

Environmental, Social, and Governance (ESG) Profiles, Stock Returns, and Financial Policy: Australian Evidence*

MANAPON LIMKRIANGKRAI[†], SZEKEE KOH[‡] AND ROBERT B. DURAND[§]

[†]Department of Banking and Finance, Monash Business School, Monash University, Melbourne, VIC, Australia,

[‡]Singapore Institute of Technology, Singapore and

[§]Department of Finance and Banking, Curtin University, Perth, WA, Australia

ABSTRACT

This study investigates the independent effects of environmental (E), social (S), corporate governance (G), and the composite ESG ratings on stock returns and corporate financing decisions of the largest stocks in the Australian equity market. Firms with high composite ESG ratings tend to increase their leverage. For the individual ratings, we find different inferences: firms with low E and high G ratings tend to raise less debt. Firms with high G ratings hold less cash, while those with low G ratings have lower dividend payouts. S ratings have no impact on corporate financing decisions. There appears to be no significant difference in risk-adjusted returns for portfolios based on ESG ratings, effectively indicating that there is no cost of ESG investment.

JEL Codes: G34; D71

I. INTRODUCTION

There is an increasing research interest in the rationale behind environmental, social, and governance (ESG) activities undertaken by firms. Environmental (E) activities involve a firm's efforts to make a positive impact on the environment, through compliance with existing regulations and recognition of future impacts. Social (S) activities refer to equitable treatment of close stakeholders and protection of the social ecosystem in which the firm operates. Governance (G) incorporates firm ethics and integrity, including principles such as transparency and fair dealing, and effective functioning of the board of directors. A firm's ESG activities are important because both institutional and individual investors now recognize that ESG represents opportunities and risks facing the firm. Investors use nonfinancial data such as ESG factors to decide whether to invest in a firm (Coleman et al. 2010). In

* The asset-pricing factors were kindly made available by Philip Gray. We also thank the anonymous referee and Philip Gray for their valuable comments.

the face of persistent concerns from a variety of stakeholders, managers have become sensitized to the use of resources and to externalities that affect the physical and social environment in which the firm operates (Ho and Taylor 2007). As such, managers rationally adopt nonfinancial key performance indicators; in particular, managers report firm ESG activities to the financial markets.

In studying the relationship between firm behavior and ESG, prior research has predominantly utilized a single ESG rating that consolidates a firm's performance on the three individual ESG components.¹ This allows a broad-brush analysis of how engaging in ESG activities is beneficial to firms. However, it is plausible that a given firm engages in individual E, S, and G activities to vastly differing degrees. For example, a firm may strongly commit to environmentally friendly activities but may be less enthusiastic about the social and/or governance aspects of ESG. As such, a more fine-grained analysis of ratings may be advantageous to better understand the impact of ESG activities on a firm's (financial market) performance as well as its corporate financing decisions.

While there have been a number of ESG studies in the US and other international markets, Australian ESG research is in its infancy. More importantly, our study benefits from access to unique firm-level ratings for the individual E, S, and G components of the composite ESG score. In addition to being among the first Australian ESG studies, the present paper also makes an important contribution to this emerging literature by investigating how the individual components of ESG manifest in both firm performance and corporate financing decisions. Specifically, we consider whether stock returns (raw and risk-adjusted) and financing decisions (market leverage, book leverage, cash balances, and dividend yield) systematically differ for firms partitioned into low and high groupings for each of the individual E, S, and G components, as well as for the composite ESG score.

II. DATA AND METHODOLOGY

This study utilizes ESG data provided by Regnan, an Australia-based company that conducts in-depth research on ESG issues for the top 200 companies by market capitalization listed on the Australian Securities Exchange.² The Environmental (E) score captures issues related to greenhouse gases, water, and other environmental management. The Social (S) score focuses on issues related to ethical conduct, human capital management, and workplace safety. Finally, the Corporate Governance (G) score captures issues related to the corporate board, audit, remuneration, and accounting factors. *"Regnan's ESG data ("ValDA")*

- 1 For example, Chow *et al.* (2014) document positive and statistically significant long-run abnormal returns for firms regarded as leaders in ESG activity. Koh *et al.* (2015) find evidence consistent with the notion that ESG creates shareholder value.
- 2 The Australian market has a relatively large number of listed securities; however, the majority of them are very small and highly illiquid stocks, with the top 200 firms accounting for over 70% of the entire market capitalization. Therefore, the top 200 firms (i.e., the constituents of the S&P/ASX200) are generally taken to be an accurate representation of the Australian market.

provides scores at differing levels across environmental, social and corporate governance factors, and incorporates both top down (materiality) as well as bottom up (exposures, and controls) considerations" (Regnan 2010, p. 1).

