DETERMINATION OF CORPORATE REAL ESTATE COMPOSITION AND
PERFORMANCE FOR SELECTED MALAYSIAN PUBLIC LISTED COMPANIES

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SEPTEMBER 2017

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A thesis submitted in
fulfillment of the requirements for the award of the
Degree of Master of Science in Facility and Real Estate Management

Faculty of Technology Management and Business
Universiti Tun Hussein Onn Malaysia

SEPTEMBER 2017

In the name of Allah, the Supremely Merciful and the Most Kind,

To my beloved family, who those never give up to give me spiritual support and pray.

ACKNOWLEDGMENT

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيم

Thank you Allah for all the grace granted to me and my family.

A million thanks to everyone who helped me a lot in this long journey. I am so indebted to my main supervisor, Assoc. Prof. Dr Mohd Lizam Bin Mohd Diah who had guided me a lot during my analysis process. To my co-supervisor, Sr. Dr Abdul Jalil Bin Omar, who possesses great patience, always humble, supportive and very understanding when educating me throughout my master's journey. And not forgotten, my another co-supervisor, Assoc. Prof. Ahmad Kaseri Bin Ramin who helped me a lot in learning of finance during the phase of collecting data.

To all my research friends, Aina Naseha, Firda, Hani, Siti and Jie. Thank you for all your supports and your willingness to listen to all my problems and always be with me during my hard times.

To my lovely parents, Mama and Abah, who always trust and encourage me to complete this journey. My family members, Ayong, Angah and Alang who give me the spirit to keep on fighting in this research. And the most not forgotten, my two little heroes, Faris and Firas who always be my strength and thank you for your understanding and sacrifices during your childhood time. Last but not least, trillion thanks to my beloved husband who is willing to take care of the kids and always there for me.

ABSTRACT

Corporate world in Malaysia has few of CREM knowledge and CRE performance measurement. However, these public listed companies owned a lot of CRE as one of their asset. The way of this company managing their CRE could not been identified. CRE in the company is not fully utilised as CRE is recognised as a cost contribution to a company and not as a profit generator. However, it is difficult to convince the management without a proper fact and figure. Furthermore, the management in a company makes a decision based on the financial measure performance and justification. Therefore, this research's aim is to examine the composition of CRE ownership in selected public listed company and to evaluate the relationship of CRE performance with the company performance. Descriptive analysis was used in this research to examine the composition of CRE in 39 public listed companies. Industrial product shows the highest composition of CRE ownership for plant and machinery, building and land. Panel data regression was used to evaluate the relationship of CRE performance with company performance. Results from Hausman test and Breusch-Pagan Langrage Multiplier has indicated that only CRER and PP/BV have significant impact to company's ROE. Results from this research can be an evidence to prove that there is a significant relationship between CRE performance and company performance. In future, this research can be improved by using a bigger sample and longer time frame data.

ABSTRAK

Dunia korporat di Malaysia mempunyai pengetahuam yang kurang mengenai pengurusan harta tanah korporat (PHTK) dan ukuran prestasi harta tanah korporat (HTK). Syarikat-syarikat yang tersenarai di Bursa Malaysia ini mempunyai banyak HTK sebagai salah satu aset mereka. Namun, bagaimana cara syarikat ini menguruskan HTK mereka adalah kurang diketahui. HTK yang dimiliki oleh syarikat tidak dmanfaatkan sepenuhnya kerana ia dikenali sebagai salah satu kos kepada syarikat dan bukan sebagai penjana keuntungan syarikat. Walau bagaimanapun, untuk meyakinkan pihak pengurusan syarikat, tanpa fakta dan bukti yang kukuh adalah sukar. Di samping itu, pengurusan syarikat membuat keputusan berdasarkan ukuran kewangan dan justifikasi. Ini kerana, pihak pengurusan syarikat membuat keputusan berdasarkan ukuran prestasi kewangan syarikat. Oleh itu. matlamat bagi kajian ini dijalankan adalah untuk mengkaji komposisi pemilikan HTK di syarikat tersenarai awam terpilih dan untuk menilai hubungan prestasi HTK dengan prestasi syarikat Analisis deskriptif digunakan dalam kajian ini untuk mengkaji komposisi HTK di sebahagian syarikat yang tersenarai di Bursa Malaysia dan untuk menilai hubungan antara prestasi HTK terhadap prestasi syarikat. Analisis deskriptif digunakan bagi mengkaji komposisi HTK di 39 buah syarikat yang tersenarai di Bursa Malaysia. Keputusan analisis deskriptif ini menunjukan bahawa sektor produk industri mempunyai komposisi HTK yang tinggi bagi milikan jentera, bangunan dan tanah. Regresi data panel pula digunakan untuk menilai hubungan antara prestasi HTK dan prestasi syarikat. Keputusan ujian Hausman dan Breusch-Pagan Langrage Multiplier menunjukkan bahawa hanya CRER dan PP / BV mempunyai pengaruh yang signifikan terhadap ROE syarikat. Di akhir kajian ini, hasil keputusan daripada analisis yang dijalankan dapat dijadikan bukti bahawa wujudnya hubungan signifikan antara prestasi HTK dan prestasi syarikat. Kajian ini boleh diperbaiki dan ditambah baik dengan menggunakan saiz sampel yang lebih besar dan tempoh data kajian yang lebih lama.

