBOD	% Outside	% Inside	% Grey	CEO=CBOD	Excess (1YR)	Excess (3YR)	LTD / Capital	Total Assets
GINDEX	Pearson		0.268***	0.385	-0.168	-0.288***	.193**	-0.137	-.195**	-0.062	-0.088
	p - value		0.006	0.156	0.108	0.003	0.049	0.164	0.047	0.531	0.374
NBOD	Pearson			0.32***	-0.168*	-0.281***	0.015	-.213**	-0.171*	.181*	.445***
	p - value			0.001	0.088	0.004	0.879	0.03	0.082	0.066	0.001
% Outside	Pearson				-.691***	-.702***	0.098	-0.105	-.189*	0.131	0.04
	p - value				0.001	0.001	0.323	0.29	0.055	0.185	0.69
% Inside	Pearson					-0.022	-.259***	0.107	.177*	-0.073	-0.104
	p - value					0.826	0.008	0.279	0.073	0.46	0.292
% Grey	Pearson						0.137	0.047	0.09	-0.111	0.049
	p - value						0.165	0.637	0.362	0.262	0.62
CEO=CBOD	Pearson							-0.084	-0.081	-0.011	0.028
	p - value							0.396	0.413	0.912	0.781
Excess (1YR)	Pearson								.556***	-0.133	-0.044
	p - value								0.001	0.177	0.659
Excess (3YR)	Pearson									-0.076	-0.04
	p - value									0.441	0.687
LTD / Capital	Pearson										.168*
	p - value										0.088
Total Assets	Pearson										
	p- value										

* Denotes significance at the .10 level
** Denotes significance at the .05 level
*** Denotes significance at the .01 level

Table 4. Differences between EVA® and non-EVA® sample

The sample size is 52 EVA® firms and a matched sample of 52 non-EVA® firms. Stock return data are from CRSP and financial accounting data are from Compustat. GIndex is from Gompers, Ishii and Metrick (2003). Board size (NBOD), % insiders, % outsiders and % gray directors are from proxy statements using standard classification.

	N	EVA Mean	Non EVA Mean	Mean Diff.	t-stat	p-value
GINDEX	52	10.65	9.05	1.60	3.383	0.001***
NBOD	52	10.15	9.75	0.40	0.986	0.329
% Outside	52	52.55%	49.38%	3.16	0.972	0.336
% Inside	52	25.34%	29.29%	-3.95	-1.641	0.107
% Grey	52	22.32%	21.11%	1.21	0.581	0.564
CEO=CBOD	52	0.846	0.673	0.17	1.925	0.06*
Excess (1YR)	52	8.38%	7.08%	1.29	0.131	0.897
Excess (3YR)	52	-2.97%	5.85%	-8.81	-0.472	0.639
LTD / Capital	52	37.39%	38.53%	-1.15	-0.219	0.827
Total Assets	52	3,518	3,915	-397.06	-0.787	0.435

* Denotes significance at the .10 level
** Denotes significance at the .05 level
*** Denotes significance at the .01 level

Table 5. Binary Logistic Regression (N=104)

The sample size is 52 EVA® firms and a matched sample of 52 non-EVA® firms. Stock return data are from CRSP and financial accounting data are from Compustat. GIndex is from Gompers, Ishii and Metrick (2003). Board size (NBOD), % insiders, % outsiders and % gray directors are from proxy statements using standard classification.

	B	p-value	Exp(B)
GINDEX	0.211	0.021**	1.235
NBOD	0.051	0.607	1.052
% Outside	-0.020	0.291	0.980
% Inside	-0.031	0.219	0.969
CEO=CBOD	0.681	0.199	1.976
Excess (1YR)	0.354	0.479	1.425
Excess (3YR)	-0.026	0.910	0.975
LTD / Capital	0.001	0.889	1.001
Total Assets	0.001	0.603	1.001
Constant	-1.217	0.479	0.296

* Denotes significance at the .10 level
** Denotes significance at the .05 level
*** Denotes significance at the .01 level

Table 6. Binary Logistic Regression (N=94)

The sample size is 47 EVA® firms and a matched sample of 47 non-EVA® firms are data screens. Stock return data are from CRSP and financial accounting data are from Compustat. GIndex is from Gompers, Ishii and Metrick (2003). Board size (NBOD), % insiders, % outsiders and % gray directors are from proxy statements using standard classification.

	B	p-value	Exp(B)
GINDEX	0.204	0.036**	1.226
NBOD	0.072	0.487	1.075
% Outside	-0.024	0.221	0.976
% Inside	-0.040	0.133	0.960
CEO=CBOD	0.239	0.676	1.270
Excess (-3YR)	0.002	0.291	1.002
Excess (1YR)	0.605	0.254	1.832
Excess (3YR)	-0.066	0.779	0.936
LTD / Capital	0.003	0.720	1.003
Total Assets	0.001	0.575	1.001
Constant	-0.569	0.751	0.566

* Denotes significance at the .10 level
** Denotes significance at the .05 level
*** Denotes significance at the .01 level

Table 7. Binary Logistic Regression – Stern vs. Non Stern (N=52)

The sample size is 52 EVA® firms denoted 36 that use Stern Stewart and 16 that did not. Stock return data are from CRSP and financial accounting data are from Compustat. GIndex is from Gompers, Ishii and Metrick (2003). Board size (NBOD), % insiders, % outsiders and % gray directors are from proxy statements using standard classification.

	B	p-value	Exp(B)
GINDEX	-0.155	0.405	0.856
NBOD	0.706	0.011**	2.026
% Outside	-0.006	0.873	0.994
% Inside	0.035	0.480	1.036
CEO=CBOD	-0.084	0.946	0.919
Excess (1YR)	0.172	0.811	1.187
Excess (3YR)	0.230	0.690	1.258
LTD / Capital	-0.013	0.413	0.987
Total Assets	0.001	0.613	1.001
Constant	-4.099	0.220	0.017

* Denotes significance at the .10 level
** Denotes significance at the .05 level
*** Denotes significance at the .01 level

Table 8. Classification Summary

The sample size is 52 EVA® firms and a matched sample of 52 non-EVA® firms. Model output and firm observation are used to construct table.

Observed	Predicted by the Model		Percentage Correct
	EVA®	Non_EVA®	
EVA®	42	10	82
Non EVA®	17	35	68
Overall Classification			73

Table 9. Summary Statistics

The sample size is 52 EVA® firms and a matched sample of 52 non-EVA® firms. Stock return data are from CRSP and financial accounting data are from Compustat. GIndex is from Gompers, Ishii and Metrick (2003). Board size (NBOD), % insiders, % outsiders and % gray directors are from proxy statements using standard classification. Output is based on logistic regression and Wald statistic.

Variables Used	B	S.E.	Wald	Sig	Ranking
Gindex	.03	.025	16.1	.006 ***	1
NBOD	.06	.14	18.2	.092	N/A
%Outside	-.03	.16	14.3	.121	N/A
%Inside	-.05	.29	2.1	.152	N/A
CEO=CBOD	.25	.15	3	.183	N/A
Excess -3Yr	.003	.8	13.5	.232	N/A
Excess 1 yr	.58	.73	17.1	.182	N/A
Excess 3 yr	-.05	.42	18.3	.132	N/A
LTD/Capital	.002	.32	17.2	.121	N/A
Total Assets	.002	.40	12.4	.139	N/A
Constant	-.60	.65	11.5	.143	N/A

*** Significant at 1%