

Corporate Diversification of Real Estate Investment Trusts (REITs) In A Post-Pandemic World: Lessons from Malaysia and Singapore

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Abstract: Research Question: This study explores the impact of corporate diversification on the financial performance of Real Estate Investment Trusts (REITs) in Malaysia (M-REITs) and Singapore (S-REITs), with a focus on the moderating influence of growth opportunities. **Motivation:** The motivation behind this research stems from the observed divergence in diversification strategies among REITs in different countries. While diversified REITs are prevalent in Malaysia, specialized REITs dominate the United States and Japan. This study seeks to shed light on the implications of corporate diversification for REITs in the Southeast Asian context and highlight the role of growth opportunities in shaping their financial performance. **Idea:** The core idea of this research is to examine the relationship between corporate diversification and financial performance in the context of M-REITs and S-REITs. We employ the Entropy Index to measure corporate diversification and the Dynamic System Generalized Method of Moments (DSGMM) to analyze data from 2009 to 2020, encompassing the pre and during COVID-19 pandemic period. **Data:** We collect and analyze data from leading REITs in Malaysia and Singapore, representing the ASEAN region's REIT market. Notably, we exclude Thailand, Vietnam, and Indonesia due to their nascent REIT markets. The dataset covers critical aspects of corporate diversification and uses the PI as a performance measure. **Method/Tools:** Our empirical framework encompasses the DSGMM approach to evaluate the relationship between corporate diversification and financial performance. We also explore the moderating effect of growth opportunities on this relationship. **Findings:** Our findings reveal that corporate diversification significantly affects the financial performance of REITs, with a focus on PI as the performance measure. However, when considering Tobin's-Q ratio, the results exhibit variations. While All-REITs and M-REITs demonstrate significance levels ranging from 1% to 10%, S-REITs show different results. Additionally, growth opportunities significantly moderate the impact of corporate diversification on financial performance, as evidenced by All-REITs and S-REITs. Although M-REITs lack sufficient data for strong significance, they also indicate the potential influence of growth opportunities. **Contributions:** This paper contributes to the literature by offering insights into the dynamics of corporate diversification, growth opportunities, and financial

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performance within the M-REITs and S-REITs. The findings underscore the importance of considering these factors when assessing the performance of REITs, particularly in diverse markets like the ASEAN region.

Keywords: Real Estate Investment Trusts, corporate diversification, growth opportunities, financial performance, Malaysia, Singapore.

1. Introduction

Real Estate Investment Trusts (REITs) enable property investors to devise international property investment portfolios (Wilson and Zurbruegg, 2003; Yunus, 2009). REITs assets have gained recognisable attention in capital markets in recent decades, and their development highlights the impact of interaction among REITs assets portfolio. (Rees and Selcuk-Kestel, 2014). REITs emerged in Asia in 2001, with Japan as the market leader, followed by Singapore and South Korea in 2002, Hong Kong in 2003, Taiwan in 2005, and Malaysia in 2006. The first listed property trust on the Kuala Lumpur Stock Exchange (KLSE) was the Arab Malaysian First Property Trust in September 1989; however, there was slow movement (Alias and Soi, 2011). Global REITs have been enjoying significant growth rates from USD 8.9 trillion in 2018 to USD 9.6 trillion in 2019 (Teuben and Neshat, 2020). The world's reaction to the second year of the COVID-19 pandemic has proven that REITs are an attractive alternative to general equities. Among the six significant REITs markets worldwide, the US, Japan, Australia, the UK, and Hong Kong saw REITs outperforming the general equities index, with Singapore being the only exception (Yeung, 2022). Previous studies indicated that indirect ownership of REITs and alternative assets could reduce the risk factor in a diversified portfolio of assets (Chan *et al.*, 1990; Kuhle *et al.*, 1986; Titman and Warga, 1986; Goebel and Kim, 1989; Glascock, 1991; Martin and Cook, 1991; Cheong, 2019). However, the effects on financial performance remain unclear. Generally, REITs consist of various properties such as industrial, office, retail (shopping centres, regional malls, or free-standing retail properties), residential, service apartments, lodging-resorts, healthcare, and self-storage. Such properties have specific advantages, risks, quirks, and different cycles.

Corporate diversification usually happens in different business units; however, diversifications in REITs are generally centred on their portfolios. Diversification strategies influence the performance of REITs. A diversified REIT is more focused on risk management. However, the financial performance of such firms is more vital for the continued sustainability of REIT firms in the long run. Accordingly, a diversified firm would have more than one business unit in different industries or the same industry, although diversification mainly concerns a range of product portfolios held by the REIT. Corporate diversification in REITs defines the amount of investments in the business units. However, a steady flow of investments outside the existing portfolio must provide unique business strengths and protect the firms' resources to maintain its competitive advantage and profits. Therefore, corporate diversification ensures long-term sustainability, and discovering the internal fit through the structure of REITs is necessary. In recent years, corporate diversification strategies in REITs have been an effective way for firms to gain a highly competitive advantage. In other words, adopting corporate diversification strategies enable REITs to survive or sustain corporate profits. Over the past 10 years, REITs have become more aggressively involved in various property investments to maintain their competitive advantage. Overall, previous studies on REITs, corporate diversification, and financial performance were relatively scarce, especially in developing countries, and scholars have not reached any consensus on the issue. Nevertheless, REITs seem to garner much attention in the current pandemic, but the impact of corporate diversification is still unclear. The benefits remain debatable, implying that the operation of REITs often create several dilemmas. Generally, REIT firms have small market capitalization (Cheong *et al.*, 2020), and it is tough for them to engage in diversification. A

diversified REIT depends on the REIT mandate, expertise, and size; however, many REITs have chosen not to diversify across sectors but rather are involved in portfolio diversification. National Association of Real Estate Investment Trusts (NAREIT) in the US Handbooks (1997–2006) reported that 90% of equity REITs specialise in one property. Asia's leader in REITs, Japan, also showed a similar trend with the US. However, in Malaysia, the trend is not the same. M-REITs are more diversified whereas S-REITs are more specialised.

REITs have been very aggressive in implementing diversification strategies over the past 10 years. According to Newell (2020), real estate markets in Asia are exciting, dynamic, and unique and are becoming increasingly vital as these emerging markets mature due to economic growth. The firms' financial performance closely influences the corporate diversification in REIT firms. The majority of researchers reported that corporate diversification in REIT firms positively impacts the firms' financial performance. Although the REIT mandate, expertise and size have imposed limitations on the REITs capacity to diversify, the corporations, on the other hand, have achieved this by internally diversifying into real estate sub-sectors; for example, the retail and industrial sectors. Diversification enables REITs to spread risk to gain favourable financial performance; however, its effect on the financial performance of REITs in the ASEAN region is not yet defined.

This study examines the issue of corporate diversification, its key determinants, and its moderating effect on growth opportunities and financial performance of M-REITs and S-REITs using the market data from 2009 to 2020. The Entropy Index and the DSGMM are utilized in this study. The data obtained are divided into pre-COVID-19 (2009–2018) and during the pandemic (2009–2020). This research article is followed by the literature review, methodology, findings and conclusion.

