

# Does it pay to be responsible? Evidence on corporate social responsibility and the investment performance of Australian REITs

Westermann, Steffen; Niblock, Scott J; Kortt, Michael A https://researchportal.scu.edu.au/esploro/outputs/journalArticle/Does-it-pay-to-be-responsible/991012831299302368/filesAndLinks?index=0

Westermann, S., Niblock, S. J., & Kortt, M. A. (2019). Does it pay to be responsible? Evidence on corporate social responsibility and the investment performance of Australian REITs. Asia-Pacific Journal of Accounting & Economics. https://doi.org/10.1080/16081625.2019.1673188 Document Version: Accepted

Published Version: https://doi.org/10.1080/16081625.2019.1673188

Southern Cross University Cross Connect: https://researchportal.scu.edu.au/esploro/ crossconnect@scu.edu.au Free to read Downloaded On 2024/04/28 21:40:42 +1000

Please do not remove this page

# Does it pay to be responsible? Evidence on corporate social responsibility and the investment performance of Australian REITs

Steffen Westermann, Scott J. Niblock<sup>\*</sup> and Michael A. Kortt School of Business and Tourism Southern Cross University Gold Coast, Australia

#### ABSTRACT

This paper creates portfolios to better understand the influence of corporate social responsibility (CSR) practices on the risk-adjusted returns of Australian Real Estate Investment Trusts (A-REITs) from 2007 to 2016. We find that A-REIT portfolios (except for the high CSR-rated portfolio) outperform the broader Asia-Pacific market. We also show that the low CSR-rated A-REIT portfolio delivers the best risk-adjusted return performance. Our findings indicate that while CSR practices might mitigate risk in A-REITs, they do *not* appear to improve risk-adjusted return performance. However, CSR practices may be effective in producing greater risk-adjusted returns for A-REITs during market downturns or economic crises.

KEYWORDS: Corporate Social Responsibility; Investment; Performance; Real Estate; Risk

JEL CODES: G12, G14, G19

WORD COUNT: 9,391

Paper published in the Asia-Pacific Journal of Accounting & Economics on 29 September 2019:

https://www.tandfonline.com/doi/full/10.1080/16081625.2019.1673188

<sup>\*</sup> CONTACT Scott Niblock 🖾 <u>scott.niblock@scu.edu.au</u>. ORCID ID 0000-0001-9840-238X. Our paper utilizes some literature, data and approaches found in Westermann et al. (2018a, 2018b). While minimal, we recognize any connection/similarity with these papers. This work was not supported by any funding agencies/grants nor were there any conflicts of interest.

#### 1. Introduction

Australian Real Estate Investment Trusts (A-REITs) are leveraged investment instruments that amalgamate investor capital to invest in physical real estate assets (e.g., office, industrial, retail properties, etc.), with the primary objective of generating the majority of their earnings from rental income (Westermann et al. 2018a, 2018b). First enacted as listed property trusts (LPTs)<sup>1</sup> in 1985, A-REITs have become widely recognized as the listed investment vehicle of choice on the Australian Stock Exchange (ASX) for holding a diverse range of domestic and international real estate investments. Moreover, their 'investor friendly' features (i.e., liquidity, income and capital growth, diversification benefits, low expenses, tax effectiveness, etc.), generally have great appeal for investors (Newell 2013; Westermann et al. 2018a, 2018b).

With approximately USD\$130 billion in assets and over 2,000 properties, A-REITs are an important contributor to Australian financial markets and the broader economy (Newell, 2013; Westermann et al. 2018a, 2018b). In 2017, the Australian REIT market (signifying approximately 10% of the S&P/ASX 300 index) included 78 A-REITs and represented over 90% of listed real estate (Capital IQ 2017; Westermann et al. 2018a, 2018b). When compared with international REIT markets (around USD\$1.3 trillion), the Australian REIT market is one of the largest REIT markets (by size and growth) globally (Capital IQ 2017; Ernst and Young 2016; Westermann et al. 2018a, 2018b).

Notwithstanding the alleged benefits and phenomenal growth of A-REITs in recent times, there are also rising concerns in terms of the health of the Australian real estate sector. For example, the Australian property market 'boom and bust' (particularly in Sydney and Melbourne), historically low interest rates, generous tax concessions for property investors, population growth, minimal wage growth, climate change effects, investor appetite for interest-only loans, growing household debt and mortgage serviceability, residential housing affordability, and the oversupply of central business district (CBD) residential apartment and office buildings (Westermann et al. 2018a, 2018b).

When taking these factors into account, A-REITs are obligated to make corporate/investment decisions that are both sustainable and in the best interests of society, with environmental, social and

governance (ESG) considerations increasingly motivating the corporate social responsibility (CSR) practices of most listed Australian entities (Bauer et al. 2011). As such, ESG factors are driving strong commitment to CSR within the A-REIT sector (Westermann et al. 2018a). For instance, Westermann et al. (2018a, p. 94) state that "A-REITs have been recognised to demonstrate CSR leadership among their financial peers. This is evident in the strong representation of A-REITs in global CSR indices such as the FTSE4Good Index, the Global 100, the Global ESG Benchmark for Real Assets (GRESB), the Dow Jones Sustainability World Index (DJSI World), and the CDP A List."

A CSR survey on the real estate market found that almost 40% of listed firms were investing in sustainable/green buildings, primarily motivated by their ethical responsibility to society (Pivo 2008). Further, A-REITs are more frequently pursuing a triple bottom line approach to their investment decision-making (i.e., creating economic profits, while at the same time investing in more balanced outcomes for society and the environment) (Ferrell et al. 2016). For example, GPT Group (2017, para 9), a prominent, A-REIT with a CSR focus, asserts that while generating economic value, they must also consider their ESG impact. They also claim that "[t]he voice of stakeholder communities and the needs of today's and future generations are at the heart of our decision making. Our key decisions across investment, development and operations recognise the interdependence between environment, people and economics."

A-REIT CSR strategies are increasingly being aligned to the changing (and challenging) environments they are operating within (Westermann et al. 2018a). Specifically, A-REITs are embracing various measures, targets, timelines, CSR ratings, and Carbon Disclosure Project (CDP) reporting to tackle complex ESG factors. Presenting their sustainability reports in accordance with UN Global Reporting Initiative Guidelines, CDP participating A-REITs generally perform quite well on Australian climate scores (Westermann et al. 2018a). For example, A-REITs such as Stockland Corporation, Dexus Group and GPT Group scored at least an A- on a scale from A (highest) to D- (lowest) (CDP 2016). Table 1 presents the CSR strategies and targets/initiatives of these leading A-REITs.

[Insert Table 1]

Although A-REITs appear to be demonstrating good CSR practices (Bauer et al. 2011; GSIA 2016; Newell 2008), it remains unclear whether such practices translate to greater investment performance. CSR advocates argue that pursuing a triple bottom line approach can lead to better economic outcomes for listed firms (Alexander and Buchholz 1978; Bénabou and Tirole 2010; Westermann et al. 2018b) but do CSR activities have a positive effect on the risk-adjusted return performance of A-REITs? There has been both sparse and mixed empirical evidence (Cajias et al. 2014; Hebb et al. 2010; Kerscher and Schäfers 2015; Newell and Lee 2012; Newell et al. 2011; Westermann et al. 2018b) presented on the investment performance of CSR REITs, particularly in Australia and in terms of risk-adjusted return performance (Westermann et al. 2018a). The literature chiefly focuses on REIT sustainability and corporate governance issues (Bauer et al. 2010; Bianco et al. 2007; Campbell et al. 2011; Ghosh and Sirmans 2003), with a tendency to establish firm-level financial and environmental outcomes rather than investment characteristics/performance (Devine and Kok 2015; Eichholtz et al. 2010; Fuerst and McAllister 2009, 2011; Kok and Jennen 2012; Newell et al. 2014). Also, as the real estate sector was arguably the catalyst for the Global Financial Crisis (GFC) and performed poorly during the event, there appears to be minimal research that models large economic shocks in establishing relationships between the risk-adjusted returns of REITs and their CSR practices (Westermann et al. 2018a).

As far as we are aware, there are only a handful of studies (Newell and Lee 2012; Newell et al. 2011; Westermann et al. 2018b) that empirically examine the investment performance of CSR REITs in Australia. For example, Newell et al. (2011) and Newell and Lee (2012) analysed the investment performance of 16 CSR A-REITs between 2005 and 2010 using regression models. Newell and Lee (2012) discovered that higher CSR-rated A-REITs outperformed their lower CSR-rated A-REIT counterparts, and that participating in CSR activities could be advantageous for A-REITs, particularly if they are seeking to reduce risks, improve risk-adjusted return performance and enhance their corporate reputation. Conversely, Newell et al. (2011) established that Australian CSR-orientated REITs do not outperform their more conventional counterparts.

