

Paychecks with a Purpose: Evaluating the Effectiveness of CEO Equity and Cash Compensation for the Triple Bottom Line

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Outline

- 1 Introduction
- 2 Motivation
- 3 Data
- 4 Results
- 5 Conclusion

Introduction

Introduction

2011-2020 was the warmest decade recorded, with global average temperature reaching 1.1°C above pre-industrial levels in 2019. Human-induced global warming is presently increasing at a rate of 0.2°C per decade.¹



¹ European Commission

Introduction

Triple Bottom Line ²



²Elkington, 1998

Motivation

Motivation

- Linking a CEO's compensation to the company's stock-market price via stock or options is the prevailing approach.
- Literature indicates that the stock market does not consistently prioritize high sustainability performances.³
- Therefore, we question the long-term orientation of equity compensation and the short-term orientation of cash compensation in relation to sustainability performance.
- CEOs that receive a large part of their compensation in the form of equity, are more sensitive to the market.⁴
- A high proportion of cash compensation alleviates the burden or opportunity costs for a CEO, of the market punishing substantial CSR investment, facilitating long-term CSR investments.

³Edmans, 2011; Harjoto et al., 2017; Lopatta et al., 2022; Wang et al., 2008

⁴Walker, 2022

Contribution

- Including ESG metrics in CEO compensation packages proves to be ineffective.⁵ [Go to Appendix](#)
- We provide new insights into CEO compensation research as it expands the role of CEO compensation from financial performance alone, to a triple bottom line view.
- More detailed understanding of how the level of sustainability of a firm is composed through sub-scores.
- Karim et al. (2018) examine how the compensation elements of equity and cash are connected to a company's comprehensive sustainability performance score. We study their alternative effects on specific types of sustainability strategies.
- Data provides non-causal explanations.

⁵Fabrizi et al., 2014; Maas, 2018; Bebchuk Tallarita, 2022; Walker, 2022

Objective

In which ways can firms construct a compensation scheme to incentivize not only for profit but also for people and the planet?



Data

Sources

Refinitiv

333 individual variables for social and environmental performance, and board control variables

Execucomp (Compustat)

Compensation variables and CEO control variables

CRSP & Compustat

Company control variables

Multi-Criteria Rank-Ordering Algorithm ⁶

Example.

A	B	C	A	B	C
Yes	Yes	No	0,1	0,1	0,0
0.7	.	1.1	0,0	0,0	1,0

Intentions

- Activity
- Policy
- Target
- Reporting

Outcomes

- Performance
- Controversy

⁶Wittkowski, 2003

Results

Summary Statistics

Table 1
Descriptive statistics.

	N	Mean	Median	St Dev	Minimum	25th p.	75th p.	Maximum
CSR Variables								
E outcomes	152731	5.38	5.75	2.64	0.01	3.14	7.61	9.79
E intentions	152731	4.86	5.29	1.82	0.69	3.40	6.31	8.02
S outcomes	152731	5.15	5.00	1.83	1.00	3.96	6.38	9.99
S intentions	152731	5.08	5.14	1.19	0.42	4.68	5.87	8.80
ESG score	152612	4.32	4.05	1.90	0.05	2.83	5.70	9.52
Compensation Variables								
cash	152731	1182.79	970	1519.71	0.00	750	1200	77926
equity	151827	4684.06	3197.57	7082.17	0.00	1186.38	6177.36	277000
%cash	152731	0.24	0.17	0.21	0.00	0.11	0.28	1.00
%equity	152731	0.50	0.56	0.27	0.00	0.35	0.69	1.00
total comp	152731	7748.10	5843.41	8465.50	0.00	3219.17	9784.77	281000
sust comp incent	152731	0.22	0.00	0.42	0.00	0.00	0.00	1.00
Control Variables								
lnMVE	152731	8.56	8.45	1.51	0.00	7.54	9.54	12.31
book/market	147456	0.54	0.44	0.42	0.03	0.25	0.73	2.35
roa	152252	0.13	0.12	0.10	-0.15	0.07	0.18	0.45
roe	147331	0.13	0.12	0.23	-0.74	0.06	0.20	1.22
boardsize	152731	10.11	10.00	2.49	0.00	8.00	12.00	35.00
nonexec	152731	83.56	85.71	9.63	0.00	80.00	90.91	100.00
ceo duality	152731	0.66	1.00	0.48	0.00	0.00	1.00	1.00
age	152339	57.15	57.00	6.79	28.00	53.00	61.00	90.00
gender	152731	0.04	0.00	0.20	0.00	0.00	0.00	1.00

Correlations

Table 2

Pearson correlation.