2. Background of Corporate Diversification and Research Hypotheses

Some scholars have conducted corporate diversification research among general industries in developing countries based on randomly selected samples of countries in Asia. For example, Lins and Servaes (2002) studied Malaysia, South Korea, Hong Kong, Thailand, India, Singapore, and Indonesia. The results revealed that the performance of non-diversified firms was much better than diversified corporate firms. Daud *et al.* (2009), in their study of Malaysia encompassing 70 firms from 2001 to 2005, concluded that diversification yields poor financial performance compared to non-diversified firms. However, the sample size was too small to represent all Malaysian firms. In Malaysia, corporate diversification continues to represent a fundamental organisational structure. Some two-thirds of Malaysian firms are diversified. The research further concluded that related and unrelated diversification positively affects performance, but the diversification strategies must be dominant (focused) and cannot be too broad (Chan *et al.*, 2019).

Capozza and Seguin (1999) examined the impact of diversification on the value of REITs. They concluded that diversification positively affects performance but caused higher administrative expenses. Webb and Rubens (1987) discovered that 61% of diversified REITs took place among institutional investors holding the majority power. Louargand (1992) echoed that the trend had increased to 89%. Benefield *et al.* (2009) stated that diversified REITs outperformed their specialised property counterparts. Zahavi and Lavie (2013) analyzed the relationship between corporate diversification strategies and revenue growth based on a study of 156 software firms in the US from 1990 to 2001. Accordingly, a negative association was discovered with the related diversification due to the homogeneous products offered and the inability to differentiate the main product from the rest which caused the reduction in revenue. The study also demonstrated that an increase in corporate-related diversification results in adverse outcomes on financial performance. It causes diseconomies of scope and diminished the competitive advantage over other businesses in the industry. As

a result, the overall financial performance of firms had decreased. Hardin *et al.* (2017) revealed that motivated REIT institutional investors often monitored managers to improve operating performance and increase the firms' value. In addition, Newell and Marzuki (2016, 2018) tested the UK and German markets, whereas Newell *et al.* (2013) studied the French REITs and concluded that limited portfolio diversification improved the firms' performance. Leone and Ravishankar (2018) investigated whether sector-region diversification was still a viable strategy for enhancing portfolio-specific efficiency in the UK. They reported that empirically it lowers the variability of portfolio efficiency levels over time. Feng *et al.* (2019), in their study of equity REITs from 2010 to 2016, discovered that diversified REITs fare better when they are less diversified. Candelon *et al.* (2021) investigated the real estate market returns dataset covering 16 member countries of the Organisation for Economic Co-operation and Development (OECD). They reported diversification losses in real estate portfolios from 1999 to 2018.

Hypothesis 1. A corporate diversification strategy has a negative association with the financial performance of REIT firms.

Generally, firms value data differently by virtue of their assets and consider diversification with more growth opportunities. According to Bernardo and Chowdhry (2002), new firms tended to specialise based on the US firms from 1958 to 1988 due to a lack of growth opportunities. It might not be worthwhile for them to undertake additional or new investments even after considering valuable information. Danbolt *et al.* (2002) examined the data of 278 large UK companies from 1987 to 1995 and found that the firms' growth opportunities influenced their market value and financial performance. Ferris *et al.* (2002) discovered that growth opportunities accounted for corporate diversification discounts based on 121 Singapore firms from 1987 to 1996. Stowe and Xing (2006) had analysed 230 diversified firms from 1981 to 1997 that revealed the performance of diversified firms were better than non-diversified firms on average. The researchers also found that growth opportunities were different for each firm and may have influenced corporate diversification strategies.

Choi *et al.* (2015) conducted a study focused on family-controlled manufacturing companies in Korea from 1998 to 2007. The research showed that family ownership encouraged growth opportunities. Family owners who own a large share of their firm have greater motivation to achieve growth and protect their family control and goals through diversification strategies to improve the business. Choi *et al.* (2015) also commented that family-controlled firms that made insufficient research and development (R&D) investments did not exploit existing growth opportunities. According to Mackey *et al.* (2017), the new business model created growth opportunities in diversified firms. De Andrés *et al.* (2017) studied 3,558 firms in the US from 1998 to 2014 to measure the fundamental approach of diversification strategies and found that diversification enhanced financial performance through growth opportunities.

Setianto (2020) examined empirically how growth opportunities determine the relationship between corporate diversification and a firm's value in an emerging economy, suggesting that diversification's effect on value will vary across firms and be mediated by the firm's growth opportunities. The research would like to determine the moderating effect of growth opportunities and corporate financial performance.

Hypothesis 2. There is a moderating effect between growth opportunities, REITs, and financial performance.

3. Methods and Measures

In this section, the study had identified appropriate methods for measuring the degree of corporate diversification and the financial performance of REIT firms. The diversification in REIT was focused on portfolio diversification and sector diversification. The research population consisted of public-listed REITs (PLCs) from 2009 to 2020 including pre and during the COVID-19 pandemic. The study utilized samples of M-REIT and S-REIT since the market conditions in Singapore and Malaysia were able to represent the 5-ASEAN markets. The REIT markets were nascent in Thailand, Vietnam, and Indonesia, hence excluded from the analysis. (Mark, 2017).

Over the last decade, corporate strategies have rapidly changed to adapt to global economic conditions. This study examined ten years of data from 2009 to 2018. Corporate diversification was calculated based on the Entropy Index using revenues generated from each business unit derived from the company's annual reports. The data concerning revenue was cherry-picked while some were obtained through Refinitiv Datastream. The sampling period selection relied on the global economic situation after the major financial crisis and any new conditions that may have arisen. The sample used was consistent with other scholarly studies such as Singh *et al.* (2003) and Afza *et al.* (2008).

The specific method of measurement utilised was the DSGMM. The Price Index (PI) and Tobin-Q ratios were used as dependent variables for Models 1 and 2. The DSGMM was the central estimation that combines equations in levels and equations in the first difference to estimate the parameters. In other words, the DSGMM utilizes more information to evaluate the parameters. Besides, it is proven to be one of the best methods to estimate dynamic panel models in the presence of firm-specific effects and the endogeneity of some explanatory variables.

3.1 Measurement of The Degree of Diversification

The division or segments of business units into which the firm has ventured draws out the essential conceptual and methodological diversification. However, the researchers recognised that the number of business units to measure diversification was imperfect. The failure to attach equal weight to all business units and to the revenue generated by each business unit or segment may cause errors. This equal-weighted value may have influenced the measurement of corporate diversification.

The degree of corporate diversification measures the extent to which each business unit has diversified based on the revenue contributed by each business unit to the firms' total revenue. Conversely, it comprises a corporate diversification strategy and involves assessing the relatedness or similarity between business segments. The degree of corporate diversification also refers to diversity per se, i.e., without further specifying this diversity. In addition, the type of diversification relates to the logic of business product line link to the business portfolios both related or unrelated in comparison to the firms' existing business line.