Employing a rolling regression approach to determine the investment performance of CSR-rated A-REITs between 2010 and 2016, Westermann et al. (2018b) observed that lower CSR-rated portfolios have produced increasingly poorer risk-adjusted performance over time, while higher CSR-rated portfolios have delivered progressively greater risk-adjusted performance. The authors, however, argued that the reported performance gap between CSR-rated A-REIT portfolios appeared to be narrowing over time due to increased CSR activities and the fluctuation of risk factor loadings as a result of such activities.

The motivation of this paper stems from recent concerns surrounding the Australian real estate market and economic fallout associated with listed property investments during the GFC. It is also motivated by gaps in the literature regarding the CSR activities of A-REITS and their capacity to generate superior risk-adjusted return performance. Thus, we follow in the steps of Westermann et al. (2018b) by addressing the research question:

#### Do the CSR practices of Australian REITs translate to greater risk-adjusted return performance?

Using monthly A-REIT returns and CSR ratings, this paper investigates whether CSR-orientated Australian REITs outperform the wider Asia-Pacific market and conventional Australian REITs between 2007 and 2016. By creating a conventional Australian REIT portfolio and portfolios determined by CSR ratings (high, average and low), we estimate the impact of CSR practices on A-REIT performance using a multifactor regression model (see Carhart 1997). To control for any economic shocks associated with the GFC, a dummy variable is added to the model. The testable hypotheses are:

- H1: Conventional A-REITs do not outperform the wider Asia-Pacific market
- H<sub>2</sub>: CSR A-REITs do *not* outperform the wider Asia-Pacific market
- H<sub>3</sub>: CSR A-REITs do not outperform conventional A-REITs.

We find that, after adjusting for risk and the GFC, the A-REIT portfolios (except for the high CSRrated A-REIT portfolio) outperform the broader Asia-Pacific market. We also show that the low CSR-rated A-REIT portfolio delivers the best risk-adjusted return performance. Our findings indicate that while CSR practices might mitigate risk in A-REITs, they do *not* appear to improve risk-adjusted return performance. However, CSR practices may be effective in producing greater risk-adjusted returns for A-REITs during market downturns or economic crises. The remainder of this paper is structured as follows. Section 2 presents the data and methods used. Section 3 highlights the empirical findings. Section 4 concludes by summarising the empirical findings, raising key implications and providing recommendations for further research.

#### 2. Data & Methods

#### 2.1 Data

The sample consists of 120 end-of-month 'total return' observations of 30 S&P/ASX 300 A-REITs and the S&P/ASX 300 index from January 2007 through to December 2016. For the purpose of this study, the S&P/ASX 300 index is included for performance benchmarking and only S&P/ASX 300 A-REITs that are listed as of 31 December 2016 are considered. The S&P/ASX 300 index is considered to be a good proxy for Australian equities, as its combined market capitalization represents approximately 85% of the Australian stock market (Capital IQ 2017). The S&P/ASX 300 index also includes the majority of A-REITs listed on the Australian stock market, with all A-REITs employed in this study being constituents of the index. For instance, the sample represents 80.44% of the Australian REIT market, as measured by market capitalization on 4 July 2017 (Capital IQ 2017). The names, market capitalizations, industry categories and CSR ratings of all A-REITs compiled within the sample are presented in Table 2.

### [Insert Table 2]

All A-REIT returns are US dollar (USD) denominated for comparability with the end-of-month Asia-Pacific (ex-Japan)<sup>2</sup> risk factors and US Treasury Bill (T-Bill) rates utilized (see discussion below). The return data is obtained from S&P Capital IQ, with the observation period being long enough to account for the GFC. Specifically, the sample captures the pre-GFC (January 2007 - April 2007), GFC (May 2007 -March 2009), and post-GFC (April 2009 - December 2016) periods. For the purpose of this paper, we see the collapse of several hedge funds as the beginning of the GFC period (Helleiner 2011) and the recovery of the S&P/ASX 300 A-REIT index in April 2009 as the end of the GFC period, as indicated by the following key events (see Figure 1):

- 1. In May and June 2007, several US hedge funds collapsed (Helleiner 2011).
- During August 2007, money markets started becoming concerned about the mortgage-related financial products and associated investments of a wide range of financial institutions in the US and Europe (Helleiner 2011), leading to rising interbank market spreads in Australia and globally (Claessens et al. 2010; McDonald and Morling 2012).
- 3. In January 2008, A-REITs were feeling the effects of a potential US mortgage crisis.
- In March 2008, US authorities had to take steps to rescue investment bank, Bear Sterns (Helleiner 2011).
- 5. During September 2008, the financial crisis spread globally as a result of a loss in market confidence following the public 'conservatorship' of Fannie Mae and Freddie Mac, the bankruptcy of US investment bank, Lehman Brothers, and the rescue of American International Group (AIG) by the US government (Helleiner 2011).
- In October 2008, the Australian Government announces an AUD 10.4 billion stimulus plan in response to the GFC (The Age 2008).
- In February 2009, the Australian Government announces a second stimulus plan worth AUD 42 billion (SMH 2009).
- 8. In April 2009, A-REITs commenced their recovery from the GFC.

#### [Insert Figure 1]

Given that A-REITs are listed on the stock exchange and considered equities, we employ a multifactor model that captures risk variables that are derived from the broader Asia-Pacific (ex-Japan) equities market. As indicated by Fama and French (2012) and Griffin (2002), region-specific factors rather than global factors are believed to increase the explanatory power for domestic portfolios. Further, Costa et al. (2014) and Westermann et al. (2018b) consider Asia-Pacific risk factors to be a reasonable proxy for

Australian risk factors. For example, in this study, the adjusted  $R^2$  for the S&P/ASX 300 index is approximately 95%; thus, confirming the explanatory power of Asia-Pacific risk factors in Australian riskadjusted return studies (see Table 4). Therefore, to ensure that our findings are in-line with previous research, this study uses monthly Asia-Pacific (ex-Japan) Carhart (1997) factors, namely: market risk premium (*RMRF*); size (*SMB*); book-to-market (*HML*); and momentum (*MOM*). As specified above, the four risk factors are based on USD denominated stock returns and directly obtained from Kenneth French's website.<sup>3</sup>

Since there are no CSR indices available solely for A-REITs, and in-line with Westermann et al. (2018b), portfolios are created to empirically examine the investment performance of CSR A-REITs (see section 2.2.1). To create the portfolios, CSR ratings<sup>4</sup> are obtained from CSRHub<sup>5</sup> for each A-REIT within the sample. CSRHub is a leading CSR/sustainability rating provider that has been used previously by researchers (see Agyei-Mensah and Buertey 2018; Bouvain et al. 2013; Soytas et al. 2019; Westermann et al. 2018b). CSRHub uses big data to provide CSR ratings on over 17,000 companies from 139 countries. The ratings are based around 200 million data points on CSR factors from over 630 different sources including Socially Responsible Investing (SRI)/ESG research firms, non-governmental organizations (NGOs), government agencies, publications and research reports. Examples include, the Carbon Disclosure Project and ASSET4. The data is categorized into 12 CSR/sustainability performance indicators, which are then grouped and normalized into four CSR dimensions, namely: *Governance, Employee, Community* and *Environment* (see Table 2 and Figure 2). The overall CSR score is obtained by applying weights to each CSR dimension. The scores range from 0-100, with zero being the lowest score possible and 100 being the highest. However, Westermann et al. (2018b, p. 224) suggests that compiling CSR ratings in this manner has its limitations, noting that:

CSR data are often based on the voluntary disclosure of information by A-REITs. This voluntary disclosure often has a size bias, with larger A-REITs having more resources and greater incentive to disclose CSR relevant information than their smaller A-REIT counterparts. Thus, the voluntary disclosure of such information is likely to influence CSR ratings and should be treated with caution.