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LIST OF SYMBOLS

BV   -   Book Value

CRE   -   Corporate Real Estate

CRER -   Corporate Real Estate Ratio

EBIT   -   Earnings before Interest and Tax

EVA   -   Economy Value Added

CREM -   Corporate Real Estate Management

FE   -   Fixed Effect

IRR   -   Internal Rate of Return

MV   -   Market Value

MVA   -   Market Value Added

MWRR-   Money Weighted Rate of Return

PLS   -   Pooled Leased Square

PP   -   Property and Plant

PP & E   Property, Plant and Equipment

PPM   -   Property Performance Measurement

RE   -   Random Effect

REIST -   Real Estate Investment Trusts

ROA   -   Return on Assets

ROE   -   Return on Equity

ROI   -   Return on Investment

ROP   -   Return on Property

ROPP   -   Return on Property and Plant

ROR   -   Rate of Return

SMART-   Storm Water Management and Road Tunnel

TFP   -   Total Factorial Productivity

TM   -   Telekom Malaysia

TWRR-   Time Weight Rate of Return

α   -   intercept for each company

β   -   Coefficient for independent variables

μ -   Error term

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CHAPTER 1

INTRODUCTION

1.1   Introduction

This chapter discusses on the background of the research. It gives a brief description about the whole research report. Chapter 1 starts with background of study for the research. Researcher gathered all the information about the field of study to give a general knowledge about the research. For this research, researcher summarized on what is CREM and CRE are in Malaysia. Research questions and objectives were set up in this chapter based on problem statement. Problem statement was found based on current issues that happened in world of CREM. This chapter also discusses the method that researcher is going to use to achieve the objectives. At the end of this chapter, researcher presents the significant of this research to various field of study.

1.2   Background of Study

CREM is a new field of study and practice in Malaysia. Since it is new in Malaysia, it is important to know the basic knowledge on CREM. According to Liow and Ooi (2004), CRE is known as land or buildings owned by a non-real estate company. In another meaning, CRE is an asset that belongs to a company that operating a non-real estate business. Company from sectors of construction, real estate, real estate investment trusts (REITS) and plantation are excluded from CRE because their core business is involved in real estate.

Corporate world in Malaysia is lacking of CREM knowledge and CRE performance measurement (Hwa, 2002). Therefore, the management team does not know how important for them to manage their CRE efficiently and effectively. CRE awareness among the corporate is important in company's added value. Even though corporate people recognised CRE as their non-core activities, but management team in the company should manage their CRE properly to make sure all the assets are fully utilized (Krumm & Vries, 2003; Simpson & Mcdonagh, 2008).

CRE has its own roles in a company. CRE assists to indicate the strength of company. A company that has many portfolios is recognized as a strong company in the market. The public and investors view this property as a good investment. CRE is important for a public listed company. This is because an investor defines a CRE as a medium to create profit and wealth through ownership of the equity in the company. Therefore, it is important for all corporate companies to have at least a basic CREM knowledge as a guidance to manage their corporate property efficiently.

1.3   Problem Statement

Real estate is scarce and it is increasingly recognised as an important competitive factor among non-real estate related companies (Hartmann et al, 2010). Hence, company needs to be more serious and creative in managing their property such as land, buildings, plants and machineries. Furthermore, a company is recognised as a high value company by referring to its portfolios. Thus, it is important for CRE executives in a company to manage the assets they own efficiently (Liow, 1999).

Efficiently managed CRE helps to generate income and support the company's core business activities. An effective CREM practice is important to meet the needs of the company and act as company's investment in order to enhance their company's value. Some companies failed to make profit on their potential CRE assets to increase overall return and in the long run increase shareholder value (Wills, 2008).

CREM is new in Malaysia and not well accepted among the decision-makers in corporations. Knowledge, attitudes and practice of CREM in a company affected the decision making and will determine their organisation survival. This will contributes to the lack of CRE inputs in decision-makings for enhancing shareholder

value in corporations (Simpson & Mcdonagh, 2008). The impacts from this lack of CREM knowledge and practices among the corporations have limiting Malaysian corporations from fully utilising of their real estate holdings. Nevertheless, the companies also need to review their current practice to remain competitive in the market as CRE is increasingly recognized as a business resource that is capable of supporting business goals and strategies (Too *et al.*, 2010). Inability to have proper CREM practiced in public listed companies has reduced the interest of local and foreign investors to invest in the companies. Hence, to have a proper CREM practice is importance to achieve company goals and generating income.

Global changes of capital markets, advancements in technology and the current economic conditions have increased the awareness of the importance of CRE's contribution to the company performance (Simpson & Mcdonagh, 2008). However, the performance of CRE depends on the evidence and supports from real estate strategy. It is difficult to implement real estate strategy which is not aligned with company's strategy. The problem occurs when people at the top management only concern about their company's performance through increment of revenue or profit. If returns from the real estate strategy are more convincing and gaining more profit instead of loss, the top management executives are more confident to use real estate as their corporate asset (Simpson & Mcdonagh, 2008).

However, the effect of CREM practice on the company's performance is still unclear (Krumm & Vries, 2003). This is because there is no financial indicator to measure CRE performance and its relationship with the company's performance. It is possible to convince the top management if there is no successfully proven evidence that CRE is capable to increase company's profit or revenue.

