Do ESG Scores Generate Differences in Risk-Adjusted Measures?

Group 28

Summary

Introduction

- Is ESG for philanthropists or return maximizers?

- Used various models

    Fama and French 3 Factor model adaptation

    Sharpe Ratio

    Treynor Ratio

    Volatility

Data Description

- Prof Kenneth R. French's Website

     FF3 Factors

- Thomson Reuters platform

     Stock Returns,

     ESG Scores

     Volatility, Bêta and the other control variables.

Data Description

- Rating is equal to **A** if score : **(75-100]**

- Rating is equal to **B** if score : **(50-75]**

- Rating is equal to **C** if score : **(25-50]**

- Rating is equal to **D** if score : **[0-25]**

Data Description

REFINITIV ESG COMPANY REPORT

L3harris Technologies Inc (LHX.N)

Document Date: 2020-12-11

REFINITIV®

DATA IS JUST
THE BEGINNING®

COMPANY OVERVIEW

Market Cap. (Mil USD)	**$39,396**
Revenue (Mil USD)	**$9,263**
No. of Employees	**50,000**
D&I Index Ranking	**150 / 3183**
TRBC Ind. Group	**Aerospace & Defense**
Country	**United States of America**
Fiscal Yr. End	**2020-01-03**
ESG Reporting Scope	**55.72%**

| C+ ESG Score	A+ ESG Controversies Score	C+ ESG Combined Score
C+ Environmental Pillar Score	B- Social Pillar Score	C+ Governance Pillar Score

ESG SUMMARY

L3harris Technologies Inc is a(n) Aerospace & Defense company headquartered in the United States of America. For the fiscal year ended in January 2020, LHX.N received an ESG score of 48.81 (Grade: C+).

Over the last 5 years, the company has an average ESG score of 48.12, and a median ESG score of 47.46. Refinitiv ESG score is calculated as a sum of weighted individual pillar scores. For LHX.N, Environmental, Social, and Governance pillars are weighted 23.74%, 43.88%, and 32.37% respectively in ESG score weighting, consistent with companies within the Aerospace & Defense industry groups.

Data Description

Refinitiv® ESG Scores
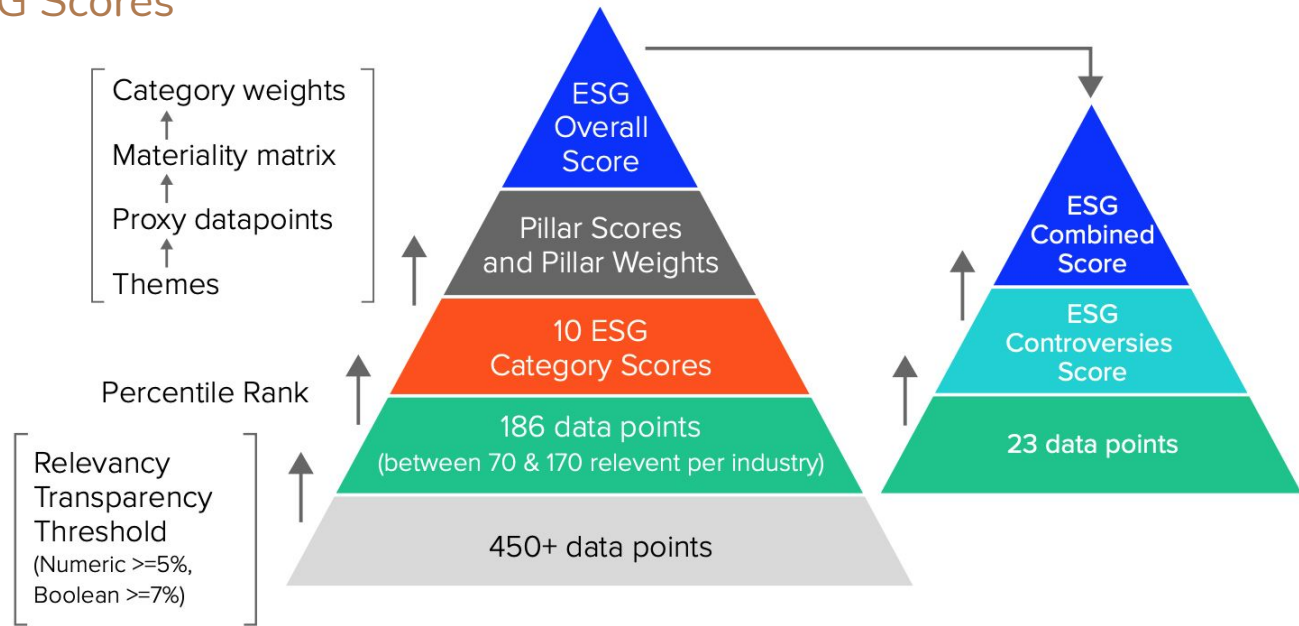
Methodology

Fama and French 3FF :

$$R_{it} - R_{ft} = \alpha_{it} + \beta_1 \, MktRf_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 \, RatingA_{it} + \beta_5 RatingB_{it} + \beta_6 RatingC_{it} \ (1)$$

- 3FF factors : Market premium, SMB, HML
- 3 dummy variables to modelize the different groups in terms of ESG (D-rating is the reference group)
- 2 separate regressions using :   (1) the ESG rating