[Insert Figure 2]

Bouvain et al. (2013) also note a limitation of using aggregate CSR measures – specifically that non- or low-performance in one dimension can be offset by strong-performance in another dimension. To overcome this problem, they use the average weight that was applied to each of the four dimensions by CSRHub's professional users in order to capture the views of the CSR community (Bouvain et al. 2013). This study, however, uses equal weights of Employees, Community, Environment and Governance ratings to obtain the overall CSR ratings for four reasons. First, using the average weightings of CSR professionals may bias the score towards certain user groups. For instance, higher weights in one dimension could simply reflect a larger user group that is interested in that specific CSR domain. Second, the respective scores for each CSR dimension arguably already reflect the expectations of CSR professionals and society at large. In other words, companies tend to respond to society's expectations in order to maintain legitimacy. However, it should be noted that by definition, these responses lack the expectations of CSR professionals and society. Third, the average weight is only a snapshot in time that reflects the current economic and social environment. That is, in times of economic growth, low unemployment rates and social movements, such as Fridays for Future, environmental and community factors might be valued more. Whereas, in times of rising unemployment and economic downturns, the focus may shift from environmental and community factors to the employee and governance dimensions. Lastly, using equal weights that are independent from economic and social influences allows comparison with future studies.

#### 2.2 Methods

#### 2.2.1 A-REIT portfolios

A-REIT market capitalizations drive their respective risk-adjusted returns. In other words, A-REITs with smaller market capitalizations are commonly considered to have higher risks, and thus, higher potential returns. While the Carhart (1997) model accounts for size, it is also necessary to consider this effect at the portfolio level. Consequently, all portfolios within this research are constructed as value-weighted by market capitalization. First, a value-weighted conventional A-REIT portfolio (*AREIT*), consisting of the 30 A-REITs, is constructed to represent a passive investment approach (Westermann et al. 2018b). To prevent

any selection bias, *AREIT* also includes a contingency of A-REITs within the sample that have no CSR ratings (NCSR). Three value-weighted CSR portfolios are then constructed using overall CSR rating quartiles (e.g., *Q1*, *Q2*, *Q3* and *Q4* – see Table 2) (Westermann et al. 2018b). Note: the CSR constructed portfolios comprise only CSR-rated A-REITs (e.g., NCSR A-REITs are not included in the CSR portfolios). The Australian CSR REIT portfolios<sup>6</sup> are: (1) *HighCSR\_AREIT (Q4)*; (2) *AvgCSR\_AREIT (Q3* and *Q2)*; and (3) *LowCSR\_AREIT (Q1)*. The S&P/ASX 300 index is represented by *ASX300*.

#### 2.2.2 Carhart four-factor model

To gain a better understanding of the CSR ratings associated with A-REITs, portfolio risk-adjusted return performance is examined using the Carhart (1997) multifactor model. The OLS regression model builds on Fama and French's (1993) three-factor model and Jegadeesh and Titman's (1993) additional return momentum factor. The four-factor model produces an intercept (or alpha – see Jensen 1968), which is used to establish risk-adjusted return outperformance/underperformance compared to the broader Asia-Pacific market.

To analyse whether the constructed A-REIT portfolios significantly outperform/underperform, the Carhart (1997) four-factor model is used with a dummy variable to account for any economic shocks associated with the GFC:

$$R_{it} - RF_{it} = \alpha_{iT} + \alpha_{iT}GFC + \beta_{iT}RMRF_t + \beta_{iT}SMB_t + \beta_{iT}HML_t + \beta_{iT}MOM_t + \varepsilon_{it}, \quad (1)$$

where  $R_{it}$  is the portfolio at end-of-month *t*.  $RF_{it}$  is the 30-day US T-Bill rate.  $R_{it} - RF_{it}$  is the excess monthly return of the portfolio. The four risk factors are returns on Asia-Pacific (ex-Japan) value-weighted, factor-mimicking portfolios. For instance,  $RMRF_t$  is the excess return of the Asia-Pacific (ex-Japan) valueweighted market portfolio ( $RM_{it} - RF_{it}$ ),  $SMB_t$  is size,  $HML_t$  is book-to-market, and  $MOM_t$  is lagged return momentum. *GFC* is the dummy variable to control for the Global Financial Crisis. According to Figure 1 above, we consider January 2007 to April 2007 as the pre-GFC period (GFC dummy = 0), May 2007 to March 2009 as the GFC period (GFC dummy = 1), and April 2009 to December 2016 as the postGFC period (GFC dummy = 0).  $\alpha_{iT}$  and  $\beta_{iT}$  are the alpha and beta of the portfolio, respectively.  $\varepsilon_{it}$  is a random error term.

Given that the sample is relatively large for monthly data, the model *t*-statistics are estimated using the Newey and West (1987) approach to adjust for standard errors, in terms of autocorrelation and heteroscedasticity. Finally, the model is run for all A-REIT portfolios and the S&P/ASX 300 index, with alpha and risk factor coefficients generated being addressed via  $H_1$  and  $H_2$ . The test results provide evidence on whether A-REIT portfolios (both conventional and CSR) statistically generate abnormal risk-adjusted returns and, hence, outperform/underperform the broader Asia-Pacific market. In testing  $H_3$ , the next step involves statistically comparing the previously estimated coefficients for each A-REIT portfolio under investigation. For instance, a one-tailed *t*-test is employed to compare and test the statistical significance of the coefficients. Finally, the coefficients are also statistically compared across the CSR A-REIT portfolios in an attempt to provide additional insights.

#### 3. Results

#### 3.1 Summary statistics

Summary statistics are shown in Table 3 and distinguish between the S&P/ASX 300 index and A-REIT portfolios (both conventional and CSR). At first glance, the CSR and market capitalization measures for the A-REIT portfolios seem to be consistent with slack resource theory. This sees A-REITs with greater financial resources (i.e., using average market capitalization as a benchmark) participating more in CSR strategies (i.e., using the average overall CSR rating as a benchmark).

#### [Insert Table 3]

*LowCSR\_AREIT* (with a mean nominal return of 1.03%) was by far the strongest performer in nominal terms. Compared to *AREIT* (0.37%), *LowCSR\_AREIT* nominally outperformed by almost three times as much or close to two and five times compared to *AvgCSR\_AREIT* (0.49%) and *HighCSR\_AREIT* (0.19%), respectively. However, only *LowCSR\_AREIT* nominally outperformed the *ASX300* (0.55%). The portfolios' return volatility (with standard deviations ranging from 8.63% to 12.23%) paints a similar

picture. The higher average market capitalization of *AvgCSR\_AREIT* compared to *LowCSR\_AREIT* and *HighCSR\_AREIT* confirms that the former displays a lower standard deviation due to the size factor and diversification benefits from the larger number of A-REITs included in the portfolio. Nevertheless, the standard deviations reported seem to generally confirm the notion that CSR practices are effective in mitigating risk. Comparing the standard deviation based on the overall CSR ratings of each portfolio further supports this finding. In essence, the higher the overall CSR rating, the lower the portfolio standard deviation. As expected, the *ASX300* demonstrated the lowest standard deviation (7.15%) compared to the A-REIT portfolios.

#### 3.2 Carhart four-factor regressions

Table 4 reports the full-period alpha, risk factor, and GFC dummy coefficients for the S&P/ASX 300 and all constructed A-REIT portfolios. Table 3 shows that  $H_1$  is rejected at the 10% level for *AREIT*. Rejection of  $H_1$  suggests that after adjusting for inherent risks, on average, A-REITs outperformed the broader Asia-Pacific market by 0.77%. Except for *HighCSR\_AREIT* (0.38%), the CSR A-REIT portfolios also showed positive and significant alphas at the 10% level or better. Therefore, it appears that the lower the portfolio's overall CSR rating, the better the risk-adjusted performance compared to the broader Asia-Pacific market. In particular, *LowCSR\_AREIT* and *AvgCSR\_AREIT* experienced the highest risk-adjusted returns amongst all portfolios with 2.62% and 1.08%, respectively. Consistent with the findings from the value-weighted conventional A-REIT portfolio, this indicates that low and average Australian CSR REIT portfolios also outperformed the broader Asia-Pacific market; thus,  $H_2$  is rejected for these two portfolios. Notably, *ASX300* produced the lowest alpha (0.25%).

#### [Insert Table 4]

These findings are consistent with Cajias et al. (2014), who showed that positive ESG ratings have no significant impact on REIT returns. While in contrast to the growing perception that CSR can boost financial performance (Bénabou and Tirole 2010; Orlitzky et al. 2003), the alpha estimates accept the agency perspective on CSR practices but seemingly contradict the efficient market hypothesis (EMH). Overall, the findings suggest that investors who passively invested in A-REIT portfolios (except for *HighCSR\_AREIT*) were, on average, able to outperform the broader Asia-Pacific market on a risk-adjusted return basis. The *RMRF* factor loadings were all positive and statistically significant at the 1% level. With the exception of *AvgCSR\_AREIT* (0.9619), this indicates that all constructed portfolios were exposed to greater market risk (between 1.0007 and 1.0717) than the broader Asia-Pacific market. Comparing the *RMRF* of the A-REIT portfolios, it is evident that *LowCSR\_AREIT* shows the highest factor loading with 1.0717 and *HighCSR\_AREIT* the second highest after *AREIT* with 1.0435 and 1.0007, respectively. *ASX300* (1.0187) demonstrated market risk in-line with the broader Asia-Pacific market, which was expected.