For each stock, Regnan provides a rating for each ESG component, with 0 (5) being the lowest (highest) possible score. A score of 0 denotes that the stock exhibits ESG risk characteristics that are clearly value diminishing (or that it exhibits no elements of best governance practices). In contrast, a score of 5 denotes that the stock provides a defensible source of value (or that it exhibits all, or nearly all, of the elements of best governance practices). Of the top 200 listed companies, Regnan does not rate stocks where there is no evidence of material upside/downside risk. Regnan's data are available from 2009; accordingly, our study covers the period 2009–2014. Firm financial data are sourced from Morningstar and share price data are sourced from the SIRCA Share Price and Price Relative (SPPR) database. We exclude financial firms, because their capital structures are likely to significantly differ from the capital structures of other firms in our sample. Firms with missing accounting data are also excluded. Table 1 presents the sample. Panel A shows that there are very few firms that receive either the highest or the lowest individual ratings of 5 and 1 (or 0) in each group, and that most firms receive the rating of 3. There are no firms with a score of 0 in the E and S ratings. Panel B shows that a large proportion of firms are concentrated in the materials and industrials sectors.

Table 1 Sample summary

Panel A: Number of observations	E	S	G
Total security rating observations	444	444	474
Less:			
· Financial firms	94	85	78
· Firms with missing accounting data	21	20	24
Final security rating observations	329	339	372
Rating			
0	N/A	N/A	7
1	15	17	26
2	93	134	87
3	154	158	108
4	55	28	129
5	12	2	15
Panel B: Industry breakdown			
Consumers discretionary	12.4%	14.9%	12.8%
Consumers staple	2.1%	2.6%	3.2%
Energy	13.0%	12.6%	11.5%
Health care	4.3%	5.6%	5.6%
Industrials	24.9%	21.3%	23.0%
Information technology	0.9%	1.2%	1.1%
Materials	32.1%	31.6%	32.6%
Telecommunications	3.9%	4.4%	5.1%
Utilities	6.4%	5.8%	5.1%

Table 1 shows the breakdown of sample observations across the Environmental (E), Social (S) and Corporate Governance (G) groups. The data spans from the period 2009 to 2014.

Our first objective is to examine whether there is a significant difference in returns between firms with high and low ESG scores. For each ESG component, we create a high-score portfolio by grouping stocks with the highest Regnan ratings, 4 and 5, and a low-score portfolio by grouping stocks with the lowest ratings, 1 and 2, for the E and S group ratings (and 0 and 1 for the G group rating).³ We also create a composite ESG high-score portfolio, which contains the stocks with the highest ratings in at least two individual groups, and a composite ESG low-score portfolio, which contains the stocks with the lowest ratings in at least two individual groups.⁴ Monthly returns to equal-weighted portfolios are calculated over the subsequent 12-month period, before the portfolio assignment procedure is repeated when the following year's ESG scores become available.⁵

We then provide a risk adjustment of the hedge (high–low) portfolio returns based on the Fama–French–Carhart (FFC) four-factor model (Fama and French 1993; Carhart 1997) as follows:

$$R_{HS,t} - R_{LS,t} = \alpha_p + \beta_p(R_{m,t} - R_{f,t}) + \delta_pSMB_t + \lambda_pHML_t + \gamma_pUMD_t + j_pJAN_t + k_pJULY_t + \varepsilon_{p,t} \quad (1)$$

$R_{HS} - R_{LS}$ is the return of the high-score portfolio minus the return of the low-score portfolio. $R_m - R_f$ is the market risk premium. The *SMB* (Small Minus Big) factor is constructed as a mimicking portfolio with the return premium of the smallest stocks over the largest stocks. The *HML* (High Minus Low) factor is constructed as a mimicking portfolio with the return premium of stocks with the highest book-to-market ratios (i.e., value stocks) over stocks with the lowest book-to-market ratios (i.e., growth stocks). The *UMD* (Up Minus Down) factor is constructed as a mimicking portfolio with the return premium of stocks with the highest recent past returns (i.e., winner stocks) over stocks with the lowest recent past returns (i.e., loser stocks). Further, given the strong evidence of seasonality in Australia, we include both January (*JAN*) and July (*JULY*) dummies in the models.⁶