In Singapore, the proportion of real estate in corporate asset portfolio has increased to an extent where it has become an asset capable of enhancing corporate wealth (Hiang 1999). Hence, this research would like to examine the composition trend of CRE ownership in Malaysia as Singapore has keep increasing in their CRE ownership. Even CRE contribution to corporate wealth has been identified conceptually in Malaysia, however absence of research that has empirically tested the CRE strategy linkages with companies' financial performance (Ali, McGreal, et al. 2008). Hence, the impact and evidence of CRE decision on company performance is still insufficient (Omar & Heywood 2010). Therefore, this study would like to evaluate the influence of CRE performance on company performance among

different sector of companies. This research helps to provide evidence of CRE performance impacts on company performance.

1.4 Research questions

Several research questions were established for this research. They are:

i.   What is the composition of CRE in public listed companies in Malaysia?
ii.   What is the relationship between CRE performance and company performance?

1.5 Objectives of the Study

The successful factor of research was determined by its ability to achieve the research's objectives. Research objective helps to guide the researcher to do the research. The aim of this study is to examine the composition of CRE ownership in public listed companies and to evaluate the relationship between CRE performance and company performance. Hence, the objectives of this research are:

i.   To examine the composition of CRE in public listed companies in Malaysia.
ii.   To evaluate the relationship between CRE performance and company performance.

1.6 Significant of research

Since CREM is few in Malaysia, corporations need to understand the most convenient way to manage their corporate's property. By conducting this research, it helps corporate people or decision makers to make decision in CREM. This research studied the composition of CRE in a company. Studying the composition of CRE in a company is to observe the priority of type of property companies owned. While, by measuring CRE performance and its relationship with company's performance, gives the evidence of CRE contribution to company's performance. Results from this research helps to provide evidence that there is a significant impact of CRE

performance with the company performance. Hence, perception of CRE being a cost saving center can turned CRE to a profit generator.

1.7   Research method

This research was conducted based on quantitative approaches. For quantitative approach, this research involved the use of gathered empirical data from company's annual report through document and content analysis. Sample for this research is the top 100 companies listed in Bursa Malaysia. The top 100 companies were selected based on their market capitalisation. The financial variables used were determined based on previous literature and extracted from the annual reports.

In further, all the extracted financial variables were used for both descriptive analysis and panel data regression. Descriptive analysis was used to analyse the composition of CRE ownership in public listed companies. The extracted data was analysed using mean, minimum value and maximum value. These descriptive analyses assist to identify the trend of CRE ownership among the companies. Meanwhile, panel data regression helps to evaluate the relationship between CRE performance and company performance.

1.8   Scope of research

The aim for this research is to evaluate the relationship between CRE performance and company performance. Sample for this study is from the top 100 companies based on the highest of market capitalisation listed in Bursa Malaysia. From the top 100 companies, 39 companies were selected based on the three sectors. They are from sectors of trading and services, industrial product and consumer product. These three sectors were selected among the other sectors because their nature of business which does not involved real estate transaction as their core business and data availability.

1.9   Summary

This research helps to fill the gap between CRE performance and company performance by conducting panel data regression. The quantitative approach was used to achieve the two research objectives. Sample for this research was based from top 100 companies in market capitalization listed in Bursa Malaysia. Results from this research can be an evidence by proving that there is a significant impact of CRE performance on a company performance help to focus and tackle the most important CRE element in improving company performance.

CHAPTER 2

LITERATURE REVIEW

2.1   Introduction

In this literature review, all the related articles and journals that help to support the research were gathered in this chapter. All discussions about research questions and objectives were held in this chapter to give a strong reference to this research. This chapter reviews literature on CRE performance indicators and company performance indicators which are relevant to this research. Furthermore, other reviews of relevant literatures which are related to the theoretical framework for this research were discussed and presented in this chapter.

2.2   Definition of CRE

CRE is an important asset to a company. CRE is able to contribute more significant success to a corporation rather than saving costs (Chirgwin, 2000). CRE has its own significant part in a firm (Wurdemann, 2012). Therefore, it is important for a company to know the definition of CRE.

Corporate firm is defined as a company that deals with a non-property business. Hence, in general understanding of CRE, it is about an asset that owned by a non-real estate company. Brueggeman (1990) has defined CRE as the land and buildings owned by company business not mainly in the real estate business. As an

example, it is the real estate assets held by retail firms which their core-business is in retailing.

Manning and Roulac (1999) has defined CRE as PP owned by non-real estate company. Non-real estate companies were known as companies that conduct business other than real estate as their core-business. PP in a company is referred to land, buildings and large factories.

Meanwhile, Liow and Ingrid (2008) concluded that CRE as land and buildings owned by companies that operate their core-business other than real estate. CRE is used to support business operation such as providing space for firm's production and delivery.

International Valuation Standards Council (2010), defined plant and machinery as an asset that inextricably combined with other that may include specialized structures, machinery and equipment, an apparatus used for a specific process in connection with the operation of an entity and other assets that are used to assist the operation of an enterprise or entity.

However, based on the previous definition of CRE, this research has found that there is variety of corporate assets that can be categorised as CRE. Different backgrounds of business have created the evolution of CRE definition in this research. As previous research has defined CRE as land, building, plants and other tangible assets that support the company main business operation, variance in nature of business has expand the current definition of CRE for this research.

This research covers a study in three different sectors in Malaysia stock market which is Bursa Malaysia. The three sectors are trading and services, industrial product and consumer product. All these three sectors are non-real estate company. Hence, the type of CRE ownership is different among the sectors depending on its nature of business. For an example, Dayang Enterprise Holdings Berhad is a company that operates a business of marine transportation service. Marine vessel is one of their important assets to support their business operation. Hence, marine vessel is recognised as CRE due to its nature of business and categorised in composition of plant and machinery. Whereas, airline companies such as Airasia has aircraft engine as its CRE to assist the main operation business.