Krivokapić *et al.* (2017) used the Entropy Index to measure corporate diversification in the insurance industry of the Republic of Serbia. In Malaysia, Ooi *et al.* (2014) used it to measure corporate diversification in the hotel industry, whereas; Doaei *et al.* (2014) used entropy to test diversification in the manufacturing industry.

The total Entropy Index measured in this study is shown below:

$$E = \sum_{i=1}^n P_i \ln \frac{1}{p_i} ; 0 < H \leq 1 \quad (1)$$

$\ln \frac{1}{p_i}$ is the weight of each business unit within the same two-digit industry code. P_i is the revenue contributed by each business unit or segment by percentage, and n measures the

number of business units in a particular firm. The Entropy Index considers both the revenue contributed by each segment in percentage and how relatively significant these entire segments are to the firm based on revenue contribution. It also represents diversification in a particular firm. Corporate diversification is high when the Entropy Index records a high reading. A higher degree of corporate diversification implies that the firm is more diversified.

The higher the Entropy Index, the higher is the degree of diversification. When the Entropy Index is 0, it represents a non-diversified firm. For example, if a firm has only one business unit, the Entropy Index is 0. In contrast, diversified Firm A has two business units and generates 50% revenue from each business unit. In this case, the Entropy Index provides a value of 0.69. If Firm B diversifies with two business units, but the revenue weighting is 0.7 and 0.3, respectively, the Entropy Index is 0.61. Firm A is more diversified than Firm B, although they diversified into two business units. Therefore, the modified Entropy Index helps capture the degree of diversification of REITs.

However, the number of business units or segments of a firm does not determine the degree of diversification. Previous research utilized the number of business units to assess diversification but could not measure its degree. This paper covers the research gap by introducing the Entropy Index to measure corporate diversification. Table 1 shows the number of business units that are not reflective of their degree of diversification.

Table 1: Diversification and entropy index

Type of Firm	# BU	BU1	BU2	BU3	BU4	EI
Firm SB	1	1				0
Firm A	2	0.9	0.1			0.3251
Firm B	2	0.7	0.3			0.6109
Firm C	2	0.5	0.5			0.6931
Firm D	4	0.9	0.05	0.025	0.025	0.4291

Notes: # BU – Number of Business units. BU1 – Business Unit One. BU2 – Business Unit Two. BU3 – Business Unit Three. BU4 – Business Unit Four. Firm SB – Single Business Firm or Non-Diversified Firm. Firm A – The firm diversified more into BU1 (90%) compared to BU2 (10%). Firm B – The firm diversified more into BU1 (70%) compared to BU2 (30%). Firm C – The firm diversified equally into two business units (50%). Firm D – The Firm diversified into BU1 (90%), BU2 (5%), BU3 (2.5%) and BU4 (2.5%) compared to Firm A, EI Firm D 0.4291 more compared to Firm A 0.3251 concluded that Firm D more diversified.

In Table 1, BU refers to the number of business units. BU1 refers to one business unit, and BU2 refers to two business units. The figure under each BU is the percentage of revenue contributed by the business unit to the firm. The number of business units cannot determine the degree of diversification. Based on Table 2, Firm A, B, and C diversified into two business units; however, they are not the same in how the firm diversification as the Entropy Index values are 0.3251, 0.6109, and 0.6931, respectively. A higher Entropy Index indicates a greater degree of diversification. In this example, Firm C is more diversified than Firm B, and Firm B is more diversified than Firm A.

Another example would be Firm D diversified into four business units, and Firm C diversified into two. Although Firm C only diversified into two business units, it is more diversified than Firm D, with Entropy Index (EI) 0.6931 more than EI 0.4291. However, if the degree of diversification were based on the number of business units, Firm D, with four business units, would be more diversified than Firm C. This is not the actual situation at the firm's level. Based on the Entropy Index, Firm C is more diversified with a value of 0.6931, which is higher than the value of Firm D at 0.4291. Thus, the Entropy Index determines the degree of diversification and accurately measures corporate diversification.

3.2 Measurement of Independent Variables

The stock market PI is based solely on share price movements and Tobin-Q ratios measure the market value of the financial performance of REITs being selected for the analysis

(Parker, 2012). Acaravci (2015) pointed out that growth opportunity affects the capital structure that supports the trade-off theory. The growth opportunity is vital in pursuing diversification and influencing financial performance. Without growth opportunities, firms will not expand, and competitive firms will overtake existing ones. (Oberhofer and Pfaffermayr, 2013; Gupta *et al.*, 2013). A firm's growth affects its plans (Eshima and Anderson, 2017) and these have been studied by other scholars such as Fajaria *et al.* (2018) and Sterk *et al.* (2021).

3.3 Control Variables

According to prior research, control variables that affect corporate diversification and financial performance are free cash flow, firm size, and dividend yield. The firm's free cash flow and size have positively influenced its profitability. Large companies tend to exploit economies of scale and enjoy better technology utilisation than smaller firms. Such big firms can also achieve better corporate diversification and larger market shares. For firms to obtain better access to finance, their size is positively related to their financial performance (Majumdar and Chhibber, 1999; Jermias, 2008). In addition, Sing (2007) discovered that significant fund size, on average, provided investors with superior returns.

Lang and Shulz (1994) proposed that corporate diversification decreases financial performance as the firm's size becomes more significant. Sarkar and Sarkar (2000) detected that large companies lack operational efficiency due to mismanagement. This study logarithmically transforms the total assets to control the size effect by reducing the probability of extreme observations that may lead to biased findings. According to Zeitun and Tian (2014), the size of a firm directly influences its financial performance because size affects the ability to handle a competitive market. Larger firms obtain financing easier than smaller firms. Generally, smaller firms cannot expand or diversify their business, thus reducing their financial performance (Sengupta, 1998). Omar and Simon (2011) used assets as a proxy for measuring the extent of corporate diversification that entails more comprehensive information to facilitate managerial decision-making and control of operations. The fit and size of firms as a measurement of financial performance is highly skewed and may affect correlation with other variables. Logarithm transformation reduces the size effect. Johnson *et al.* (1997) supported the firm size effect and mentioned that it becomes a significant factor for firms to take advantage of the market.

The second set of control variables is the dividend yield. Yu (2021). found that firms that increase dividend payments due to the controlling shareholders' demand subsequently have more debt financing and poorer firm performance; as such, the researchers control the dividend yield. Ali and Hegazy (2022) used a large sample of Indian firms from 1999 to 2018, reported that dividend changes trigger higher stock returns. As posited by the dividend signalling theory, the researchers would like to control the dividend yield for the research.

3.4 Model Specification

As shown below, this study had adopted the Chan *et al.* (2017) model to test the growth opportunities and the moderating effect of corporate diversification and financial performance. The dataset is divided into two panels; Panel 1 –All-REIT, Panel 2 – M-REIT, and Panel 3 –S-REIT.