Our second objective is to examine how different ESG ratings impact firms' corporate financial decisions. Heinkel *et al.* (2001) suggest that, in an equilibrium model, there coexist two types of investor ("green" and "nongreen" investors)

- 3 We also create alternative high and low score portfolios by using only the highest score (5) and lowest score (0 or 1). However, in the S and G groups over the sample period, there are very few firms in the highest and lowest ratings; this does not provide a sufficient number of stocks in the high score portfolios.
- 4 We apply alternative composite ESG high (low) score portfolios using stocks with the highest (lowest) ratings in all three areas. However, there are very few of these stocks, and again this alternative grouping does not provide a sufficient number of stocks in the high and low score portfolios.
- 5 We utilize the March ratings each year; hence, the holding period is from the current year's April to the following year's March.
- 6 For detailed factor construction methodology and recent empirical seasonality evidence, please refer to Zhong *et al.* (2014).

Table 2 Portfolio average return analysis

Panel A: Average monthly return			
	E	S	G
High	0.0110	0.0101	0.0100
Low	-0.0022	0.0040	0.0187
Hedge (high-low)	0.0132	0.0062	-0.0087
Paired <i>t</i> -test (<i>p</i> -value)	[0.0333] **	[0.2220]	[0.0717] *
Panel B: Risk-adjusted hedge return			
α_p	0.0084 [0.1988]	0.0021 [0.7143]	-0.0089 [0.1321]
$R_{m,t} - R_{f,t}$	0.0267 [0.8700]	0.0731 [0.6202]	0.0454 [0.7589]
SMB _{<i>t</i>}	-0.4038 [0.0193] **	-0.3602 [0.0209] **	-0.1650 [0.2821] ***
HML _{<i>t</i>}	-0.0304 [0.9019]	-0.1851 [0.4071]	0.2093 [0.3506]
UMD _{<i>t</i>}	0.4995 [0.0070] ***	0.2058 [0.2060]	-0.0287 [0.8593]
JAN _{<i>t</i>}	0.0238 [0.2406]	0.0193 [0.2938]	0.0056 [0.7585]
JULY _{<i>t</i>}	-0.0078 [0.7082]	0.0131 [0.4902]	-0.0150 [0.4311]
			0.0066 [0.3290]
			0.1788 [0.2915]
			-0.5980 [0.0011] ***
			0.3560 [0.1661]
			0.4513 [0.0176] **
			0.0238 [0.2573]
			-0.0155 [0.4756]

Table 2 shows the average returns between high-score, low-score, and hedge portfolios and the risk-adjusted hedge returns obtained using the Fama-French-Carhart (FFC) model for the Environmental (E), Social (S) and Corporate Governance (G) factors. *Rm-Rf*, *SMB*, *HML* and *UMD* are the FFC factors: the market-premium, size, value-growth and momentum, respectively. JAN and JULY are dummy variables taking the value 1 if the return is observed in January or July respectively (and zero otherwise). The data spans the period from 2009 to 2014. ***, **, and * denote statistical significance at the 1%, 5% and 10% level respectively.

Table 3 Corporate financing decisions of Environmental (E), Social (S), Governance (G), and composite ESG groups

	E			
	MLEV	BLEV	CASH	DIV
Constant	0.3590 [0.0000]***	0.0858 [0.5095]	0.7708 [0.0000]***	0.0494 [0.0537]*
HighScoreD	0.0016 [0.9292]	0.0887 [0.1295]	−0.0340 [0.2620]	0.0006 [0.9297]
LowScoreD	0.0045 [0.7526]	−0.0541 [0.0114]**	0.0344 [0.1421]	0.0080 [0.1178]
TOBINSQ	−0.0613 [0.0000]***	−0.0056 [0.4414]	0.0315 [0.0015]***	−0.0059 [0.0064]***
TANG	0.1371 [0.0000]***	0.2602 [0.0000]***	−0.1127 [0.0212]	−0.0231 [0.0304]**
Profit	−0.3873 [0.0000]***	−0.4711 [0.0003]***	0.0310 [0.7622]	0.0527 [0.0192]**
Size	0.0083 [0.0053]***	0.0163 [0.0011]***	−0.0346 [0.0000]***	0.0020 [0.0722]*
YearD	Yes	Yes	Yes	Yes
IndustryD	Yes	Yes	Yes	Yes
Adj R ²	0.4673	0.1645	0.1462	0.1976
F-Stats	34.84***	8.59***	7.56***	10.50***