Telecommunication companies such as Axiata and Maxis owned telecommunication network equipment and movable plant as their CRE. For a service companies, it is important to ensure their operation runs smoothly. Therefore,

all these equipments are important to run their business smoothly and to support their business operation.

In conclusion, CRE can be known or defined as land, buildings, plant and machinery owned by a company to support their primary business operation in non-real estate company.

2.2.1 Definition of CRE in company's annual reports

Annual report is a medium of interaction between company and public. It has been published annually to report the current position of the company and became more prominent since it's the only source of information about company performance (Al-Razeen & Karbhari 2004). Company's annual report plays an important role in reporting CREM practiced and accounting management.

Annual reports can be used as an accounting measurement for CRE (Ismail 2006). Financial variables from annual reports can be used to calculate financial metric. In some CRE performance indicators there are some of financial variables have been used. They are value of PP, operating profit, total assets and revenue.

CREM practiced can be seen through annual report. Annual reports show the attitudes of top management towards CRE (Liow & Ingrid, 2008; Simpson & Mcdonagh, 2008). The important sections in company's annual report are income statement, cash flow and balance sheet. In operations of a company, the non-current assets such as PP are grouped according to its function or its similar nature (Alfredson et al., 2007). CRE value can be seen at the balance sheet which are then reported as classes in notes to the financial statement under PPE while the leased properties can be find in the income statement, forming part of the firm's operating expenses (Ali, McGreal, et al. 2008)

From this information, CREM practiced can be identified. If the value of CRE decreasing from the previous year, it may be due to top management decision to sell their PP for that particular year. Commonly, company tends to sell their CRE to pay debts and gain cash for business expansion and increase their liquidity and income performance. Hence, it is important to have a valuation for PP to every company's annual financial reporting to keep the PP value's updated (Rahman et al. 2012).

2.2.2 Overview of CRE

CRE represents about 40 per cent of total corporate assets in a company (Nelson et al, 2000). Hence, it is important to have a good CRE strategy. Good CRE strategies create and enhance shareholder wealth and value of the firm. This is a definition expansion took from Manning and Roulac on 1999 that defines CRE as real estate that helps their company to operate their core business. For corporate firm, with a significant CRE, shareholder value can be increased from its profitable core business. Furthermore, the value of real estate holdings itself, if managed and used wisely can help to generate an operating profit which is higher than its operating cost. However, CRE has its own functions to its company. CRE is responsible to company financial and branding.

CRE has significant roles to achieve company objectives. Company tends to sell their CRE during good times to generate cash for business expansion (Liow & Ingrid, 2008). Disposing their CRE helps them to increase their liquidity. Meanwhile, acquisition of CRE increases its figure in the balance sheet which reflects the company growth. CRE is conceived as a strategic asset that helps to disguise underperformed company's business.

In Malaysia, good CREM practice provides valuable contributions to company's business by aligning CRE with business objective. It assist to support company business in achieving its objectives, which create opportunity to CRE to support business organization in achieving its business objectives (Omar & Heywood 2010; Ali, McGreal, et al. 2008). However, CRE's contribution in creating and retaining customers can only be achieve by providing an attractive physical environment in business organizations to the customers (Ali, Mcgreal, et al. 2008). In conclusion, CRE did provide a positive contribution to the company in Malaysia. However, the way of the company manage their CRE is important in order to get back the positive contribution in return.

2.2.3 CRE financial potential and contribution

CRE has its own potential in terms of financial (Liow & Ingrid, 2008). Normally, organizations are using financial terms and figures as their communication language to business units when dealing with CREM matters (McCarty et al., 2006). The financial language is among the critical attributes for CREM executives to evolve from traditional CREM into more strategic roles. This shows that CRE plays a big impact to organizations financially. It affects firm's financial parameters such as the market value of firm, debt capacity, ROE and firm size. However, contribution of financial in CREM is different from the other real estate management company because corporate firm acquires real estate to support and assist its company's operation and not for making money from the real estate itself (Meyer, 2003): However, financial contributions of CRE can be divided through the following ways:

- By being valuable assets on the balance sheet;
- By managing costly and expensive corporate outlays;
- By managing the financial flexibility and risk inherent to any real estate decision;
- By contributing to organisation's profit; and
- By giving impacts to capital market decisions.

CRE is not only about carrying liability to the company, it has its own potential. Financial consideration is an important consideration in making CREM related decisions by the management especially when involving real estate as the major roles in the balance sheet. Zeckhauser and Silverman (1983) mentioned real estate assets might increase a company's total asset base by at least 10 percent. Hence, high intensity of CRE will contribute to high market value of firm and increase company's book value. The size of firm is also considered as large when it has high CRE intensity.

However, having a CRE as a company asset involves costs and expenses. Even though it is valuable, CRE spending is second highest operating costs after payroll in most of organisations (Veale, 1989; Ettorre, 1995; McNamara, 2002; Edwards & Ellison, 2003). Veale (1989) highlighted that CRE represents about one quarter of corporate worth with total occupancy costs for corporations that can range

between 5 to 8 percent of (pre-tax) gross sales. Therefore, cost-reduction is very synonym with CREM functions. Usually, CREM was often asked about the financial consequences before decided to lease or buy, to move, or to merge and acquire other companies (Gibson & Lizieri, 2001; Cooke, 2002).