The differences in the factor loadings between the CSR A-REIT portfolios seem to indicate that higher overall CSR ratings are associated with lower *RMRF* factor loadings. This could indicate that an increased focus on corporate governance within CSR A-REITs has helped these organisations to find a better balance between the 'trade-offs' of additional leverage. Also, high sale values and rent, low vacancy, and the mitigation of environmental and legislative risks associated with sustainable building investments suggest that investors may assign a smaller premium in terms of risk to green properties (Eichholtz et al. 2010, 2013; Westermann et al. 2018a; Wiley et al. 2010). Overall, these findings indicate that good CSR practices could be beneficial in mitigating risk for A-REITs. However, part of this effect could be explained by the varying diversification benefits that are attributable to portfolio size.

Apart from *LowCSR\_AREIT*, all constructed portfolios have negative and significant *SMB* coefficients, indicating that the A-REIT sector was large cap orientated relative to the broader Asia-Pacific market. While insignificant, the positive *LowCSR\_AREIT* factor loading (0.1756) is what one would expect from the portfolio's average market capitalization. On the other hand, the *AREIT*, *AvgCSR\_AREIT* and *HighCSR\_AREIT* factors of -0.4626, -0.5698 and -0.3915, respectively, are negative and significant at the 5% level or better. This is broadly consistent with Chui et al. (2003a) and Peterson and Hsieh (1997), who showed that size is significant in explaining REIT returns. *ASX300* (-0.2433) also demonstrated a negative and significant *SMB* factor at the 1% level, indicating the large cap orientation of the Australian stock market.

The HML factor loadings for all constructed portfolios were both, negative and – except for LowCSR AREIT and HighCSR AREIT – statistically significant at the 5% level or better. This demonstrates that the A-REIT sector was more growth orientated relative to the broader Asia-Pacific market. Given that AREIT and AvgCSR AREIT showed the factor loadings with the greatest magnitude, -0.4441 and -0.6027, respectively, this may imply that A-REITs within AvgCSR\_AREIT were valued for their growth capabilities. Assuming that A-REITs generally distribute 100% of their taxable income to unit holders, their inability to fund future growth and provide for contingencies through retained earnings indicates that A-REITs may rely on external capital and credit lines throughout turbulent economic periods. For instance, Zarebski and Dimovski (2012) demonstrated that A-REITs increased their leverage after the onset of the GFC, implying an inability to effectively raise equity capital. Further, given that the Australian real estate sector has experienced strong growth over the past decade, A-REIT investors seem to value growth and capital appreciation potential more than the traditional income-generating features of A-REITs. This notion supports Hardin and Hill (2008) and Westermann et al. (2018a), who propose that investors value excess dividends. Hence, it does not seem surprising that investors appear to price A-REITs for the capital appreciation potential of their underlying assets. ASX300 (-0.5524) also demonstrated a negative and significant HML factor at the 1% level, signifying the growth orientation of the Australian stock market compared to the broader Asia-Pacific market.

The *MOM* factor loadings were all negative and insignificant. As indicated in the literature (Chui et al. 2003a, 2003b; Derwall et al. 2009; Goebel et al. 2013; Hung and Glascock 2008; Lee et al. 2007), positive *MOM* factor loadings were expected. The lack of significance in *MOM* may be linked to the momentum factor being significantly underestimated by conventional multifactor models (Derwall et al. 2009). With the exception of *ASX300*, all *GFC* loadings were negative and significant at the 5% level or better, suggesting that A-REITs were more affected by the GFC than the broader Asia-Pacific market. Comparing the *GFC* coefficients based on the overall CSR rating, the findings suggest that A-REITs with a higher overall CSR rating performed better throughout the GFC relative to the broader Asia-Pacific market and their conventional counterparts. For instance, the *GFC* estimate of *HighCSR AREIT* (-0.0351)

is substantially lower compared to the estimate of *LowCSR\_AREIT* (-0.0994). This could indicate that CSR practices are effective in mitigating risk during market downturns or economic crises (Maignan et al. 2005; Porter and Kramer 2006).

#### 3.3 Carhart four-factor regression coefficient comparisons

Table 5 summarises the findings regarding the alphas and factor loadings of the CSR A-REIT portfolios in the sample versus the alpha and respective factor loadings of the *AREIT* benchmark portfolio. Notably, this statistical comparison changes the significance level of the portfolio alphas and the factor coefficient estimates. For instance, when carrying out the *t*-tests, only the *LowCSR\_AREIT* alpha of 0.0262 retains its significance. Therefore, **H**<sub>3</sub> is rejected only for *LowCSR\_AREIT* at the 5% level; whereas **H**<sub>3</sub> is accepted for *AvgCSR\_AREIT* and *HighCSR\_AREIT*. In other words, compared to investing in *AREIT*, only *LowCSR\_AREIT* would have affected unit holder wealth positively. Failing to reject **H**<sub>3</sub> for *AvgCSR\_AREIT* and *HighCSR\_AREIT* suggests that there is no statistical connection between overall CSR ratings and the investment performance of Australian REITs.

#### [Insert Table 5]

Unlike the findings of other international research conducted in this area (Hebb et al. 2010; Kerscher and Schäfers 2015; Newell and Lee 2012), this paper does not find any evidence that high or average-rated CSR A-REITs outperform their conventional counterparts. Comparable to the outcomes derived from  $H_1$ and  $H_2$  testing, these findings support the agency perspective on CSR practices (Cajias et al. 2014) but contradict the EMH assumption for the Australian REIT market. For instance, investors who were passively investing in low-rated CSR A-REITs outperformed the A-REIT market by 1.85% over the time period investigated.

Apart from alpha, only the *SMB* and *GFC* coefficients for *LowCSR\_AREIT* were found to be significant. Given the smaller average market capitalization of *LowCSR\_AREIT*, it is not unexpected that the *SMB* loading is considerably larger at the 5% level than the respective *AREIT* loading. Further, with the *GFC* factor estimate being smaller at the 5% level, this indicates that lower-rated CSR A-REITs were more

affected by the GFC than the conventional A-REIT. One possible explanation of these findings could be that large market capitalization A-REITs and CSR A-REITs include prestige properties or flagship sustainable real estate in their portfolios that were more likely to uphold value and rental income during the GFC (Eichholtz et al. 2013). This again confirms the general notion of the risk-return relationship and suggests that CSR strategies might mitigate risk in A-REITs, but at the expense of higher returns. For example, contrary to Newell et al. (2011), higher rated Australian CSR REITs were not as risky as their lower rated CSR A-REIT counterparts during the GFC.

We also examine the alphas and factor loadings of the conventional A-REIT and CSR A-REIT portfolios in the sample versus the alpha and respective factor loadings of the S&P/ASX 300 index (unreported). We find that alphas are positive and significant at the 10% level or better for *AvgCSR\_AREIT* and *LowCSR\_AREIT*, while *GFC* factors are negative and significant at the 5% level or better for *AREIT*, *HighCSR\_AREIT*, *AvgCSR\_AREIT*, and *LowCSR\_AREIT*. All other factor loadings were insignificant. These findings suggest that lower CSR-rated A-REITs appear to outperform the Australian stock market during normal market conditions. However, during the GFC, both conventional and CSR A-REITs underperformed the Australian stock market, with higher CSR-rated A-REITs performing better than their peers.

In addition to  $H_3$ , Table 6 provides the results from *t*-testing the coefficients amongst the sub-set CSR A-REIT portfolios. Again, the level of significance of the respective alphas and factor loading estimates change. Specifically, the alpha of *HighCSR\_AREIT* is 2.24% lower than the alpha of *LowCSR\_AREIT* at the 5% level, and the risk-adjusted return of *AvgCSR\_AREIT* is 1.54% lower than *LowCSR\_AREIT* at the 10% level. While these findings are consistent with Cajias et al. (2014), they stand in contrast to the findings of Newell et al. (2011).