Table 3 presents the corporate financing decisions for firms rated with a score in the Environmental (E), Social (S), Governance (G), and composite ESG group. *HighScoreD* is a dummy variable equal to one if a stock receives the highest ratings in at least two of the individual ratings, and zero otherwise. *LowScoreD* is a dummy variable equals to one if a stock receives the lowest ratings in at least two of the individual ratings, and zero otherwise. *TOBQ* (Tobin's Q) is the market value of equity plus assets minus book value of equity over assets. *TANG* is firm tangibility (net plant, property and equipment divided by total assets). *PROFIT* is earnings before interest, taxes, and depreciation divided by total assets. *SIZE* is the natural log of net sales. The standard errors are in brackets and are adjusted for heteroskedasticity (White 1980). The data spans the period from 2009 to 2014. MLEV, market leverage; BLEV, dividend yield; CASH, cash balances; DIV, dividend yield. *** denotes statistical significance at the 1% level. ** denotes statistical significance at the 5% level. * denotes statistical significance at the 10% level.

and three types of firm (“nonpolluting,” “neutral,” and “polluting” firms). The boycott of polluting firms' securities by green investors provides limited opportunities for risk sharing. As a result, these securities have lower prices and higher cost of capital. This implies that firm financial policy may be affected by firm ESG activities. As such, in the analysis that follows, we shift our focus to the impact of ESG ratings on firm decisions on financial policy. To determine the impact of ESG ratings on corporate financing decisions, we utilize the following cross-sectional regression model (with the White (1980) adjusted standard errors):

$$\begin{aligned}
 \text{CorporateDecision}_{it} &= \alpha_p + \beta_{HSD} \text{HighScoreD} + \beta_{LSD} \text{LowScoreD} + \beta_1 \text{TOBQ}_t + \beta_2 \text{TANG}_t \\
 &+ \beta_3 \text{PROFIT}_t + \beta_4 \text{SIZE}_t + \beta_{YD} \text{Year} + \beta_{ID} \text{Industry} + \varepsilon_{p,t}
 \end{aligned}
 \tag{2}$$

This model is first applied to the E, S, and G samples separately to assess the independent effect of each rating on a firm's corporate financing decisions. In addition, the model is applied to the composite ESG sample. We utilize four proxies for these financing decisions: market leverage (*MLEV*: total debt as a fraction of the sum of total debt and the firm's market capitalization), book leverage (*BLEV*: total debt as a fraction of the sum of total debt and book equity), cash balances (*CASH*), and dividend yield (*DIV*).

Table 3 (continued)

	MLEV	BLEV	S	CASH	DIV
Constant	0.3688 [0.0000]***	0.0740 [0.5353]**		0.8804 [0.0000]***	0.0607 [0.0090]
HighScoreD	0.0046 [0.8104]	0.0442 [0.2227]		−0.0443 [0.2983]	0.0023 [0.7435]
LowScoreD	0.0058 [0.6228]	0.0320 [0.1455]		−0.0061 [0.8116]	0.0002 [0.9650]
TOBINSQ	−0.0518 [0.0000]***	−0.0098 [0.2683]		0.0330 [0.0014]***	−0.0064 [0.0002]***
TANG	0.1322 [0.0000]***	0.2175 [0.0000]***		−0.1404 [0.0143]**	−0.0251 [0.0082]***
Profit	−0.2903 [0.0001]***	−0.3057 [0.0016]***		−0.1010 [0.3702]	0.0679 [0.0003]***
Size	0.0072 [0.0093]***	0.0177 [0.0006]***		−0.0385 [0.0000]***	0.0016 [0.1206]
YearD	Yes	Yes		Yes	Yes
IndustryD	Yes	Yes		Yes	Yes
Adj R ²	0.4543	0.1576		0.1203	0.1958
F-Stats	38.82***	9.50***		7.17***	12.06***