Corporate diversification, growth opportunities, and the financial performance of REITs

$$PI_{it} \text{ or Tobin-}Q = \beta_{1it} + \beta_{2it} EI_{it} + \beta_{3it} GOpp_{it} + \beta_{4it} FCF_{it} + \beta_{5it} Size_{it} + \beta_{6it} DY_{it} + \varepsilon_{it} \quad (2)$$

Growth opportunity as a moderator, corporate diversification and the financial performance of REITs

$$PI_{it} \text{ or Tobin-Q} = \beta_{1it} + \beta_{2it} EI_{it} + \beta_{3it} GOpp_{it} + \beta_{4it} GOpp_EI_{it} + \beta_{5it} FCF_{it} + \beta_{6it} Size_{it} + \beta_{7it} DY_{it} + \varepsilon_{it} \quad (3)$$

where:

- PI_{it} = PI refers to the financial performance measured by the price index;
 $Tobin-Q$ = Tobin-Q refers to the financial performance measured by the Tobin-Q;
 EI_{it} = Entropy Index measures the corporate diversification;
 $GOpp_{it}$ = The growth rate of the firm measures *growth opportunity*;
 $GOpp_{it_EI}$ = *Growth Opportunity* intercepts with diversification to measure any moderating effect of *Growth Opportunity*;
 FCF_{it} = Free cash flow = Net cash from operating activities- Capital expenditures;
 $SIZE_{it}$ = Control variables – size, using logarithmically transformed total assets to control the size-dependent variables; and
 DY_{it} = Control variables- Dividend Yield is used to control the dividend effect of dependent variables.

4. Data Findings and Analysis

4.1 Descriptive Statistics

The research dataset included firms in ASEAN with 279 observations throughout 10 years; pre-crisis and including the COVID-19 pandemic from 2009 to 2020 using cherry-picking method and based on Refinitiv Datastream as shown in Table 2 and Table 3.

Table 2: Number of REITs companies by country

No.	M-REIT	Sector	Market Cap	
			2018 RM ('000)	2020 RM ('000)
1	AL-AQAR HEALTHCARE REIT	Diversified	960,000	853,740
2	AMANAHA HARTA TANAH PNB	Diversified	171,600	220,000
3	AMANAHRAYA REIT	Diversified	470,040	381,190
4	AMFIRST REIT	Diversified	411,841	291,721
5	ATRIUM REIT	Diversified	135,199	300,800
6	AXIS REIT	Specialised	1,930,165	2,720,000
7	CAPITAMALLS MALAYSIA TRUST	Specialised	2,064,600	1,250,000
8	HEKTAR REIT	Diversified	512,776	223,990
9	KLCC PROPERTY HOLDINGS	Specialised	13,828,900	11,970,000
10	MRCB-QUILL REIT	Diversified	1,136,090	598,550
11	SUNWAY REIT	Diversified	5,212,788	4,860,000
12	TOWER REIT	Diversified	342,200	811,800
13	UOA REIT	Diversified	1,035,100	783,690
14	YTL HOSPITALITY REIT	Specialised	1,994,135	1,550,000
15	PAVILION REIT.TST. UTS.	Specialised	4,980,196	4,567,961

Table 2: Cont.

No.	S-REIT	Sector	Market Cap	
			2018 SGD\$ ('000)	2020 SGD\$ ('000)
1	AIMS AMP CAPITAL INDUSTRIAL REIT	Specialised	929,500	1,026,000
2	ASCENDAS REIT	Diversified	7,819,105	12,552,000
3	ASCOTT RESIDENCE TRUST	Specialised	2,337,800	3,242,000
4	CAPITALAND INTEGRATED COMMERCIAL TRUST	Diversified	13,046,000	13,746,000

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5	CAPITAMALL TRUST	Diversified	8,332,400	13,280,000
6	CAPITARETAIL CHINA TRUST MANAGEMENT LIMITED	Diversified	9,550	1,990,000
7	CDL HOSPITALITY TRUSTS	Specialised	360,248	1,480,000
8	ESR-REIT	Specialised	1,616,800	1,950,000
9	FIRST REIT (healthcare)	Specialised	776,700	189,700
10	FORTUNE REIT	Diversified	1494000	2759100
11	FRASERS CENTREPOINT TRUST	Diversified	3,016,265	3,960,000
12	FRASERS COMMERCIAL TRUST	Diversified	1,308,416	1,463,900
13	KEPPEL REIT	Diversified	2,154,892	4,180,000
14	LIPPO MALLS INDO RETAIL TRUST	Specialised	520,500	379,830
15	MAPLETREE LOGISTICS TRUST	Diversified	3,826,986	8,690,000
16	PARKWAY LIFE REIT	Diversified	1,591,160	3,150,000
17	STARHILL GLOBAL REIT	Specialised	1,406,877	1,440,000
18	SUNTEC REIT	Specialised	4,754,000	4,930,000

Table 3: Descriptive statistics of M-REITs and S-REITs from 2009 to 2018

Variable	Obs	Mean	Std. Dev.	Min	Max
PI	300	2468.252	836.1732	875.8941	3568.01
Tobin-Q	300	1.22104	4.046003	0.345	51.72
EI	300	0.363186	0.5755348	0	1.911239
Gopp	300	18.91804	43.45613	-76.564	423.819
Gopp_EI	300	6.681596	25.45914	-52.0537	210.2927
FCF	300	-0.09561	0.2417464	-2.387	.499
Size	300	6.334378	0.4439694	5.191655	7.25186
DY	300	6.747167	3.28937	0.85	34.33

Notes: The table displays the analysis of descriptive statistics of corporate diversification and financial performance of REITs within M-REITs and S-REITs from 2009 to 2018. PI = Financial Performance measured by Price Index, EI = Entropy Index, Gopp = Growth Opportunity, FCF = Free Cash Flow, Size = Size, DY = Dividend Yield.

Table 4: Descriptive statistics of M-REITs and S-REITs from 2019 to 2020

Variable	Obs	Mean	Std. Dev.	Min	Max
Variable	Obs	Mean	Std. Dev.	Min	Max
PI	356	2439.185	963.6016	160.8	5250.26
Tobin-Q	356	1.807065	6.393764	0.054	55.61
EI	356	0.3802152	0.5818824	0	2
Gopp	354	16.41122	42.42689	-76.564	423.819
Gopp_EI	354	6.025543	24.33673	-52.0537	210.2927
FCF	352	-0.1194034	0.6708272	-11.9	0.89
Size	356	6.349228	0.4365226	5.191655	7.260341
DY	356	6.583427	3.138736	0.85	34.33

Notes: The table displays the analysis of descriptive statistics of corporate diversification and financial performance of REITs within M-REITs and S-REITs from 2019 to 2020. PI = Financial Performance measured by Price Index, EI = Entropy Index, Gopp = Growth Opportunity, FCF = Free Cash Flow, Size = Size, DY = Dividend Yield.