#### [Insert Table 6]

Unlike Eichholtz et al. (2012) who found that the sustainability of US REITs is negatively related to their betas, a statistically significant relationship between overall CSR ratings and *RMRF* is not observed in this paper. Further, the *SMB t*-test results also complement the earlier findings presented. That is,

*HighCSR\_AREIT* and *AvgCSR\_AREIT* produced significantly smaller *SMB* estimates than *LowCSR\_AREIT*, indicating that low-rated CSR A-REITs were primarily small cap focused. Notably, compared to *LowCSR\_AREIT*, the *GFC* factor estimate for *HighCSR\_AREIT* and *AvgCSR\_AREIT* were significantly larger at the 5% level or better. Given that the Carhart (1997) model adjusts for inherent market risks, this could suggest that higher-rated CSR A-REITs were able to utilise sustainable property to hedge against and provide additional governance to mitigate risk during the GFC (Eichholtz et al. 2013). The lack of statistical significance found in the differences between the *HML* and *MOM* factor loadings does not allow for any valid explanation.

#### 4. Conclusion

This paper examined the impact of CSR practices on S&P/ASX 300 A-REIT investment performance. Specifically, we examined whether abnormal risk-adjusted performance could be produced by investing in conventional and CSR REIT portfolios in Australia between 2007 and 2016. Controlling for the GFC, the Carhart (1997) multifactor model was used to address the research question and hypotheses for the first time in an Australian context using recent data. While CSR practices might mitigate risk in Australian REITs, we found little evidence to suggest that CSR practices consistently increase A-REIT risk-adjusted return performance. For instance, the findings reported positive and significant alphas for *AREIT*, *LowCSR\_AREIT* and *AvgCSR\_AREIT* but not *HighCSR\_AREIT*; thus, refuting the EMH. Further, based on *LowCSR\_AREIT* statistically outperforming *AREIT* and the remaining CSR A-REIT portfolios, the agency view on CSR was accepted. However, CSR practices may be effective in producing greater risk-adjusted returns during market downturns or economic crises. For example, *HighCSR\_AREIT* performed better throughout the GFC relative to *AREIT, AvgCSR\_AREIT* and *LowCSR\_AREIT* but not compared to *ASX300*.

If the primary findings of this paper hold true for REITs, this questions the feasibility of theories that go beyond Friedman's (1962) maxim, such as stakeholder theory, the triple bottom line, and Carroll's (1991) CSR pyramid. Moreover, it challenges the assumption that good CSR practices ensure that investors are achieving above-average risk-adjusted returns on their investments (Shleifer and Vishny 1997). From a pure investment perspective, our results suggest that investors should passively invest in portfolios that reflect diversified REIT indexes or REITs that possess low/high CSR ratings during normal economic conditions/economic crises. For instance, *LowCSR\_AREIT* was found to produce the best investment performance relative to the wider market and other A-REIT portfolios during normal economic conditions, whereas, with the exception of *ASX300*, *HighCSR\_AREIT* delivered the best investment performance during the GFC. Nevertheless, investors need to be cognisant of changing sustainability ratings, along with economic/political/environmental/societal conditions that may hamper returns associated with the property markets over time (e.g., property bubbles, economic crises, tax concessions, low interest rates and wage growth, interest-only loans, population growth, climate change, debt serviceability, housing affordability, oversupply of apartment and office buildings, etc.).

From a corporate/management perspective, REIT managers should continue to implement CSR bestpractices such as sound and long-term orientated internal corporate governance and ESG policies that encourage value-adding, long-term sustainable investments. For instance, managers should appreciate the hedge-function of green buildings and their ability to maintain value (Eichholtz et al. 2013). Arguably, to make CSR practices more financially viable for investors, strong policy making, effective regulations, monetary incentives, tax deductions and rating systems are needed to foster the advancement and affordability of sustainable technology, properties and investments (Westermann et al. 2018a).

This paper has made a significant contribution to the literature by presenting an overview of the current state of the A-REIT sector, creating a greater awareness of the investment performance of Australian CSR REITs, and providing both theoretical and practical insights for regional/international fund managers, investors, policy makers and consumers alike. To draw comparisons, similar studies could be conducted across Australian stock market sectors, the Asia-Pacific region and/or globally. Further research could also be carried out to establish the advantages and disadvantages of CSR REIT investment in greater detail and to distinguish the specific characteristics associated with their risk-adjusted return performance. It could also evaluate REIT performance based on individual CSR dimensions (i.e., *Community, Corporate Governance, Employees* and *Environment*).

Future studies could also consider the suitability of the Carhart (1997) model by adopting a momentum factor specific to REITs (Derwall et al. 2009). Or alternatively, utilising an investment-based factor model for REITs such as the one employed in a recent study by Bond and Xue (2017). For instance, their model was found to better capture the cross-sectional returns of US REITs than conventional multifactor models. Finally, the inclusion of trading volumes and transaction costs could offer a greater awareness of CSR REIT investment performance. Ultimately, the research proposed will continue to promote investment in REITs, with the view of making CSR practices more effective and financially viable for investors.

#### Notes

- 1. In 2007, LPTs were re-branded to REITs in order to align their terminology with international standards.
- 2. Stock return momentum is not encountered in Japanese equities markets and therefore not included in the Asia-Pacific market portfolio for multifactor risk-return modelling purposes (Fama and French 2012).
- 3. See www.mba.tuck.dartmouth.edu/pages/ faculty/ken.french/data\_library.html
- 4. Monthly and/or historical CSR ratings are not available. As of 4 July 2017, and for the purpose of conducting the required analyses, the CSR ratings employed are considered stable and demonstrative of the period under investigation (Westermann et al. 2018b).
- 5. CSRHub provides CSR ratings at the company level and is well suited as a provider of reliable CSR ratings. See https://www.csrhub.com/ for more details.
- 6. To establish any rating variation, overall CSR and CSR dimension ratings were statistically compared between the constructed Australian CSR REIT portfolios. Unreported t-tests showed significantly different CSR ratings (1% level) between all combinations of the high, average and low CSR-rated A-REIT portfolios (Westermann et al. 2018b).

#### References

- Agyei-Mensah, B.K., and S. Buertey. 2018. "The effect of corruption and culture on corporate social performance: an empirical study." *Social Responsibility Journal* Vol. and No. ahead-of-print. https://doi.org/10.1108/SRJ-12-2017-0271.
- Alexander, G.J., and R.A. Buchholz. 1978. "Corporate social responsibility and stock market performance." *Academy of Management Journal 21*(3):479-486.
- Bauer, R., P. Eichholtz, and N. Kok. 2010. "Corporate governance and performance: The REIT effect." *Real Estate Economics* 38(1):1-29.
- Bauer, R., P. Eichholtz, N. Kok, and J.M. Quigley. 2011. "How green is your property portfolio? The global real estate sustainability benchmark." *Rotman International Journal for Pension Management* 4(1):34-43.
- Bénabou, R., and J. Tirole. 2010. "Individual and corporate social responsibility." *Economica* 77(305):1-19.
- Bianco, C., C. Ghosh, and C.F. Sirmans. 2007. "The impact of corporate governance on the performance of REITs." *The Journal of Portfolio Management* 33(5):175-191.
- Bond, S., and C. Xue. 2017. "The cross section of expected real estate returns: Insights from investmentbased asset pricing." *Journal of Real Estate Finance and Economics* 54(3):403-428.
- Bouvain, P., C. Baumann, and E. Lundmark. 2013. "Corporate social responsibility in financial services: A comparison of Chinese and East Asian banks vis-à-vis American banks." *The International Journal of Bank Marketing 31*(6):420-439.
- Cajias, M., F. Fuerst, P. McAllister, and A. Nanda. 2014. "Do responsible real estate companies outperform their peers?" *International Journal of Strategic Property Management 18*(1):11-27.
- Campbell, R.D., C. Ghosh, M. Petrova, and C.F. Sirmans. 2011. "Corporate governance and performance in the market for corporate control: The case of REITs." *Journal of Real Estate Finance and Economics*, 42(4):451-480.
- Capital IQ. 2017. "S&P Capital IQ platform." https://www.capitaliq.com. Accessed 28 February 2017.
- Carhart, M.M. 1997. "On persistence in mutual fund performance." The Journal of Finance 52(1):57-82.
- Carroll, A.B. 1991. "The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders." *Business Horizons* 34(4):39-48.
- CDP. 2016. "Australian Climate Leadership Report 2016". Carbon Disclosure Project. https://b8f65cb373b1b7b15febc70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/001/351/ original/Australian-Climate-Leadership-Report-2016.pdf?1481534375. Accessed 05 September 2017.
- Chui, A.C.W., S. Titman, and K.C.J. Wei. 2003a. "The cross section of expected REIT returns." *Real Estate Economics* 31(3):451-479.
- Chui, A.C.W., S. Titman, and K.C.J. Wei. 2003b. "Intra-industry momentum: The case of REITs." *Journal of Financial Markets* 6(3):363-387.
- Claessens, S., G. Dell'Ariccia, D. Igan, and L. Laeven. 2010. "Lessons and policy implications from the global financial crisis". WP No. 10-44. https://www.bcb.gov.br/Pec/Depep/Eventos/2010\_Agosto\_dia11\_Conferencia/Arquivos/2\_Lesso ns and Policy Implications from the Global Financial Crisis.pdf. Accessed 15 July 2019.
- Costa, B.A., K. Jakob, S.J. Niblock, and E. Sinnewe. 2014. "Australian Stock Indexes and the Four-Factor Model." *Applied Finance Letters* 3(1):10-21.
- Derwall, J., J. Huij, D. Brounen, and W. Marquering. 2009. "REIT momentum and the performance of real estate mutual funds." *Financial Analysts Journal* 65(5):24-34.
- Devine, A., and N. Kok. 2015. "Green certification and building performance: Implications for tangibles and intangibles." *Journal of Portfolio Management 41*(6):151-163.
- Dexus. 2017. "Corporate responsibility and sustainability." http://www.dexus.com/who-we-are/corporateresponsibility-and-sustainability/sustainability-approach. Accessed 08 November 2017.