Consistent with the groupings of high- and low-score portfolios in the return analysis, we create dummy variables to model the difference between firms receiving the highest and lowest ratings. We create a dummy variable, *HighScoreD*, which takes the value 1 if a stock receives the highest ratings of 4 and 5, and zero otherwise, and *LowScoreD*, which takes the value 1 if a stock receives the lowest ratings of 1 and 2 for the E and S groups, and 0 and 1 for the G group, and zero otherwise. For the ESG sample, we create a dummy variable, *HighScoreD*, which takes the value 1 if a stock receives the highest rating in at least two of the individual ratings, and zero otherwise, and *LowScoreD*, which takes the value 1 if a stock receives the lowest ratings in at least two of the individual ratings, and zero otherwise. The model also employs common variables as proxies for capital structure (Titman and Wessels 1988; Baker and Wurgler 2002), including the following variables: Tobin's Q (*TOBQ*: market value of equity plus assets minus book value of equity over assets). Firm tangibility (*TANG*: net plant, property, and equipment divided by total assets). Profit is earnings before interest, taxes, and depreciation divided by total assets. Sales is the natural log of net sales, which is used as a proxy for firm size. We also include year and industry-fixed effects in our model.

III. EMPIRICAL RESULTS

Table 2, panel A, reports average monthly returns for the high-score, low-score, and hedge (high–low) portfolios, as well as the *p*-values of the paired *t*-tests. Based on raw returns, there are differences between the high- and low-score portfolios. Portfolios with high E and S ratings generate higher average monthly returns of approximately 1.32% and 0.62%, respectively. The portfolio with high G ratings appears to have lower average returns of approximately 0.87% per month. Paired *t*-tests show that the difference is significant at the 5% (10%) level for the E (G) group, while the difference for the S group is statistically insignificant.

Once returns are adjusted for the FFC risk factors, the hedge portfolios do not generate abnormal returns in all three individual rating groups and the

Table 3 (continued)

	MLEV	BLEV	G	CASH	DIV
Constant	0.2929 [0.0000]***	0.0165 [0.8950]		0.8125 [0.0000]***	0.0442 [0.0265]**
HighScoreD	−0.0219 [0.0530]*	−0.0067 [0.7540]		−0.0342 [0.0863]*	0.0002 [0.9480]
LowScoreD	−0.0120 [0.5860]	0.0440 [0.2962]		−0.0021 [0.9571]	−0.0161 [0.0165]**
TOBINSQ	−0.0469 [0.0000]***	−0.0094 [0.2558]		0.0289 [0.0002]***	−0.0054 [0.0000]***
TANG	0.1326 [0.0000]***	0.2174 [0.0000]***		−0.1319 [0.0039]***	−0.0226 [0.0039]***
Profit	−0.2887 [0.0000]***	−0.2878 [0.0020]***		0.0136 [0.8746]	0.0670 [0.0000]***
Size	0.0097 [0.0009]***	0.0200 [0.0003]***		−0.0348 [0.0000]***	0.0012 [0.1935]
YearD	Yes	Yes		Yes	Yes
IndustryD	Yes	Yes		Yes	Yes
Adj R ²	0.4303	0.1512		0.1611	0.2024
F-Stats	33.84***	8.75***		9.30***	12.03***

composite ESG group, as indicated by the insignificant alphas in Table 2, panel B.⁷ This is in fact beneficial to both institutional and individual investors. It might be expected that after risk adjustment, companies that engage actively in ESG are likely to underperform because of reduced assets available for investment. Our analysis effectively shows that there is *no* risk-adjusted cost of ESG investment.⁸

The E, S, G, and composite ESG regression results of equation (2) are reported in Table 3. In general, different inferences can be derived from each E, S, G, and ESG rating analysis. Table 3 shows that high-rated ESG firms tend to have higher leverage (as measured by *BLEV*) than the other firms; the coefficient of 0.0703 is statistically significant at the 1% level. Derwall and Verwijmeren (2007) posit that the impact on cost of capital of ESG depends on the firm's choice among ESG attributes. Hence, our finding of a positive coefficient seems to suggest that high-rated ESG firms take advantage of a possibly lower cost of debt to raise external funds.