CREM cost reduction approach commonly being defined as narrow cost-based terms or a cost-centred function (Wills, 2008). When company and decision maker focusing too much on cost reduction, it creates negative reflection about CRE whereas there are many other positive components that CRE can contribute to the organisation's success (Miciunas, 2002). Furthermore, limited potential of CREM in stipulation of cost targets poses a problem when CREM is unable to determine the factors of these costs types due to many cases occurred which are outside of CREM's control (Stoy & Kytzia, 2004).

Other than cost issues, CREM executives are faced with the mounting tasks of managing financial flexibility of CRE which is basically inflexible in nature (Scheffer et al., 2006). Organisations that managed to improve their real estate functions and performance into outperformed real estate lead to larger objectives for the business. In fact, CREM financial flexibility can be demonstrated in different parts of the organisation's portfolio for various situations such as real estate as collateral for mortgage loans, maintenance plans to suit with corporate cash flow, owning or leasing strategies, taxation advantages through capital allowance schemes (Hill, 2001; Crosby, 2003, 2005). Apart from financial flexibility, Gibson (2001) mentioned CREM functions as concerned with the need to manage financial risk and exposure of any real estate decision especially in regard to tenure and terms of real estate agreement. Understanding this type of risk allows organisations to know how fast they could exit a property transaction and at what cost. Space charging to external parties and internal rents to business units play important roles in generating profit for organisations (McDonagh, 2008). In some ways, the internal rents help organisations to control their budgets and reduce waste in space usage. Profit generation also exists by CREM leveraging existing use.

Increment in corporate awareness assists CREM in deciding CRE investment. A wise investment in company's asset helps to generate another profit for the company instead of depending on their sales. Besides, CRE helps to bring a bigger objective of the business (Jordan et al, 2009). Through smart investment decisions, they can make much more money by planning a smart financing decision (Myers,

1984). Change in ownership from owning to leasing may save companies in terms of interest payments, relocation to a lower rent workplace reduce excessive rental cost, disposition of surplus properties, and taking advantage of refinancing benefits are a few ways of generating profit from CREM (Adendorff & Nkado, 1996). Hence, by applying smart financing decision, CREM's capability is not only being capitalised as a cost-centre but also can be utilised as profit oriented function.

Another financial contribution is in terms of capital market impacts. The capital market impact may vary depending on the reasons. However, there is a more positive impact for companies that make announcements to focus on their business than those who do not (John & Ofek, 1995). In this case, asset elimination of non-core CRE holding brings positive outcomes to share prices by portraying to the shareholders that company is reducing real estate assets and is focusing on their business.

The most important objective that financial manager should consider is to maximize shareholder wealth by determining the best combination of financial resources for the company (Pouraghajan, 2012). Adequate and appropriate financing and investment will increase corporate value and thus will increase shareholders wealth. Then, it can be noted that the best combination of financial resources for every company is optimal or desirable capital structure. Other than that, company's financial performance is measured through its managerial compensation. It must be correlated highly with shareholder's return (Bacidore et al, 2012). When this return is positive, shareholders have more income to cover their risk and capital. But, if this return is negative, they have been inadequately compensated for risk.

From this relationship, good financial performance measure should correlate highly with abnormal stock returns. How to finance the company's assets for interested individuals and institutions is noteworthy and also how much debt and stock the company used to finance its assets is important because this will impact on corporate financing decisions (Yahyazadehfar et al., 2010). Liow & Ooi, (2004) and Brounen, et al, (2005) supported this claim as their research found that higher real estate asset intensity gave negative impacts to a company's economic and market value-adding.

The stock returns are the lowest among companies with highest real estate ownership. However, given the separation and variety of ownership control, companies cannot be expected to make corporate decisions necessarily in enhancing

shareholders' value from stock's price only without appropriate mechanism to align managerial and shareholder interests (Lee & Lee, 2007). Every decision made by the company to spend on capital expenditures such as relocation to operate at a lowest cost centre which leads to a change in bottom line performance and an increment in revenue is also a contributing factor in enhancing shareholder wealth (Manning et al., 1999). This leads to justifications for CRE capital expenditure that has both positive and negative impacts to organisations depending how this CRE asset is being used.

2.2.4   Financial performance gaps in CRE

CRE has always been underestimated by firm's decision maker. In French, CRE was reported as historical cost (Nappi-choulet et al, 2009). CRE has its own value when the time is increased. By reporting CRE as historical cost, it is assumed as underestimating its potential in increasing company asset's value and its capability in generating income to the company. People would think CRE as a cost centre and not a profit centre.

Financial analysis has been incorporated with company's productivity measures among variables that known as economic driver for firm (Bosch-Badia, 2010). Meanwhile, increase of cost flexibility and quality helps to increase financial performance of a firm (Kazan, 2006). What the author is trying to state is similar to the fact that the importance of return on equity (ROE) variables in company's financial report to investors. Financial analysis acted as a medium of reference for public to measure the performance of a company.

Value of CRE has been reported as PPE in firm financial report. Every growth or depreciate in value of CRE will effect firm's financial structure. CRE continues to be an under-appreciated aspect of corporate affairs. These CRE assets in fact represent a significant proportion of firm value. CRE has often been undervalued by corporate managers (Nelson et al., 2000). Knowledge of the CRE function is crucial to understanding an economy's value creation process of delivering goods and services to consumers (Roulac et al., 2005). However, there is an absence of research that has empirically tested the CRE strategy linkages with a company's financial performance. This study addresses this gap by focusing on an empirical investigation of CRE strategies and their relationships with the financial performance

of companies (Ali et al, 2008). Lack of CRE performance measurement leads to lack of evidence in firm financial performance.