- Eichholtz, P., N. Kok, and J.M. Quigley. 2010. "Doing well by doing good? Green office buildings." *The American Economic Review* 100(5):2492-2509.
- Eichholtz, P., N. Kok, and J.M. Quigley. 2013. "The economics of green building." *Review of Economics* and Statistics 95(1):50-63.
- Eichholtz, P., N. Kok, and E. Yonder. 2012. "Portfolio greenness and the financial performance of REITs." *Journal of International Money and Finance 31*(7):1911-1929.
- Ernst and Young. 2016. "Global perspectives: 2016 REIT report." https://webforms.ey.com/Publication/vwLUAssets/ey-global-perspectives-2016-reit-report/\$FILE/ey-global-perspectives-2016-reit-report.pdf. Accessed 13 November 2017.
- Fama, E.F., and K.R. French. 1993. "Common risk factors in the returns on stocks and bonds." *Journal of Financial Economics* 33(1):3-56.
- Fama, E.F., and K.R. French. 2012. "Size, value, and momentum in international stock returns." *Journal* of Financial Economics 105(3):457-472.
- Ferrell, A, H. Liang, and L. Renneboog. 2016. "Socially responsible firms." *Journal of Financial Economics 122*(3):585-606.
- Friedman, M. 1962. "Capitalism and freedom." Chicago, IL: University of Chicago Press.
- Fuerst, F., and P. McAllister. 2009. "An investigation of the effect of eco-labeling on office occupancy rates." *The Journal of Sustainable Real Estate 1*(1):49-64.
- Fuerst, F., and P. McAllister. 2011. "Green noise or green value? Measuring the effects of environmental certification on office values." *Real Estate Economics 39*(1):45-69.
- Ghosh, C., and C.F. Sirmans. 2003. "Board independence, ownership structure and performance: Evidence from real estate investment trusts." *Journal of Real Estate Finance and Economics* 26(2):287-318.
- Goebel, P.R., D.M. Harrison, J.M. Mercer, and R.J. Whitby. 2013. "REIT momentum and characteristicrelated REIT returns." *Journal of Real Estate Finance and Economics* 47(3):564-581.
- GPT Group. 2017. "Sustainability overview." http://www.gpt.com.au/sustainability/overview. Accessed 08 November 2017.
- Griffin, J.M. 2002. "Are the Fama and French factors global or country specific?" *The Review of Financial Studies* 15(3):783-803.
- GSIA. 2016. "2016 Global sustainable investment review." http://www.gsi-alliance.org/wpcontent/uploads/2017/03/GSIR Review2016.F.pdf. Accessed 05 September 2017.
- Hardin, W.G.I., and M.D. Hill. 2008. "REIT dividend determinants: Excess dividends and capital markets." *Real Estate Economics* 36(2):349-369.
- Hebb, T., A.Hamilton, and H. Hachigian. 2010. "Responsible property investing in Canada: Factoring both environmental and social impacts in the Canadian real estate market." *Journal of Business Ethics* 92(1):99-115.
- Helleiner, E. 2011. "Understanding the 2007–2008 global financial crisis: Lessons for scholars of international political economy." *Annual Review of Political Science 14*:67-87.
- Hung, S.Y.K., and J.L. Glascock. 2008. "Momentum profitability and market trend: Evidence from REITs." *Journal of Real Estate Finance and Economics* 37(1):51-69.
- Jegadeesh, N., and S. Titman. 1993. "Returns to buying winners and selling losers: Implications for stock market efficiency." *The Journal of Finance* 48(1):65-91.
- Jensen, M.C. 1968. "The performance of mutual funds in the period 1945–1964." *The Journal of Finance* 23(2):389-416.
- Kerscher, A.N., and W. Schäfers. 2015. "Corporate social responsibility and the market valuation of listed real estate investment companies." *Zeitschrift für Immobilienökonomie 1*(2):117-143.
- Kok, N., and M. Jennen. 2012. "The impact of energy labels and accessibility on office rents." *Energy Policy* 46:489-497.
- Lee, C.L., R. Reed, and J. Robinson. 2007. "Momentum profits in Australian listed property trusts." *Pacific Rim Property Research Journal 13*(3):322-343.

- Maignan, I., O.C. Ferrell, and L. Ferrell. 2005. "A stakeholder model for implementing social responsibility in marketing." *European Journal of Marketing 39*(9/10):956-977.
- McDonald, T., and S. Morling. 2012. "The Australian economy and the global downturn Part 1: Reasons for resilience." https://treasury.gov.au/publication/economic-roundup-issue-2-2011/economic-roundup-issue-2-2011/the-australian-economy-and-the-global-downturn-part-1-reasons-for-resilience. Accessed 15 July 2019.
- Newell, G. 2008. "The strategic significance of environmental sustainability by Australian-listed property trusts." *Journal of Property Investment and Finance 26*(6):522-540.
- Newell, G. 2013. "REITs in Australia: Moving forward from the GFC." In Sotelo, R. and S. McGreal (Eds.), *Real estate investment trusts in Europe: Evolution, regulation, and opportunities for* growth (pp. 69-76). Berlin, Heidelberg, Germany: Springer.
- Newell, G., and C.L. Lee. 2012. "Influence of the corporate social responsibility factors and financial factors on REIT performance in Australia." *Journal of Property Investment and Finance* 30(4):389-403.
- Newell, G., J. Macfarlane, and R. Walker. 2014. "Assessing energy rating premiums in the performance of green office buildings in Australia." *Journal of Property Investment and Finance 32*(4):352-370.
- Newell, G., H.W. Peng, and S. Yam. 2011. "Assessing the linkages between corporate social responsibility and A-REIT performance." *Pacific Rim Property Research Journal 17*(3):370-387.
- Newey, W.K., and K.D. West. 1987. "A simple, positive semi-definite, heteroskedasticity and autocorrelation consistent covariance matrix." *Econometrica* 55(3):703-708.
- Orlitzky, M., F.L. Schmidt, and S.L. Rynes. 2003. "Corporate social and financial performance: A metaanalysis." *Organization Studies* 24(3):403-441.
- Peterson, J.D., and C.H. Hsieh. 1997. "Do common risk factors in the returns on stocks and bonds explain returns on REITs?" *Real Estate Economics* 25(2):321-345.
- Pivo, G. 2008. "Exploring responsible property investing: A survey of American executives." *Corporate Social Responsibility and Environmental Management 15*(4):235-248.
- Porter, M.E., and M.R. Kramer. 2006. "Strategy and society: The link between competitive advantage and corporate social responsibility." *Harvard Business Review* 84(12):78-92.
- Shleifer, A., and R.W. Vishny. 1997. "A survey of corporate governance." *The Journal of Finance* 52(2):737-783.
- SMH. 2009. "Govt unveils \$42b stimulus." https://www.smh.com.au/business/govt-unveils-42b-stimulus-20090203-7w6v.html. Accessed 15 July 2019.
- Soytas, M.A., M. Denizel, and D. Durak Usar. 2019. "Addressing endogeneity in the causal relationship between sustainability and financial performance." *International Journal of Production Economics* 210(April):56-71.
- Stockland. 2017. "Sustainability strategy: Delivering shared value." https://www.stockland.com.au/about-stockland/sustainability/strategy. Accessed 08 November 2017.
- The Age. 2008. "Rudd unveils \$10.4b stimulus plan." https://www.theage.com.au/business/rudd-unveils-104b-stimulus-plan-20081014-50a6.html?page=fullpage. Accessed 15 July 2019.
- Westermann, S., S. Niblock, and M. Kortt. 2018a. "A review of corporate social responsibility and listed property performance studies: An Australian perspective." *Economic Papers* 37(1):92-110.
- Westermann, S., S. Niblock, and M. Kortt. 2018b. "Corporate social responsibility and the performance of Australian REITs: A rolling regression approach." *Journal of Asset Management 19*(4):222-234.
- Wiley, J.A., J.D. Benefield, and K.H. Johnson. 2010. "Green design and the market for commercial office space." *Journal of Real Estate Finance and Economics* 41(2):228-243.
- Zarebski, P., and B. Dimovski. 2012. "Determinants of capital structure of A-REITs and the global financial crisis." *Pacific Rim Property Research Journal 18*(1):3-19.