The results for individual E, S, and G ratings show that low-rated E firms appear to have lower leverage (as measured by *BLEV*): the *LowScoreD* is −0.0541 and statistically significant at the 5% level. Hong and Kacperczyk (2009) argue that debt markets are less transparent than equity markets, so social norms do not matter in these markets, and it should be easier for low-rated firms to raise funds in the debt market than in the equity market. However, our finding of a

7 Similarly, Humphrey and Lee (2011) examine and compare the performances of the socially responsible investment (SRI) and conventional funds and find weak evidence that funds with screenings have superior risk-adjusted returns.

8 For the E group, it appears that the high-score E portfolio comprises stocks with high returns in the past (i.e., winners), as indicated by the positive and significant momentum (*UMD*) factor. In addition, the January or July dummies are not statistically significant, indicating that there is no apparent seasonality in returns for the E, S, G, and ESG hedge portfolios. The insignificance of the coefficients for the factors should not be of concern. The coefficients represent the risk exposures for portfolios that are long in high-score stocks and short in low-score stocks. The insignificance of the coefficients indicates that the difference in the long and short portfolios' exposure to the source of systematic risk is statistically insignificant.

Table 3 (continued)

	ESG			
	MLEV	BLEV	CASH	DIV
Constant	0.0641 [0.1001]	−0.0658 [0.2427]	−5.3336 [0.2616]	0.0222 [0.0801]*
HighScoreD	−0.0049 [0.7655]	0.0703 [0.0029]***	−0.4295 [0.8282]	−0.0026 [0.6188]
LowScoreD	0.0194 [0.1496]	−0.0022 [0.9088]	−1.0834 [0.5087]	0.0022 [0.6145]
TOBINSQ	−0.0208 [0.0000]***	−0.0068 [0.0184]**	3.4992 [0.0000]***	−0.0027 [0.0000]***
TANG	0.0808 [0.0000]***	0.1767 [0.0000]***	0.7096 [0.7416]	−0.0249 [0.0000]***
Profit	−0.2161 [0.0000]***	−0.1783 [0.0000]***	−17.5673 [0.0000]***	0.0320 [0.0000]***
Size	0.0203 [0.0000]***	0.0247 [0.0000]***	0.2286 [0.2613]	0.0029 [0.0000]***
YearD	Yes	Yes	Yes	Yes
IndustryD	Yes	Yes	Yes	Yes
Adj R ²	0.3764	0.2230	0.0993	0.1951
F-Stats	58.75***	28.47***	11.44***	24.19***

negative coefficient for the *LowScoreD* seems to suggest that the cost of debt deters low-rated E firms from raising debt. The majority of global banks, including the four largest banks in Australia, are signatories to the equity principles, a set of voluntary guidelines to assess and manage environmental and social risks in project financing. This makes it more difficult for low-rated E firms to borrow funds, as lenders enforce minimum environmental and social standards on projects, irrespective of the legislative framework (Hansen 2006).

For the S ratings, we find no systematic differences in corporate financing decisions among the high- and low-rated S firms. S-related activity appears to have no impact on how firms select their financial policies. For the G ratings, we find that high-rated G firms have less debt (as measured by *MLEV*) and cash than other firms. The coefficients of −0.0219 and −0.0342 are both statistically significant at the 10% level. If low-rated firms have restricted access to external capital, then there is a need to safeguard against future investment needs, and corporate liquidity becomes a key issue in corporate policy. In our case, high-rated firms are less likely to maintain financial slack (hence less cash), as it is easier for them to raise external funds if required (Verwijmeren and Derwall 2010). The finding of lower leverage for high-rated G firms is somewhat surprising. It might be the case that good corporate governance practices may lower the cost of equity (Brown and Caylor 2006; Byun et al. 2008). As such, high-rated G firms may choose to issue equity instead of debt. We also find that low-rated G firms tend not to pay out as much in dividends compared with other firms: the coefficient is −0.0161 and is statistically significant at the 1% level. Such firms may retain their cash reserves for future business opportunities or as working capital, because it is more difficult for them to raise funds through the debt market.