2.3   Company performance measurement

Tools for performance measurement help the performance to be measurable. Measurable performance assists the top management team to construct the company's strategy. Performance measurement is a continuous dialogue for better understanding in what to measure in order to evaluate certain critical issues and application of its tools ensure the corporate strategy is on the track (Jordan et al., 2009).

2.3.1   Company performance measurement indicator

Company performance indicator is required in this research to evaluate the relationship with CRE performance. Table 2.1 show several indicators that have been used to measure a company performance. They are economy value added (EVA), market value added (MVA), earnings before interest and tax (EBIT) and return on equity (ROE).

   EVA is a way to measure economic profit and suitable to estimate value creation for a company in order to produce a more economically version of residual income (Ismail 2006; Nappi-choulet et al. 2009). An asset considers creating wealth to a company when it generates more profits than costs. The other proxy that can be used to measure value creation is MVA. It can be defined as difference between the market value of firm minus the book value of assets. EVA measures the economic profit the firm has earned at a specific period, while MVA measures the present value of all future economics profits.

Table 2.1: Analysis for previous literature on company performance indicator to measure company's performance

No.	Company Performance Indicators	References	Summary
1.	Economi value added (EVA)	1) Maditinos, Dimitrios, I., 2005. 2) Ismail, A, 2006 3) Mittal,R., Sinha, N., Singh, A., 2007. 4) Nappi-choulet, I., Missonier-piera, F., Cancel, M., 2009 5) St-Pierre, J., 2011. 6) Austin, 2005	EVA can be regarded as a global performance measure which can be used as the basis for a comprehensive Performance management and management system in SMEs. EVA is by far the best financial metric that explains stock return.
2.	Market value added (MVA)	1) Maditinos, Dimitrios, I., 2005. 2) Ismail, 2006. 3) Mittal R., Sinha, N., Singh, A., 2007. 4) Nappi-choulet, I., Missonier-piera, F., Cancel, M., 2009 5) St-Pierre, J., 2011.	MVA separate company's market value and capital. MVA assist to illustrates the successful of invested capital now and in future.
3.	Operating profit ratio	1) Bosch-Badia, 2010	Results from this research show the functional relationship between ROA, total factor productivity and labour productivity.
4.	Return on equity (ROE)	1) Dimitrios, 2005 2) Molina-Azorı´, Claver-Corte, Maria D. Lo´pez-Gamero, & Tarı´, 2009. 3) Ng, Xie, & Kumaraswamy, 2010. 4) Diaw & Mbow, 2011.	The results ROE express the amount of net income returned as a percentage of shareholders' equity. Further explanation is in sub-chapter 2.3.2
5.	Return on assets (ROA)	1) Bosch-Badia, 2010.	Results from this research show the functional relationship between ROA, total factor productivity and labour productivity.
6.	Return on investment (ROI)	1) Greenbaum, 2007.	The research found out that the real estate performance management in a company that have high real estate intensity has significant ROI.
7.	Shareholder value added	1) Wudermann, 2010.	Studied the value added to shareholder value from CRE performance measurement.
8.	Earnings before interest and tax (EBIT)	1) Maditinos, Dimitrios, I., 2005. 2) Ismail, A, 2006 3) Mittal,R., Sinha, N., Singh, A., 2007. 4) Nappi-choulet, I., Missonier-piera, F., Cancel, M., 2009 5) St-Pierre, J., 2011. 6) Austin, 2005 7) Bosch-Badia, 2010	Constructed by dividing operating profit with revenue. This indicator was used to measure company's productivity and profitability.

2.3.2   Return on equity (ROE)

Return on equity (ROE) is one of the most popular performance indicators used to measure firm's performance. ROE can be simplified by dividing net income with shareholders' equity. The results of this equation express the amount of net income returned as a percentage of shareholders' equity.

Ng et al, (2010) proved that franchisees depend on ROE to establish the financial attractiveness of a scheme. The author studies on public-private partnership (PPP) and found that PPP helps to generate a higher return than the financial cost on behalf of the equity investors. From this result, it is identified that ROE is an important key performance indicator views by investors before deciding to invest in a firm.

Study on the differences of ROE and mudharabah shows that ROE tends to be higher than return on mudharabah (Diaw & Mbow, 2011). This study also suggests that ROE related significantly with return on assets (ROA). This is because the shareholders will endure any advantage and disadvantages from the leverage effect.

Dimitrios (2005), in the study about the CRE performance relationship with stock's price return, has mentioned that ROE is one of important indicators and has been used widely to assess corporations' performance. This is because ROE is able to measure how efficient the shareholder equity capital is employed within the company.

In another study by Onaolapo and Kajola (2010) has shown that there is significant negative impact of debt ratio with company ROE. This study covered 30 nonfinancial companies in 15 industry sectors in Nigeria for over 7 year period from 2001 until 2007. However, in another study of Elsayed Ebaid on 2009, which concerned on the effect of capital structure on the performance of 64 Egyptian companies during 1997 to 2005 showed no significant relationship between ROE and total debt to total assets ratio.