4.2 Corporate Diversification and Financial Performance of REITs In Malaysia and Singapore

The analysis concluded that corporate diversification impacts the financial performance of REITs in Malaysia and Singapore. Based on Table 5, financial performance measured by PI with a coefficient value of 1935.76 and a Z-value of 4.7 were significant at the 1% level.

The control variable i.e. Growth Opportunity (Gopp) was only significant during the COVID-19 pandemic with a coefficient value of 1.35932 and a Z-value of 7.70 which were significant at the 1% level and negatively correlated to the financial performance of REITs. Free Cash Flow (FCF) with a coefficient value of 48.13183 and a Z-value of 4.63 were significant at the 1% level and positively related to the financial performance of REITs. FCF is not significant after including crisis data. The size effect had a coefficient value of 0.1484675 at a Z-value of 35.75. In contrast, the pre-COVID-19 crisis period, reflected a

dividend yield at the coefficient value of -0.0173772 and a Z-value of -9.03 , which were significant at the 1% level. The size coefficient value was 242.8282 , at a Z-value of 29.31 . In contrast, the dividend yield coefficient value of -33.98167 and the Z-value of -24.28 were significant at the 1% level which covered the COVID-19 pandemic period. Both the size effect and dividend yield were significant at the 1% level.

Table 5: Corporate diversification and financial performance (PI) of REITs in Malaysia and Singapore

IV/DV	Pre-COVID-19 period (2009-2018)			Including COVID-19 period (2009-2020)		
	All-REIT	M-REIT	S-REIT	All-REIT	M-REIT	S-REIT
PI L1	0.222613	0.4998259	-.1143068	.6524606	.5373517	.314612
	16.43***	25.00***	-9.45***	128.33***	4.10***	9.23***
EI	1935.759	175.6367	-1189.465	-864.008	803.7831	-1309.343
	4.7***	2.32**	-2.32**	-7.70***	1.83*	-4.43***
Gopp	-0.9403875	-1.931812	-2.536105	1.35932	-2.18475	-.0987541
	-3.25***	-9.01***	-6.76***	7.96***	-0.26	-0.21
FCF	48.13183	82.43556	-290.1218	12.40273	122.2211	-1100.868
	2.38**	4.63***	-2.46**	0.60	1.77*	-3.70***
Size	318.3245	148.3731	682.3308	242.8282	8.151276	481.5593
	45.04***	13.5***	22.67***	29.31***	0.30	14.72***
DY	-76.07916	-2.24965	-56.15768	-33.98167	12.26525	-70.30281
	-12.38***	-0.31	-6.16***	-24.28***	0.53	-7.38***
Wald chi2	4793.64	55606.45***	3599.37	96683.18***	772.80***	34645.39***
estat abond	-3.2506***	-2.5506**	-3.5935***	-2.9991***	-1.4435	-2.2657**
	-1.4827	-3.0476	-3.0625***	-.06892	-.33804	-1.1677
estat sargan	30.27921	12.48209	17.89692	29.71813	7.845909	17.94378
# of obs	279	117	162	322	133	189
# of instruments	28	21	21	28	45	32

Notes: Asterisks indicate significance at 10% (*), 5% (**), and 1% (***). The table displays the analysis of corporate diversification and financial performance M-REITs and S-REITs. PI = Financial Performance measured by Price Index, EI = Entropy Index, Gopp = Growth Opportunity, FCF = Free Cash Flow, Size = Size, DY = Dividend Yield.

Looking at the pre-COVID-19 period, M-REITs displayed an Entropy Index (EI) coefficient value of 175.6367 and a Z-value of 2.32 that were significant at the 5% level. In contrast, during the pandemic, the EI coefficient value was 803.7831 with a Z-value of 1.83 that were significant at the 10% level. These were all positively related to the financial performance of the REITs measured by the PI.

The control variable i.e. Growth Opportunity (Gopp) showed a coefficient value of -1.931812 and a Z-value of -9.01 which were significant at the 1% level and negatively correlated to the financial performance of M-REITs in the pre-COVID-19 period. However, there was insufficient data to measure the Growth Opportunity (Gopp) significance on the financial performance of M-REITs during the pandemic. As for market values, the Tobin-Q ratios were also not significant for both conditions.

The FCF showed a coefficient value of 82.43556 and a Z-value of 4.63 which were significant at the 1% level in the pre-COVID-19 period and these were positively related to the financial performance of M-REITs. The FCF remained significant even during the pandemic at the 10% level. Further tests on market values (Tobin-Q ratios) revealed that they were significant at the 5% and 10% level, corresponding to the pre-COVID-19 period as well as during the pandemic respectively.

The size effect reflected a coefficient value of 148.3731 and a Z-value of 13.5 which were significant at the 1% level. However, there was insufficient data to measure the size effect significance on the financial performance of M-REITs during the pandemic. The size effect is insignificant for both conditions under the market value (Tobin-Q ratio) analysis. There was insufficient data to measure the dividend yield significance on the financial performance

of M-REITs using the PI and Tobin-Q model. The control variable i.e. Growth Opportunity (Gopp) with a coefficient value of -1.931812 and a Z-value of -9.01 were significant at the 1% level and were negatively correlated to the financial performance of M-REITs in the pre-COVID-19 period.

In Singapore, the Entropy Index (EI) reflected a coefficient value of -1189.465 pre-COVID-19 and -1309.343 during the crisis and had a Z-value of -2.32 and -4.43 which were significant at the 5% and 1% level measured by the PI. The analysis concluded that corporate diversification had a negative impact on the financial performance of S-REITs.

The control variable i.e. Growth Opportunity (Gopp), demonstrated a coefficient value of -2.536105 and a Z-value of -6.76, which were significant at the 1% level and negatively correlated to the financial performance of S-REITs. However, there was insufficient data to support the Growth Opportunity (Gopp) significance on the financial performance of S-REITs during the pandemic.

The FCF with a coefficient value of -290.1218 and a Z-value of -2.46 were significant at the 5% level and were negatively correlated to the financial performance of S-REITs in the pre-COVID-19 period. Nevertheless, FCF remained significant at 1% level during the crisis period. In addition, the size effect was significant at the 1% level for both conditions. The size effect coefficient value was 682.3308 in the pre-COVID-19 period, with a Z-value of 22.67 which were are significant at the 1% level. During the crisis period, the size effect coefficient value was 481.5593 with a Z-value of 14.72 which were also significant at the 1% level. The dividend yield coefficient value of -56.15768 and a Z-value of -6.16 were significant at a 1% level for the pre-COVID-19 period. However, the data did not reveal the significance of the dividend yield on the financial performance of S-REITs during the crisis period.