Variables	1	2	3	4	5	6	7	8
(1) E outcomes	1							
(2) E intentions	-0.404*	1						
(3) S outcomes	-0.003	0.033*	1					
(4) S intentions	-0.315*	0.540*	0.063*	1				
(5) ESG Score	-0.394*	0.530*	0.111*	0.609*	1			
(6) cash	-0.126*	0.073*	-0.020*	0.035*	0.125*	1		
(7) equity	-0.170*	0.143*	0.037*	0.128*	0.224*	0.193*	1	
(8) %cash	0.227*	-0.233*	-0.063*	-0.227*	-0.249*	0.152*	-0.354*	1
(9) %equity	-0.167*	0.176*	0.041*	0.178*	0.203*	-0.015*	0.475*	-0.655*

Intentions & Outcomes

Table 12
Regression between Intentions and Outcomes.

	(1) E outcomes	(2) S outcomes	(3) E outcomes	(4) S outcomes
E intentions t-1	-0.010 (0.014)			
S intentions t-1		-0.000 (0.029)		
E intentions t-2			-0.016 (0.013)	
S intentions t-2				-0.008 (0.047)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Observations	133,089	133,089	115,565	115,565
R-squared	0.954	0.372	0.958	0.382

Main Regression

Table 5
Regression of relationship between Compensation and CSR performances.

<i>Panel A</i>	(1)	(2)	(3)	(4)	(5)
	E outcomes	E intentions	S outcomes	S intentions	ESG score
%cash t-1	0.513** (0.186)	-0.858*** (0.180)	-0.375** (0.155)	-0.513*** (0.123)	-0.529*** (0.157)
Total comp t-1	0.000 (0.000)	0.000 (0.000)	-0.000** (0.000)	-0.000 (0.000)	0.000 (0.000)
Age t-1	-0.006 (0.005)	-0.011** (0.005)	-0.004 (0.004)	-0.009*** (0.003)	-0.011** (0.005)
Gender t-1	-0.053 (0.158)	0.050 (0.165)	-0.132 (0.154)	0.128* (0.069)	0.334** (0.132)
CEO duality t-1	-0.198** (0.083)	0.111 (0.070)	-0.019 (0.050)	0.068 (0.042)	-0.189** (0.068)
Non exec t-1	-0.012** (0.004)	0.002 (0.003)	0.003 (0.002)	0.010*** (0.002)	0.024*** (0.004)
Board size t-1	-0.084*** (0.025)	0.035* (0.018)	-0.042*** (0.012)	0.029*** (0.010)	0.077*** (0.021)
Size t-1	-0.825*** (0.041)	0.380*** (0.035)	0.110*** (0.028)	0.243*** (0.021)	0.707*** (0.033)
BM t-1	-1.336*** (0.130)	0.618*** (0.129)	-0.749*** (0.086)	0.285*** (0.060)	0.490*** (0.087)
ROE t-1	-0.047 (0.162)	0.138 (0.156)	0.147 (0.099)	-0.088 (0.091)	0.133 (0.129)
ROA t-1	-0.001 (0.572)	-0.070 (0.603)	0.642* (0.353)	0.362 (0.266)	-0.910** (0.411)
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	133,089	133,089	133,089	133,089	133,018
R-squared	0.625	0.236	0.079	0.280	0.424

Main Regression

Table 5 continued

Regression of relationship between Compensation and CSR performances.

<i>Panel B</i>	(6)	(7)	(8)	(9)	(10)
	E outcomes	E intentions	S outcomes	S intentions	ESG score
%equity t-1	-0.222 (0.134)	0.389*** (0.118)	0.133 (0.098)	0.299*** (0.068)	0.441*** (0.122)
Company Controls	Yes	Yes	Yes	Yes	Yes
Board Controls	Yes	Yes	Yes	Yes	Yes
CEO Controls	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	133,089	133,089	133,089	133,089	133,018
R-squared	0.624	0.230	0.078	0.277	0.424

Main Regression

Table 7

Regression relationship Stocks and Options on CSR performances.

	(1) E outcomes	(2) E intentions	(3) S outcomes	(4) S intentions	(5) ESG score
%stock t-1	-0.388** (0.139)	0.511*** (0.130)	0.098 (0.108)	0.390*** (0.071)	0.564*** (0.127)
%option t-1	0.353* (0.192)	0.104 (0.169)	0.261* (0.121)	0.109 (0.101)	0.072 (0.151)
Company Controls	Yes	Yes	Yes	Yes	Yes
Board Controls	Yes	Yes	Yes	Yes	Yes
CEO Controls	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	131,681	131,681	131,681	131,681	131,610
R-squared	0.624	0.233	0.077	0.277	0.427

Industry

Table 6
Regression per industry of relationship between Cash Compensation and Environmental Outcomes.