In overall, the mean value of ROE helps to indicate the good performance of management in gaining profit from firm equity. When the cost of financing is less than asset returns, therefore, the excess amount is belong to equity, as a result the return on equity is more than return on assets (Pouraghajan, 2012). This research decided to use ROE as one of its company indicator because in public listed

company, shareholder's equity is one of the most importance financial variables. From ROE, investors able to determine the amount of net income returned as percentage of shareholder equity before they able to decide on their investment decision.

2.3.3   Earnings before interest and tax (EBIT)

Operating ratio profit indicator can be calculated by dividing operating profit over revenue. This indicator was constructed based on the most frequently used variable in measuring firm's performance. In this case, variable of operating profit was taken from economic value-added (EVA) indicator. EVA also involved calculation of other financial variable such as net income and cost of capital. EVA is a way to measure economic profit and suitable to estimate value creation for a company (Nappi-choulet et al, 2009). PP consider creating wealth if it generates more profits than costs. There are many authors used EVA to measure performance of firm and stock return (Bahri et al., 2011; Ismail, 2006; Nappi-choulet et al., 2009). Besides, the reliable of operating profit variable in measuring corporate performance is undeniable.

Next, is revenue variable. Revenue is also known as operating revenue and sales revenue. Revenue is firm's raw income. Bosch-Badia, (2010) has used revenue as the product between price change ratio and total factorial productivity (TFP). Objective of the study is measuring productivity return. Revenue is about sales of products or services that firm able to make over the financial year. So, this reason makes revenue a suitable variable to measure company productivity.

Combination of revenue and operating profit for this indicator helps to show the whole performance of company in term of firm's productivity and profit. This company indicator is suitable with the sample of this research because most of the samples are involved in production business. Hence, results from this ratio helps to indicate the proportion of operating profit in every RM1 of revenue generated.

2.4   CRE performance

CRE is the most neglected of all corporate assets (Stadlhofer 2010). Lack of knowledge and awareness of CRE have created a negative thought that CRE is non-important corporate assets. In contra, high performed CRE helps to increase the company profit. However, lack of evidence for CRE performance has reduced the impact of CRE on the corporate balance sheet (Wurdemann 2012). Hence, it is important to have CRE performance measurement tools. Table 2.2 show the previous research on CRE performance.

The main purpose to have property performance measurement (PPM) is to assess the achievement of the property investor in the investment by measuring previous performance against goals. PPM assists the investor to identify whether the goals for the investment were achieved or whether the progress of the investment is moving positively towards those goals (Zarin & Bujang 1997).

According to Greenbaum (2007), there are several factors that trigger the need to measure CRE performance. They are managing a significant capital commitment, controlling linkage between overall corporate performance and real estate performance, efficiently managing overall costs, managing dynamic nature of acquisition and disposition, allowing efficient collaboration across entire real estate lifecycle and managing compliance and regulatory risks.

One of the important needs for CRE performance measurement as stated above is to control the link between overall corporate performance and real estate. Therefore, it is important to have a tool to measure CRE performance of a company and its contribution to a company performance. If there is no indicator that correlates CRE performance with company performance, people at the strategic level is not aware with CRE contribution (Simpson & Mcdonagh 2008a).

Previous literature highlighted the importance of CRE performance measurement in a company. To measure CRE performance, there must be a tool to measure the performance. It is necessary for a firm to have their own tools in measuring their CRE performance. Existence of tools to measure CRE performance creates a good deal between stakeholder interests and CRE goals (Jordan et al. 2009). Result from the tools which correlate the relationship between CRE performance and company's performance help to attract people at the strategic level about the importance of CRE in their company.

However, the existing measurement tools on CRE was over to measure the performance in the operational level, and not strategic performance measures, which could assist the organization to identify the CRE contribution to the corporate wealth (Wurdemann 2012). Therefore, this research uses financial measurement approach which is related with strategic performance measurement.

From the previous researches, there are several financial tools that can measure CRE performance. They are corporate real estate ratio (CRER), return on property (ROP), time weight rate of return (TWRR), money weighted rate of return (MWRR), internal rate of return (IRR) and rate of return (ROR). Zarin & Bujang (1997), TWRR evaluated performance by measuring in a single calculation. It involved the amount of income and capital appreciation yield by an investment or portfolios over certain period.

The paper discusses on the tools used to measure property performance. TWRR measures the performance of an asset as a segregated entity and it is not interested with how much money was invested at a particular time. Thus, in order to excrete the distorting effect of new money, the market value of the asset will be determined each time there is a new cash flow. But, this performance measurement has its own weakness. This is due to imperfection of the property market, lack of information, confidentiality of data, and complication of transaction procedure, is a contributed to the problem of carrying this analysis on property.