A-REIT	CSR Strategies	CSR Targets/Initiatives
Stockland Corporation	Stockland's CSR strategy is designed	(i) Providing affordable housing options for first home
	around creating value and aims to	buyers.
	"deliver economic value in a way that	(ii) To continue towards their 2025 target of a 60 per
	also creates value for society by	cent reduction in carbon emissions.
	addressing its needs and challenges" and	(iii) The development of an Environmental
	by attempting to balance the triple	Management System to identify environmental risks
	bottom line for its current and future	and opportunities, along with the appointment of an
	stakeholders (Stockland, 2017, para. 3).	external auditor to conduct a Fraud Risk Review as
		part of the broader governance strategy.
Dexus Property Group	Dexus' CSR strategy is to invest	(i) Philanthropic activities such as the opportunity for
	"responsibly to deliver sustained value to	employees to take a one day paid volunteering leave
	stakeholders" by embracing resilience,	and the appointment of 23 Community Managers to
	liveability and connectivity (Dexus,	facilitate community engagement.
	2017, para. 1). Dexus' sustainability	(ii) To provide 1,000,000 square metres (sqm) of office
	approach is designed around key	real estate with at least a 5-Star NABERS Energy
	objectives and incorporates the	rating and 4-Star NABERS Water rating by 2020.
	management of ESG issues across their	(iii) The reduction of energy consumption by 10 per
	portfolio.	cent by 2020.
GPT Group	GPT's CSR strategy embraces the	(i) The development of a biodiversity measurement
	concept of sustainability and recognizes	tool, which produces practical measures for on-site
	the needs of both current and future	biodiversity.
	generations. GPT Group (2017, para 9),	(ii) To achieve a weighted average NABERS Energy
	asserts that while generating economic	rating of at least 4.5 stars.
	value, they must also consider their ESG	(iii) The reduction of energy intensity by 40 per cent
	impact, and that "[t]he voice of	and emissions intensity by 57 per cent, and an increase
	stakeholder communities and the needs	in recycling rates from 29 per cent to 41 per cent since
	of today's and future generations are at	2005.
	the heart of our decision making. Our	(iv) Green leases and the implementation of ecological
	key decisions across investment,	minimum standards for tenant fit-outs.
	development and operations recognise	
	the interdependence between	
	environment, people and economics."	

# Table 1. Examples of A-REIT CSR strategies and targets/initiatives

Source: Westermann et al. (2018a, pp. 96-98).

#### Table 2. A-REIT sample

		T 1 .	0		Б	C	0 11
A-REIT	Market Cap	Industry	Com	Emp CSP	Env CSP	GOV CSP	Overall CSP
HighCSR ARFIT (04)	(05D mil)	Culegory	CSK	CSK	CSK	CSK	CSK
Stockland Corporation Limited	\$10 541 09	Diversified	68	72	75	68	71
Dexus Property Group	\$8 740 57	Office	68	70	70	67	69
GPT Group	\$8 378 47	Diversified	65	67	72	68	68
Mirvac Group	\$7 558 43	Diversified	63	67	70	67	67
Investa Office Fund	\$2,793,91	Office	60	66	66	63	64
Cromwell Property Group	\$1 714 92	Office	60	66	60	65	63
Combined HighCSR_AREIT	\$39 727 39	6	64	68	69	66	67
$\frac{1}{A v \sigma CSR \ AREIT (O3 \& O2)}$	\$39,121.39	0	01	00	07	00	07
Charter Hall Retail REIT	\$1 710 06	Retail	54	65	65	58	61
BWP Trust	\$1,710.00	Retail	57	60	64	63	61
Charter Hall Group	\$1,075.16	Diversified	57	69	55	60	60
Iron Mountain Incorporated	\$12,543,37	Specialized	61	56	61	53	58
Shopping Centres Australasia Group	\$1 619 20	Retail	50	60	57	61	57
Growthpoint Properties Australia	\$2.001.24	Diversified	52	63	57	51	56
Abacus Property Group	\$1.619.68	Diversified	57	58	53	55	56
Scentre Group	\$23,477.25	Retail	44	55	61	56	54
Goodman Group	\$12,380.72	Industrial	51	54	57	54	54
Westfield Corporation Limited	\$18,453,44	Retail	49	51	63	50	53
Vicinity Centres	\$11.321.74	Retail	50	52	56	51	52
GDI Property Group	\$536.13	Office	55	56	51	45	52
Astro Japan Property Group	\$391.21	Diversified	49	56	49	47	50
Combined AvgCSR AREIT	\$89.881.96	13	53	58	58	54	56
LowCSR AREIT (O1)	4 )	-				-	
Folkestone Education Trust	\$614.99	Specialized	47	48	52	39	47
National Storage REIT	\$722.08	Specialized	43	46	47	44	45
Ingenia Communities Group	\$467.42	Residential	39	40	48	49	44
Arena REIT	\$438.05	Healthcare	42	36	48	41	42
Centuria Industrial REIT	\$526.00	Industrial	38	31	50	38	40
Industria REIT	\$339.28	Industrial	40	30	47	42	40
Hotel Property Investments Limited	\$407.63	Specialized	38	25	48	32	36
Combined LowCSR AREIT	\$3,515.45	7	41	37	49	41	42
No CSR Rating (NCSR)							
Aventus Retail Property Fund	\$910.73	Retail	NCSR	NCSR	NCSR	NCSR	NCSR
Viva Energy REIT	\$1,580.45	Retail	NCSR	NCSR	NCSR	NCSR	NCSR
Generation Healthcare REIT	\$423.32	Healthcare	NCSR	NCSR	NCSR	NCSR	NCSR
Rural Funds Group	\$348.99	Specialized	NCSR	NCSR	NCSR	NCSR	NCSR
Combined NCSR	\$3,263.49	4	NCSR	NCSR	NCSR	NCSR	NCSR
AREIT (Conventional portfolio)							
Combined AREIT	\$136,388,29	30	N/A	N/A	N/A	N/A	N/A

*Notes:* S&P/ASX 300 A-REITs, market capitalizations, industry categories and CSR ratings are reported as of 4 July 2017. CSR ratings range from 0 to 100 (lowest to highest). NCSR is No CSR Rating. N/A is Not Available. Q4, Q3, Q2 and Q1 are overall CSR rating quartiles (highest to lowest, respectively). In this study, an overall CSR score is obtained by providing equal weights to each of the four CSR dimensions and summing the scores accordingly (e.g., 0.25 x *Governance (Gov)* + 0.25 x *Community (Com)* + 0.25 x *Environment (Env)* + 0.25 x *Employment (Emp)*).

Source: S&P Capital IQ, CSRHub and Westermann et al. (2018b, pp. 226-227).