IV. CONCLUSION

This paper examines the independent effects of E, S, and G ratings, as well as the effect of the composite ESG rating on the largest Australian firms' stock returns

and their corporate financing decisions for the period 2009 to 2014. We demonstrate that different inferences may be drawn from individual E, S, and G ratings, as well as the composite ESG ratings. It appears that there are differences in average returns for high- and low-score portfolios in all groups, and that the differences are statistically significant for the E and G groups. After adjusting for risk factors for the hedge portfolio returns based on the FFC model, there appear to be no abnormal returns in all the E, S, G, and composite ESG groups, effectively indicating that there is no risk-adjusted cost of ESG investment to both institutional and individual investors. Second, high-rated and low-rated firms appear to behave differently in their corporate financing decisions. High-rated ESG firms tend to have higher debt than other firms. However, once we examine the individual ratings, low-rated E firms and high-rated G firms tend to have less debt. Firms with a high G rating also hold less cash, while firms with a low G rating pay lower dividends. To the best of our knowledge, this paper is among the first to generate evidence on the impact of E, S, G, and composite ESG ratings on returns and firm corporate financing decisions in the Australian equity market.

Manapon Limkriangkrai
Department of Banking and Finance
Monash Business School
Monash University
Melbourne, VIC
Australia
manapon.limkriangkrai@monash.edu

REFERENCES

- Baker, M., and J. Wurgler (2002), 'Market Timing and Corporate Structure', *Journal of Finance*, 57, 1–32.
- Brown, L., and M. Caylor (2006), 'Corporate Governance and Firm Valuation', *Journal of Accounting and Public Policy*, 25, 409–34.
- Byun, H., S. Kwak, and L. Hwang (2008), 'The Implied Cost of Equity Capital and Corporate Governance Practices', *Asia-Pacific Journal of Financial Studies*, 37, 139–84.
- Carhart, M. (1997), 'On Persistence in Mutual Fund Performance', *Journal of Finance*, 52, 57–82.
- Chow, G., R. Durand, and S. Koh (2014), 'Are Ethical Investments Good?', *Australian Journal of Management*, 39, 645–65.
- Coleman, L., K. Maheswaran, and S. Pinder (2010), 'Narratives in Managers' Corporate Finance Decisions', *Accounting & Finance*, 50, 605–33.
- Derwall, J. and Verwijmeren, P. (2007), Corporate Governance and the Cost of Equity Capital: Evidence from GMI's Governance Rating. ECCE Research Note 06–01, European Centre for Corporate Engagement, version 2.0
- Fama, E., and K. French (1993), 'Common Risk Factors in the Returns on Stocks and Bonds', *Journal of Financial Economics*, 33, 3–56.

- Hansen, R. (2006), 'The Impact of the Equator Principles on Lender Liability: Risks of Responsible Lending', [Retrieved 27 March 2016.] Available from URL: <http://ssrn.com/abstract=948228>
- Heinkel, R., A. Kraus, and J. Zechner (2001), 'The Effect of Green Investment on Corporate Behavior', *The Journal of Financial and Quantitative Analysis*, 36, 431–49.
- Ho, L., and M. Taylor (2007), 'An Empirical Analysis of Triple Bottom-Line Reporting and Its Determinants: Evidence from the United States and Japan', *Journal of International Financial Management & Accounting*, 18, 123–50.
- Hong, H., and M. Kacperczyk (2009), 'The Price of Sin: The Effects of Social Norms on Markets', *Journal of Financial Economics*, 93, 15–36.
- Humphrey, J., and D. Lee (2011), 'Australian Socially Responsible Funds: Performance, Risk and Screening Intensity', *Journal of Business Ethics*, 102, 519–35.
- Koh, S., R. Durand, and M. Limkriangkrai (2015), 'The Value of Saints and the Price of Sin', *Pacific-Basin Finance Journal*, 35, 56–72.
- Regnan (2010), *Regnan's ValDA Score Explanations*. Australia: Regnan.
- Titman, S., and R. Wessels (1988), 'The Determinants of Capital Structure Choice', *Journal of Finance*, 43, 1–19.
- Verwijmeren, P., and J. Derwall (2010), 'Employee Well-Being, Firm Leverage, and Bankruptcy Risk', *Journal of Banking & Finance*, 34, 956–64.
- White, H. (1980), 'A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity', *Econometrica*, 48, 817–38.
- Zhong, A., M. Limkriangkrai, and P. Gray (2014), 'Anomalies, Risk Adjustment and Seasonality: Australian Evidence', *International Review of Financial Analysis*, 35, 207–18.