                                                 (2) the ESG-combined rating

- Goal : compare the difference in alphas within the different groups

Fama & French 3 Factors

	ESG Excess Return	ESG Combined Excess Return	E Excess Return	S Excess Return	G Excess Return
Market-Rf	0.943***	0.942***	0.943***	0.937***	0.941***
	(0.0515)	(0.0514)	(0.0515)	(0.0515)	(0.0513)
SMB	0.823***	0.823***	0.795***	0.847***	0.823***
	(0.263)	(0.262)	(0.263)	(0.263)	(0.263)
HML	0.107	0.107	0.114	0.102	0.106
	(0.0813)	(0.0812)	(0.0814)	(0.0813)	(0.0814)
Dummy Cat. A	-0.0164	-0.000292	-0.000193	-0.00911	-0.0365**
	(0.0160)	(0.0182)	(0.0116)	(0.0141)	(0.0143)
Dummy Cat. B	-0.0251**	-0.0291**	-0.0177*	-0.0190	-0.00896
	(0.0117)	(0.0118)	(0.0101)	(0.0125)	(0.0124)
Dummy Cat. C	-0.0208*	-0.0190*	-0.0206*	-0.0257**	-0.00432
	(0.0114)	(0.0112)	(0.0109)	(0.0120)	(0.0134)
Constant (Alpha)	0.0435***	0.0430***	0.0329***	0.0445***	0.0373***
	(0.0123)	(0.0123)	(0.00946)	(0.0130)	(0.0134)
N	5668	5668	5668	5668	5668
R^2	0.200	0.200	0.200	0.200	0.200

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Sharpe Ratio, Treynor Ratio & Volatility

- The three regression models:

$$SR_{it} = \alpha_{it} + \beta_1 RatingA_{it} + \beta_2 RatingB_{it} + \beta_3 RatingC_{it} + \beta_4 MarketCap_{it} + \beta_5 DebtPerEquity_{it}$$

$$+ \beta_6 RevenuePerShare_{it} + \beta_7 CurrentRatio_{it} \quad (2)$$

$$TR_{it} = \alpha_{it} + \beta_1 RatingA_{it} + \beta_2 RatingB_{it} + \beta_3 RatingC_{it} + \beta_4 MarketCap_{it} + \beta_5 DebtPerEquity_{it}$$

$$+ \beta_6 RevenuePerShare_{it} + \beta_7 CurrentRatio_{it} \quad (3)$$

$$STD_{it} = \alpha_{it} + \eta_t + \beta_1 RatingA_{it} + \beta_2 RatingB_{it} + \beta_3 RatingC_{it} + \beta_4 MarketCap_{it} + \beta_5 DebtPerEquity_{it}$$

$$+ \beta_6 RevenuePerShare_{it} + \beta_7 CurrentRatio_{it} \quad (4)$$

Sharpe Ratio, Treynor Ratio & Volatility

	ESG Sharpe Ratio	ESG Combined Sharpe Ratio	ESG Treynor Ratio	ESG Combined Treynor Ratio	ESG Volatility	ESG Combined Volatility
Dummy Cat. A	0.0913	0.191**	-0.00976	0.0155	-0.0703***	-0.0804***
	(0.0847)	(0.0968)	(0.0276)	(0.0313)	(0.0115)	(0.0110)
Dummy Cat. B	0.164***	0.163***	0.0300	0.0267	-0.0501***	-0.0519***
	(0.0538)	(0.0539)	(0.0190)	(0.0188)	(0.00819)	(0.00810)
Dummy Cat. C	0.126***	0.112**	0.0141	0.0125	-0.0229***	-0.0275***
	(0.0485)	(0.0477)	(0.0175)	(0.0173)	(0.00660)	(0.00676)
Market Cap.	0.00000265***	0.00000261***	0.000000534***	0.000000515***	0.000000393***	0.000000437***
	(0.000000378)	(0.000000354)	(9.88e-08)	(9.31e-08)	(0.000000133)	(0.000000137)
Debt per Equity	-0.00566*	-0.00560*	-0.00184	-0.00184	0.000976*	0.000982*
	(0.00334)	(0.00334)	(0.00122)	(0.00122)	(0.000562)	(0.000564)
Revenue per Share	-0.000754***	-0.000760***	-0.000295***	-0.000297***	0.0000681	0.0000644
	(0.000211)	(0.000212)	(0.0000644)	(0.0000647)	(0.0000615)	(0.0000620)
Current Ratio	-0.00429	-0.00303	-0.00571	-0.00550	0.00641***	0.00650***
	(0.0122)	(0.0122)	(0.00419)	(0.00419)	(0.00245)	(0.00244)
F.E. Year 2016					0.0498***	0.0505***
					(0.00499)	(0.00502)
F.E. Year 2017					-0.0285***	-0.0278***
					(0.00481)	(0.00482)
F.E. Year 2018					0.0188***	0.0197***
					(0.00494)	(0.00493)
F.E. Year 2019					0.0888***	0.0886***
					(0.00561)	(0.00561)
Constant	0.319***	0.319***	0.132***	0.132***	0.307***	0.309***
	(0.0513)	(0.0511)	(0.0188)	(0.0187)	(0.00926)	(0.00932)
N	3911	3911	3791	3791	3962	3962
R^2	0.023	0.023	0.012	0.011		

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Conclusion

- Idiosyncratic risk => Diversifiable

- Sovereign wealth funds care

- Preparation for new laws

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