	ASX300	AREIT	HighCSR_AREIT	AvgCSR_AREIT	LowCSR_AREIT
CSR measures					
CSR rating avg.	N/A	47	67	56	42
# of A-REITs	30	30	) 6	13	7
Market cap measure	S				
Market Cap (USD mil)	\$1,189,055.004	\$136,388.290	\$39,727.390	\$89,881.960	\$3,515.450
Market Cap (%)	100%	100%	29.13%	65.90%	2.58%
Market Cap avg. (USD mil)	\$3,963.517	\$4,546.276	\$6,621.232	\$6,913.997	\$502.207
Nominal return perfe	brmance and distribu	tion			
Mean	0.0055	0.0037	0.0019	0.0049	0.0103
Median	0.0104	0.0091	0.0054	0.0119	0.0190
Maximum	0.1752	0.1882	0.1868	0.2037	0.5683
Minimum	-0.2703	-0.5285	-0.5981	-0.4616	-0.5390
Range	-0.4456	-0.7167	-0.7850	-0.6653	-1.1073
Std. Dev.	0.0715	0.0863	0.0924	0.0865	0.1223
Skewness	-0.5432	-2.1270	-2.4168	-1.3887	0.0040
Kurtosis	4.3410	14.0108	16.7215	9.4294	9.6626
Jarque-Bera	14.8928***	696.6659***	1058.211***	245.2548***	221.9498***
p-value	0.0000	0.0000	0.0000	0.0000	0.0000
Obs.	120	120	120	120	120
Notes: This table pr	esents summary statist	ics for the S&P/	ASX 300 index and o	conventional A-REIT	and CSR A-REIT

 Table 3. Summary statistics

portfolios. CSR and Market capitalization measures are reported as of 4 July 2017. Significance: \* 10% level; \* 5% level; \*\*\* 1% level. Source: S&P Capital IQ, CSRHub and Westermann et al. (2018b, p. 228).

Table 4. Carhart four-factor regressions

	ASX300	AREIT	HighCSR_AREIT	AvgCSR_AREIT	LowCSR_AREIT
Alpha	0.0025	0.0077*	0.0038	0.0108*	0.0262**
p-value	0.1863	0.0972	0.4008	0.0545	0.0111
RMRF	1.0187***	1.0007***	1.0435***	0.9619***	1.0717***
p-value	0.0000	0.0000	0.0000	0.0000	0.0000
SMB	-0.2433***	-0.4626**	-0.3915**	-0.5698***	0.1756
p-value	0.0001	0.0104	0.0338	0.0050	0.4804
HML	-0.5524***	-0.4441**	-0.3075	-0.6027**	-0.2472
p-value	0.0000	0.0431	0.1740	0.0156	0.6396
MOM	-0.0009	-0.0289	-0.0580	0.0013	-0.2741
p-value	0.9865	0.7480	0.5722	0.9889	0.2033
GFC	-0.0050	-0.0437***	-0.0351**	-0.0510***	-0.0994***
p-value	0.1852	0.0002	0.0103	0.0001	0.0000
Adjusted R <sup>2</sup>	0.9494	0.6769	0.6013	0.6682	0.5478
Obs.	120	120	120	120	120

*Notes:* This table presents coefficients produced from the Carhart (1997) four-factor model for the S&P/ASX 300 index and conventional A-REIT and CSR A-REIT portfolios. GFC is a dummy variable designed to control for the Global Financial Crisis. *p*-values generated from Newey-West *t*-stats are corrected for standard errors. Significance: \* 10% level; \*\* 5% level; \*\*\* 1% level.

Portfolio	Coefficient	Coefficient +/-	n-value
Alpha	cocypierent		p vanue
AREIT	0.0077	NA	NA
HighCSR AREIT	0.0038	Less than	0.2722
AvgCSR AREIT	0.0108	Greater than	0.3348
LowCSR AREIT	0.0262	Greater than	0.0499**
RMRF			
AREIT	1.0007	NA	NA
HighCSR AREIT	1.0435	Greater than	0.4020
AvgCSR AREIT	0.9619	Less than	0.3889
LowCSR AREIT	1.0717	Greater than	0.3392
SMB			
AREIT	-0.4626	NA	NA
HighCSR_AREIT	-0.3915	Greater than	0.3900
AvgCSR_AREIT	-0.5698	Less than	0.3440
LowCSR_AREIT	0.1756	Greater than	0.0187**
HML			
AREIT	-0.4441	NA	NA
HighCSR_AREIT	-0.3075	Greater than	0.3312
AvgCSR_AREIT	-0.6027	Less than	0.3144
LowCSR_AREIT	-0.2472	Greater than	0.3649
МОМ			
AREIT	-0.0289	NA	NA
HighCSR_AREIT	-0.0580	Less than	0.4157
AvgCSR_AREIT	0.0013	Greater than	0.4062
LowCSR_AREIT	-0.2741	Less than	0.1462
GFC			
AREIT	-0.0437	NA	NA
HighCSR_AREIT	-0.0351	Greater than	0.3118
AvgCSR_AREIT	-0.0510	Less than	0.3310
LowCSR_AREIT	-0.0994	Less than	0.0134**

 Table 5. Carhart four-factor regression coefficient comparisons – A-REIT vs. CSR A-REITs

*Notes:* This table presents the direction and significance of the conventional A-REIT portfolio coefficients versus the coefficients of the CSR A-REIT portfolios. Coefficients are compared using a one-tailed *t*-test. GFC is a dummy variable designed to control for the Global Financial Crisis. Significance: \* 10% level; \*\* 5% level; \*\*\* 1% level.

Portfoli	io / Coefficient	Portfolio / Coefficient	<i>Coefficient</i> +/-	p-value
Alpha				
	HighCSR_AREIT	LowCSR_AREIT		
	0.0038	0.0262	Greater than	0.0226**
	HighCSR_AREIT	AvgCSR_AREIT		
	0.0038	0.0108	Greater than	0.1645
	AvgCSR_AREIT	LowCSR_AREIT		
	0.0108	0.0262	Greater than	0.0924*
RMRF				
	HighCSR_AREIT	LowCSR_AREIT		
	1.0435	1.0717	Greater than	0.4409
	HighCSR_AREIT	AvgCSR_AREIT		
	1.0435	0.9619	Less than	0.3046
	AvgCSR_AREIT	LowCSR_AREIT		
	0.9619	1.0717	Greater than	0.2439
SMB				
	HighCSR AREIT	LowCSR AREIT		
	-0.3915	0.1756	Greater than	0.0333**
	HighCSR AREIT	AvgCSR AREIT		
	-0.3915	-0.5698	Less than	0.2546
	AvgCSR AREIT	LowCSR AREIT		
	-0.5698	0. 1756	Greater than	0.0100***
HML				
	HighCSR AREIT	LowCSR AREIT		
	-0.3075	-0.2472	Greater than	0.4581
	HighCSR AREIT	AvgCSR AREIT		
	-0.3075	-0.6027	Less than	0.1879
	AvgCSR AREIT	LowCSR AREIT		
	-0.6027	-0. 2472	Greater than	0.2705
МОМ				
	HighCSR AREIT	LowCSR AREIT		
	-0.0580	-0.2741	Less than	0.1817
	HighCSR AREIT	AvgCSR AREIT		
	-0.0580	0.0013	Greater than	0.3321
	AvgCSR AREIT	LowCSR AREIT		
	0.0013	-0.2741	Less than	0.1186
GFC				
	HighCSR AREIT	LowCSR AREIT		
	-0.0351	-0.0994	Less than	0.0072***
	HighCSR AREIT	AvgCSR AREIT		
	-0.0351	-0.0510	Less than	0.1918
	AvgCSR AREIT	LowCSR AREIT		
	-0.0510	-0.0994	Less than	0.0294**

Table 6. Carhart four-factor regression coefficient comparisons - CSR A-REITs

*Notes:* This table presents the direction and significance of high, average and low-rated CSR A-REIT portfolio coefficients. Coefficients are compared using a one-tailed *t*-test. GFC is a dummy variable designed to control for the Global Financial Crisis. Significance: \* 10% level; \*\* 5% level; \*\*\* 1% level.



Figure 1. A-REIT performance before, during and after the GFC, 2007 to 2016

Notes: Key events 1-8 are discussed in-text.

Source: S&P Capital IQ.

## Figure 2. CSRHub dimensions

Employees	Community	Environment	Governance
Compensation &	Community	Energy & Climate	Board
Benefits	Development &	Change	
	Philanthropy		
Diversity & Labour	Product	Environment Policy &	Leadership Ethics
Rights		Reporting	
Training, Health &	Human Rights & Supply	Resource Management	Transparency &
Safety	Chain	_	Reporting

*Notes:* CSR scores range from 0-100 for each dimension (e.g., *Employees, Community, Environment* and *Governance*), with zero being the lowest score possible and 100 being the highest. In this study, an overall CSR score is obtained by providing equal weights to each of the four CSR dimensions and summing the scores accordingly.

Source: CSRHub.