Table 6: Corporate diversification and financial performance (Tobin-Q ratios) of REITs in Malaysia and Singapore

IV/DV	Pre-COVID-19 period (2009-2018)			Including COVID-19 period (2009-2020)		
	All-REIT	M-REIT	S-REIT	All-REIT	M-REIT	S-REIT
Tobin-Q L1	.127101	0.3256299	0.0776618	.6524606	.5373517	.396307
	11.22***	3.95***	2.34**	128.33***	4.10***	17.91***
EI	-0.661838	-1.1594979	0.0902428	-864.008	803.7831	.2411786
	-3.18***	-1.57	0.99	-7.70***	1.83*	0.13
Gopp	-0.000837	.0005423	-0.0005446	1.35932	-.218475	-.0089159
	-0.64	0.96	-2.15**	7.96***	-0.26	-1.80*
FCF	.0118276	.0524429	0.0027784	12.40273	122.2211	1.340935
	0.64	2.12 **	0.03	0.60	1.77*	0.77
Size	0.1484675	0.1052923	0.1478861	242.8282	8.151276	-.0122566
	35.75***	5.08	14.10***	29.31 ***	0.30	-0.07
DY	-.0173772	-.0037782	-0.0179236	-33.98167	12.26525	.250224
	-9.03***	-0.50	-4.39 ***	-24.28***	0.53	1.44
Wald chi2	24414.61	3483.63***	14296.88	96683.18***	772.80***	1253.95***
estat abond	-3.8614***	-2.9146***	-2.6406***	-2.9991***	-1.4435	-1.6159
	1.5605	1.8908 *	.20323	-.06892	-.33804	-0.89946
estat sargan	28.84822	12.06745	12.80777	29.71813	7.845909	6.268129
# of obs	279	117	162	322	133	189
# of instruments	49	49	49	28	45	74

Notes: Asterisks indicate significance at 10% (*), 5% (**), and 1% (***). The table displays the analysis of corporate diversification and financial performance M-REITs and S-REITs. Tobin-Q = Financial performance measured by Tobin-Q ratio, EI = Entropy Index measures the degree of diversification, Gopp = Growth opportunity, FCF = Free Cash Flow, Size = Size, DY = Dividend Yield.

Further tests were conducted to examine the impact of corporate diversification on the financial performance of M-REITs and S-REITs using market value denoted by Tobin-Q ratios. Based on Table 6, financial performance measured by Tobin-Q with an EI coefficient value of -.0661838 and a Z-value of -3.18 were significant at the 1% level for pre-COVID-19

dataset, and an EI coefficient value of -864.008 and a Z-value of -7.70 were significant at a 1% level during the crisis period. Both datasets concluded that EI negatively impacts the financial performance of All-REITs. The control variable i.e. Growth Opportunity (Gopp) was only significant in pre-COVID-19 crisis period with a coefficient value of -.0000837 and a Z-value of -0.64 which were significant at a 1% level and negatively correlated to the financial performance of All-REITs.

The FCF with a coefficient value of 0.118276 and a Z-value of 0.64 were insignificant at the 10% level and positively related to the financial performance of All-REITs. The FCF had no significance on the financial performance of All-REITs during the crisis. The size effect reflected a coefficient value of 0.1484675 and a Z-value of 35.75, whereas the dividend yield had a coefficient value of -.0173772 and a Z-value of -9.03, in the pre-COVID-19 crisis period. Both size effect and dividend yield were significant at the 1% level.

Analysis of financial performance using Tobin-Q ratios by country, indicated that the diversification of M-REITs were not significant in the pre-COVID-19 period. (EI) coefficient value of -0.1594979 and a Z-value of -1.57 were insignificant at the 10% level for pre-COVID-19 dataset. However, they were significant at the 10% level during the COVID-19 period with EI coefficient value of 803.7831 and a Z-value of 1.83. The control variable i.e. Growth Opportunity (Gopp) demonstrated a coefficient value of 0.005423 and a Z-value of 0.96 for pre-COVID-19 and a coefficient value of -0.218475 and a Z-value of -0.26 during the COVID-19 period both insignificant at 10% level. The FCF with a coefficient value of .0524429 and a Z-value of 2.12 were significant at the 5% level and positively related to the financial performance of M-REITs in pre-COVID-19 period and coefficient value of 122.2211 and a Z-value of 1.77 were was significant at the 10% level during the COVID-19 period. The control variables of size and dividend yield did not project sufficient data to support the significance in the datasets, pre and including the COVID-19 period. There was insufficient data to support corporate diversification in M-REITs by measuring the market value through Tobin-Q.

Analysis of financial performance using Tobin-Q ratios by country, indicated that the diversification of S-REITs (EI) coefficient value of 0.0902428 and a Z-value of 0.99 were insignificant at the 10% level for pre-COVID-19. The EI coefficient value of 0.2411786 and a Z-value of 0.13 were insignificant at 10% level during the crisis period. The control variable i.e. Growth Opportunity (Gopp) with a coefficient value of -0.0005446 and a Z-value of -2.15 were significant at the 5% level and were negatively correlated to the financial performance of S-REITs in the pre-COVID-19 period. The Growth Opportunity (Gopp) with a coefficient value of -.0089159 and a Z-value of -1.80 were significant at the 10% level and negatively correlated to the financial performance of S-REITs during the COVID-19 period. The size effect and the dividend yield were significant at the 1% level for pre-COVID-19 and but was insignificant for measuring the financial performance during the COVID-19 period for S-REITs. The FCF was also not significant for both conditions.

4.3 Moderating Effects of Growth Opportunities on Corporate Diversification and Financial Performance of REITs

Based on Table 7, the Entropy Index (EI) with a coefficient value of 1968.804 and a Z-value of 4.72 were significant at the 1% level for ALL-REITs in the pre-crisis period. The Entropy Index (EI) coefficient value of .6450143 and a Z-value of 67.62 were significant at the 1% level including the COVID-19 period for All-REITs. M-REITs reported that corporate diversification had positively affected financial performance by reference to the Entropy Index (EI) with a coefficient value of 170.2968 and a Z-value of 1.68 which were significant at the 10% level in the pre-COVID-19 period, and they reflected an EI coefficient value of 1102.353 and a Z-value of 2.19 which were significant at the 5% level after taking into

consideration the crisis period. S-REITs reported that corporate diversification had negatively affected financial performance by reference to the Entropy Index (EI) with a coefficient value of -1177.266 and a Z-value of -2.46 which were significant at the 5% level in the pre-COVID-19 period, and they reflected an EI coefficient value of -1208.995 and a Z-value of -4.79 which were significant at the 1% level after taking into consideration the crisis period.