	(1) Agri	(2) Mining	(3) Construction	(4) Manufact.	(5) Transport	(6) WholesaleTrade	(7) Retail Trade	(8) Finance	(9) Services	(10) Conglomerate
%cash t-1	6.896*** (0.000) <i>Omitted</i>	-0.341 (0.545)	1.156 (1.197)	0.637** (0.222)	1.837** (0.808)	-0.010 (0.621)	0.212 (0.370)	-0.220 (0.241)	-0.066 (0.398)	-0.519* (0.166)
Company Controls		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Board Controls		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CEO Controls		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	52	6,667	2,452	52,073	14,592	4,095	9,544	23,690	19,420	504
R-squared		0.599	0.412	0.476	0.449	0.500	0.715	0.619	0.498	0.843

Interaction Effect

Table 8
Interaction Effect with Compensation and Percentage of Non-Executives in the Board.

<i>Panel A</i>	E outcomes (1)	E intentions (2)	S outcomes (3)	S intentions (4)	ESG Score (5)
%cash t-1	0.133 (0.177)	-0.825*** (0.191)	-0.310* (0.174)	-0.374*** (0.121)	-0.387** (0.176)
Non exec D t-1	-0.397*** (0.105)	0.066 (0.091)	0.038 (0.074)	0.155** (0.058)	0.319*** (0.094)
Non exec D t-1 x %cash t-1	1.027*** (0.268)	-0.118 (0.278)	-0.209 (0.206)	-0.402* (0.200)	-0.480* (0.225)
R-squared	0.624	0.237	0.078	0.281	0.428
<i>Panel B</i>	(6)	(7)	(8)	(9)	(10)
%equity t-1	-0.042 (0.142)	0.448*** (0.141)	0.193 (0.131)	0.316*** (0.076)	0.369** (0.141)
Non exec D t-1	0.036 (0.122)	0.122 (0.109)	0.064 (0.118)	0.092 (0.071)	0.141 (0.093)
Non exec D t-1 x %equity t-1	-0.404** (0.146)	-0.155 (0.172)	-0.138 (0.158)	-0.050 (0.104)	0.136 (0.159)
R-squared	0.622	0.231	0.077	0.276	0.427
Controls	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes

Interaction Effect

Table 8 continued

	E outcomes (11)	E intentions (12)	S outcomes (13)	S intentions (14)	ESG Score (15)
<i>Panel C</i>					
%stock t-1	-0.364** (0.141)	0.574*** (0.154)	0.051 (0.111)	0.433*** (0.084)	0.532*** (0.137)
Non exec D t-1	-0.052 (0.105)	0.124 (0.105)	0.028 (0.085)	0.139* (0.066)	0.225*** (0.096)
Non exec D t-1 x %stock t-1	-0.300 (0.181)	-0.228 (0.211)	-0.097 (0.165)	-0.185 (0.121)	0.000 (0.165)
R-squared	0.627	0.233	0.077	0.279	0.427
<i>Panel D</i>	(16)	(17)	(18)	(19)	(20)
%option t-1	0.639*** (0.171)	-0.226 (0.164)	0.281* (0.137)	-0.188* (0.099)	-0.292 (0.178)
Non exec D t-1	-0.160 (0.104)	0.040 (0.072)	0.011 (0.088)	0.058 (0.045)	0.229** (0.076)
Non exec D t-1 x %option t-1	-0.114 (0.264)	0.064 (0.247)	-0.156 (0.249)	0.132 (0.126)	0.048 (0.284)
R-squared	0.626	0.228	0.078	0.272	0.423
Controls	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes

Conclusion

Conclusion

- Equity compensation is known for its long-term effect. This does not seem to hold for environmental outcomes.
- Could the potential opportunity costs for CEOs from being punished by the market motivate them against big investments in environmental outcome performance?
- CEOs that earn more of their compensation through their salary and bonus, might be more motivated to make substantial investments because the board, which is more informed than the general market, determines the value of their salary and bonus.
- By further minimizing the influence of the market through non-executive board members in combination with cash compensation, better environmental outcomes.

Thank You

Sustainable Compensation incentives.

Table 3
Sustainable incentives.

	(1) E outcomes	(2) E intentions	(3) S outcomes	(4) S intentions	(5) ESG score
CSR metrics included	-0.724*** (0.088)	0.210** (0.076)	-0.005 (0.066)	0.285*** (0.040)	0.815*** (0.087)
Company Controls	Yes	Yes	Yes	Yes	Yes
Board Controls	YES	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Observations	93,090	93,090	93,090	93,090	93,078
R-squared	0.642	0.207	0.072	0.259	0.449

[Back to Main](#)