Table 7: Moderating effects of growth opportunities on corporate diversification and financial performance (PI) of REITs

IV/DV	Pre-COVID-19 period (2009-2018)			Including COVID-19 period (2009-2020)		
	All-REIT	M-REIT	S-REIT	All-REIT	M-REIT	S-REIT
PI	.2153305	0.4967022	.3022489	.6450143	.5200495	.3022489
	17.74***	17.62***	9.64***	67.62***	3.92***	9.64***
EI	1968.804	170.2968	-1177.266	-848.1523	1102.353	-1208.995
	4.72***	1.68*	-2.46**	-7.04***	2.19**	-4.79***
Gopp	-.6732205	-2.087088	-2.356536	.7336162	.0034601	-1.332075
	-1.40	-5.19***	-3.77 **	3.53	0.00	-1.59
GOpp_EI	-1.370677	0.5984316	-1.14	2.281086	-4.423197	3.19812
	-2.21**	1.29	3.47***	5.73***	-0.96	3.47***
FCF	57.58254	80.38264	-262.7225	9.857471	143.6516	-1173.516
	3.98***	3.99***	-2.52 **	0.42	1.99**	-3.12***
Size	324.3727	149.9814	684.9381	240.8873	-10.75183	472.5506
	41.62***	10.58 ***	25.30***	30.93***	-0.33	20.45***
DY	-78.79696	-2.83495	-58.81685	-30.4285	-3.493646	-60.64534
	-13.93***	-0.38	-7.27 ***	-23.85***	-0.13	-5.18***
	4475.85**	35707.93**	125799.24**	33431.93**	35707.93**	125799.24**
Wald chi2	*	*	*	*	*	*
estat	-3.2564***	-2.4821	-3.5149 ***	-2.8794 ***	-1.6527 *	-2.1122 **
estat	-1.3616	-2.9839	-3.0345 ***	-.18445	.01122	-1.2914
sargan	30.16358	12.5103	17.83397	29.51425	6.543999	17.77191
# of obs	279	117	162	322	133	189
# of instrument						
s	29	22	22	56	46	33

Notes: Asterisks indicate significance at 10% (*), 5% (**), and 1% (***). The table displays the analysis of growth opportunities moderating effects on corporate diversification and financial performance of REITs. PI = Financial performance measured by price index, EI = Entropy Index, Gopp = Growth opportunity, FCF = Free Cash Flow, Size = Size, DY = Dividend Yield.

The growth opportunity served as a moderating effect between corporate diversification and S-REITs' financial performance. S-REITs reported the moderating impact of growth opportunity with a coefficient value of -1.14 and a Z-value of 3.47 which were significant at the 1% level in the pre-COVID-19 period, and they reflected a coefficient value of 3.19812 and a Z-value of 3.47 which were significant at the 1% level after taking into consideration the crisis period. As for All-REITs, the moderating effect of growth opportunity reflected a coefficient value of -1.370677 and a Z-value -2.21 which were significant at the 5% level in the pre-COVID-19 period, whereas they reflected a coefficient value of 2.281086 and a Z-value of 5.73 which were significant at the 1% level after taking into consideration the crisis period. However, M-REITs reported that growth opportunity did not pose significant moderating impact on the financial performance for the pre and including the COVID-19 period.

In addition, the control variable i.e. FCF reported a coefficient value of 57.58254 and a Z-value of 3.98 which were significant at the 1% level and positively impacted the financial performance of ALL-REITs. M-REITs and S-REITs reported FCF with coefficient values that were significant at the 1% and 5% level respectively. The size effect with a coefficient value of 324.3727 and a Z-value of 41.62 were significant at the 1% level for the pre-COVID-

19 period in respect of All-REITs. They reported a coefficient value of 240.8873 and a Z-value of 30.93 which were significant at the 1% level after taking into consideration the crisis period. M-REITs and S-REITs reported that the size effect was significant at the 1% level for both countries.

Table 8: Moderating effects of growth opportunities on corporate diversification and financial performance (Tobin-Q ratios) of REITs

IV/DV	Pre-COVID-19 period (2009-2018)			Including COVID-19 period (2009-2020)		
	All-REIT	M-REIT	S-REIT	All-REIT	M-REIT	S-REIT
Tobin-Q	.1316101	.3103697	.0879737	.4782916	.5842202	.4291858
	11.49 ***	3.56***	2.64***	66.35***	8.36***	29.21***
EI	-.0483695	-0.1081405	.1031781	1.85875	-.4920194	-1208.995
	-2.09 **	-0.58	0.60	2.00**	-1.24	2.46**
Gopp	-.0002153	0.0008777	-.000784	-.0071838	-.000811	-.0103008
	-1.19	1.12	-2.35 **	-2.07**	-0.86	-1.55
GOpp_EI	.0001574	-.0017908	.0005826	.0270916	.0023396	.0164682
	0.82	-1.71 *	2.06 **	6.34***	2.02**	2.08**
FCF	.0045005	0.0616551	-.0218411	.0682473	.0059104	2.918718
	0.24	1.94 *	-0.20	0.99	1.19	2.08**
Size	0.147329	0.1069962	0.1430803	-0.0066189	0.1069962	-.174135
	31.50 ***	4.77***	11.22 ***	-0.06	0.35	-1.05
DY	-.0182925	-0.0041442	-.0154662	.1506599	-.013791	.3599231
	-6.66 ***	-0.47	-3.48***	2.03**	-0.55	2.23**
Wald chi2	47595.72	1505.05***	18365.24***	8880.00***	168.27***	12569.48***
	-3.8449				-2.9632	
estat abond	***	-3.0371 ***	-2.4829 **	-1.6174	***	-1.6316
	1.4138	1.646	-0.09342	-.98043	.68309	-.86493
estat sargan	26.98442	11.84606	26.98442	12.97903	10.42519	6.796631
# of obs	279	117	162	322	133	189
# of instruments	50	50	50	78	75	75

Notes: Asterisks indicate significance at 10% (*), 5% (**), and 1% (***). The table displays the analysis of growth opportunities moderating effects on corporate diversification and financial performance of REITs. Tobin-Q = Financial Performance measured by Tobin-Q ratio, EI = Entropy Index measures the degree of diversification, GOpp_EI = Growth opportunity as a moderating effect on corporate diversification, FCF = Free Cash Flow, Size = Size, DY = Dividend Yield.

Based on Table 8, the Entropy Index (EI) with a coefficient value of -.0483695 and a Z-value of -2.09 were significant at the 5% level for All-REITs in the pre-COVID-19 period. The Entropy Index (EI) with a coefficient value of 1.85875 and a Z-value of 2.00 were significant at the 5% level for All-REITs, after taking into consideration the crisis period. S-REITs reported that corporate diversification positively affected their financial performance using Tobin-Q ratio whereby the Entropy Index (EI) with a coefficient value of -1208.995 and a Z-value of 2.46 were significant at the 5% level after taking into consideration the crisis period. There was insufficient data to show the relative significance levels for M-REITs in the pre and including COVID-19 period.

ALL-REITs reported the moderating impact of growth opportunity with a coefficient value of 0.0001574 and a Z-value of 0.82 that were insignificant at the 10% level in the pre-COVID-19 period. However, after taking into consideration the COVID-19 crisis, the data revealed a coefficient value of 0.0270916 and a Z-value of 6.34 which were significant at a 1% level. Supported the Hypothesis 2 There is a moderating effect between growth opportunities, REITs, and financial performance.

M-REITs reported the moderating impact of growth opportunity with a coefficient value of -0.017908 and a Z-value of -1.71 that were significant at the 10% level in the pre-COVID-19 period. Taking into consideration the COVID-19 crisis, the data revealed a coefficient value of 0.0023396 and a Z-value of 2.02 which were significant at a 5% level. Supported the

Hypothesis 2 There is a moderating effect between growth opportunities, REITs, and financial performance.

S-REITs reported the moderating effect of growth opportunity with the coefficient value of .0005826 and a Z-value of 2.06 that were significant at the 5% level in pre-COVID-19 period and they reflected a coefficient value of .0164682 and a Z-value of 2.08 which were significant at the 5% level after taking into consideration the crisis period. Supported the Hypothesis 2 There is a moderating effect between growth opportunities, REITs, and financial performance.

The size effect with a coefficient value of 0.147329 and a Z-value of 31.50 were significant at the 1% level for ALL-REITs in the pre-COVID-19 period. Additionally, the size effect for M-REITs and S-REITs were significant at the 1% level, in the pre-COVID-19 period. However, there was insufficient data to support the significance level of the size effect after considering the crisis period. The dividend yield was significant at the 1% level for ALL-REITs and S-REITs in the pre-COVID-19 period. As for M-REITs, the dividend yield was not significant in the pre and including the COVID-19 period. The FCF was only significant at the 10% level for M-REITs in the pre-COVID-19 period whereas it was significant at the 5% level for S-REITs after taking into consideration the crisis period.

5. Conclusion and Implications

REITs have been booming in the ASEAN region, especially in the past ten years. Corporate diversification in REITs is vital due to the change in strategies over the past decade. This study explored several key determinants of corporate diversification in REITs within Malaysia and Singapore and the moderating effect of growth opportunities on corporate diversification and the firm's financial performance. The results were summarized in Table 9 below:

Table 9: Summary results of M-REITs and S-REITs in the pre and including the COVID-19 period

IV/DV	Pre-COVID-19 period (2009-2018)			Including COVID-19 period (2009-2020)		
	All-REIT	M-REIT	S-REIT	All-REIT	M-REIT	S-REIT
	Significant level and (+/-) coefficient					
PI EI	1% +	5% +	5% -	1% -	10% +	1% -
Tobin-Q						
EI	1% -	NS	NS	1% -	10% +	NS
PI						
GOpp_EI	5% -	NS	1% -	1% +	NS	1%
Tobin-Q						
GOpp_EI	NS	10% -	5% -	1% +	5% +	5% +

Notes: PI = Financial Performance measured by Price Index, Tobin-Q = Financial Performance measured by Tobin-Q, EI = Entropy Index measures the degree of diversification, GOpp_EI = Growth opportunity as a moderating effect of corporate diversification.

When testing the corporate diversification on the firms' financial performance based on price index (PI), All-REITs demonstrated a significance level of 1%; however, the correlation had changed from positive (pre-COVID-19 period) to negative (including COVID-19 period). The diversification in M-REITs were significant at the 5% level (pre-COVID-19 period) and at the 10% level (including the COVID-19 period). This result was the opposite when compared to Singapore. Corporate diversification was significant at the 5% level (pre-COVID-19), and 1% level (including COVID-19) and was negatively correlated. On the other hand, when testing the corporate diversification on the firms' financial performance based on the market value (Tobin-Q), All-REITs and S-REITs demonstrated that corporate diversification was significant at the 1% level and negatively correlated. Only M-REITs

revealed that corporate diversification was significant at the 10% level and positively affected the firms' financial performance after considering the COVID-19 period.

Further testing on the moderating effect of growth opportunity using the price index (PI) as a measure of financial performance revealed that All-REITs were significant at the 5% level and negatively correlated with the firms' financial performance in the pre-COVID-19 period. However, after considering the COVID-19 period, the results became positively correlated and significant at the 1% level. M-REITs displayed insufficient data to show the pre and including the COVID-19 period. The moderating effect of growth opportunities in S-REITs was significant at the 1% level and negatively correlated to the firms' financial performance in the pre-COVID-19 period. However, after considering the crisis period, the growth opportunities moderating effect was significant at the 1% level and was positively correlated to financial performance. The firm diversified due to the growth opportunities during the COVID-19 period; warehouses, data centres, and supply chain-related businesses created more options during the pandemic.

Supported Hypothesis 2, There is a moderating effect between growth opportunities, REITs, and financial performance. The moderating effect of growth opportunities on corporate diversification and the firms' financial performance measured by market values (Tobin-Q) showed that All-REITs were only significant at the 1% level after considering the crisis period. On the other hand, M-REITs demonstrated that moderating effect of growth opportunities was significant at the 10% level but negatively correlated (pre-COVID-19 period) and was significant at the 5% level and positively correlated (including COVID-19 period). S-REITs also revealed the same moderating effect of growth opportunities on corporate diversification and the firms' financial performance measured by market values (Tobin-Q) which was significant at the 5% level but negatively correlated (pre-COVID-19 period). However, including the COVID-19 period significantly at the 5% level and became positively correlated.

REIT investors now have the extra knowledge and information to guide them to make decisions, particularly in distinguishing which type of REIT has more growth opportunities and less risk. The pandemic clearly showed that REITs run higher risks if they do not diversify their businesses. On average, the financial performance of REITs dropped by 14% in Malaysia due to the general decline in the economy, decrease in occupancy rates, and low rental income during the pandemic (Jefferey, 2021). Generally, M-REITs and S-REITs include investments in malls, hotels, offices, medical centres, and education buildings. However, a few firms are involved in industrial warehousing properties and successful data centres. The future of REITs depends on growth opportunities and government support. For the benefit of investors, they should select specialized REIT firms to sustain financial performance during economic downturns and look into those that the local government fully supports as an investment tool. The government has fully supported this structure in the ASEAN region and constantly introduced tax incentives to promote REITs in the capital market.

The COVID-19 pandemic has caused REIT firms to change the nature of their business and the range of products offered by engaging in portfolio diversification. The pandemic has also rapidly changed consumer behaviour, accelerating the adoption of e-commerce and work-from-home (WFH) arrangements, reducing the demand for office space. In line with the economic recovery, rental rates will increase, and the performance of high-quality and well-managed REITs will improve. Nevertheless, resilient segments of REITs are more focused on the future, which involves diversification into the manufacturing, logistics, and supply chain industries. In the end, REITs can diversify their businesses by offering complementary or substitute vehicles to existing private property allocation through an international investment portfolio. ASEAN countries will benefit from relocating multinational companies

(MNCs) from developed countries to developing nations or outsourcing services to ASEAN professionals who can serve the world from a relatively affordable co-working desk, office spaces, and meeting rooms. The portfolio diversification of REITs promotes the firms' sustainability in coping with the COVID-19 scenario. The empirical evidence is a guide and benchmark tool for REIT managers to improve their portfolio diversification and sustain their performance by carefully analyzing the portfolio diversification strategies that could affect their financial position in the market. In addition, the portfolio diversification strategies could also establish better prospects for REITs to stay competitive, particularly in the global market. This research paper may have limitations as it only covers M-REITs and S-REITs. Future research can explore REITs within the Asia Pacific region that exhibit different propagation mechanisms.

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