Table 2.2: Analysis of previous literature on corporate real estate performance

indicator to measure corporate real estate's performance

No.	CRE Performance Indicators	References	Summary
1.	Corporate real estate ratio (CRER)	1). Hiang, 1999. 2) Seiler, Chatrath, & Webb, 2001. 3) Brounen, Colliander & Eichholtz, 2005. 4) Liow, 2010. 5) Stadlhofer, 2010. 6) Park & Glascock, 2010	To analyse the effect of corporate real estate ownership on the stock performance of firms. In Brounen research, the result The shows a statistically significant positive relationship between CRER and return over the whole sample. Its mean ownership has a positive influence on stock performance in the retail sector.
2.	Time weight rate of return (TWRR)	1) Zarin & Bujang, 1997.	This research introduced the real estate performance measurement. However, the introduced performance indicators was unsuccessful due to imperfection of the property market, lack of information, confidentiality of data, and complication of transaction procedure are the contribution of the problem during carrying out the analysis on the property.
3.	Money weight rate of return (MWRR)	1) Zarin & Bujang, 1997.	
4.	Internal rate of return (IRR)	1) Zarin & Bujang, 1997.	
5.	Return on property (ROPP)	1) Wills, 2008. 2) Bosch-Badia, 2010. 3) Liow, 2010.	The use of this indictor is to calculate the contribution of RE in firm profits. However, higher of real estate concentration does not necessarily cause higher real estate exposure
6.	Property and plant over book value (PP/BV)	1) Deng and Gyourko, 1999 2) Hiang, 1999 3) Liow & Ingrid, 2008 4) Liow, 2010.	CRE/BV helps to indicate the percentage the BV (shareholder's equity) that is invested in real estate.It is concluded that high real estate ownership and high risk have lower returns.
7.	Property and plant over market value (PP/MV)	1) Deng and Gyourko, 1999 2) Hiang, 1999 3) Liow & Ingrid, 2008 4) Liow, 2010.	This indicator helps to indicate the influence of the CRE holdings on the overall financial structure of the firm. The results for this research show real estate is an important factor priced in the stock market value of the sample retail firms.

Based on the previous literature, the important CRE performance measurements in the research are:

- Corporate real estate ratio (CRER)
- Return on property and plant (ROPP)
- Property and plant over market value (PP/MV)
- Property and plant over book value (PP/BV)

2.4.1   Corporate real estate ratio (CRER)

CRER has been used to measure CRE performance for sector of retail and franchise (Brounen et al., 2005; Liow, 2010; Park & Glascock, 2010). CRER helps to identify CRE intensity in a company. Brounen *et al.* (2005) has study on the effect of CRE ownership on the stock performance of firms active in the international retail sector. From the study, the results showed that CRE ownership is diverged greatly across subsectors. Difference in location and customisation demands of real estate has caused the variation in the results.

While, Liow (2010), studied and explored on whether real estate is an important factor in corporate valuation. Further to this, this research has investigated on which investors believed the importance of CRE reflected the pricing of stock market. However, the study found that higher real estate intensity does not necessarily cause higher real estate exposure after controlling for firm size, leverage and growth. High intensive of CRE gives return to a company with sensitivity of real estate factor and reflects in the stock market.

For franchise sector, the effect of CRE asset ownership on the performances of franchise organizations shows negative performance effects of CRE ownership in general, but shows positive results for franchise organizations (Park & Glascock, 2010). This research used CRER as one of its CRE performance indicator because CRER helps to examine the percentage of CRE from company total asset. Used of this indicator show the impact of CRE ownership to company performance. Since this research used sample from non-real estate company, it is important to know the impact of CRE ownership to this company.

2.4.2 Return on property and plant (ROPP)

Return on property and plant (ROPP) indicator has been manipulated from return on assets (ROA) and return on property (ROP). The variable in this indicator was manipulated because the scope of this research is about CRE and only focuses on PP. This indicator was calculated by dividing operating profit with the value of PP owned by a firm. Contribution of PP in generating firm's profit can be measured by calculating its return using this indicator. Results from calculating the returns, we know how many profit that PP can contribute to a firm for every one ringgit of PP they owned. Bosch-Badia (2010); Liow (2010) and Wills (2008), have conducted research that used ROPP to measure its PP returns.

There were several authors used this kind of indicator to measure their productivity, return on property of the firm. Bosch-Badia (2010), used this indicator to measure the firm's profitability and connecting it with firms' productivity. The study found that there is a relationship between firm's productivity and profitability. Certain firm's productivity is depending on their PP which helps to increase their production.

There are many other researches that examined the existence of a systematic PP factor in retail's common stock return (Liow, 2010). This paper justifies that ROA's expected rate is determined by their covariance with the market portfolio of all risky assets. The results show that real estate returns were important in explaining the cross-sectional variation of expected retail stock returns.

For this research, the used of ROPP as its CRE indicator is important to measure the amount of operating profit that CRE is able to contribute to the company. Consumer product and industrial product is a production company. Hence, the amount of generated operating profit is important to the company. The used of this indicator is good for this research as this research able to evaluate the contribution of CRE investment to company's profit and is impact towards the company's overall performance.

2.4.3 Property and plant over market value (PP/MV)

PP/MV is an indicator that gives results in the percentage of firm market value of equity which is related to real estate holding. It can be calculated by dividing PP with market value of firm. Market value of firm shows it firm's size and the future growth of the firm. This indicator is usually used together with PP/BV in measuring CRE performance.

Liow (1999), used this indicator on public listed companies in Singapore stock market. The sample was from sectors of hotels and industrial and commercial. Results from this study showed that the percentage of PP in the sample is over 61.5% of corporation's market value.

Later, Liow and Ingrid (2008), done a research on a combined perspective of CRE. The purpose of this study is to identify the potential contribution and performance incremental that considered as financial plans of "property-rich" retail firm. In this paper, Liow stressed that this performance indicator helps to indicate the CRE ownership on the overall financial structure of the firm. This situation occurred during valuation of firms. Real estate owned by the firm will determine the market valuation of firm.

Liow (2010) conducted another research in retail sector to examine the real estate risk factor in common stock returns and whether the risk is priced in the stock market. Result from the research showed that factored price in the stock market value in retail is strongly influenced by real estate.

Hence, from result of the previous research, PP/MV can be used in this research because the sample of this research was selected based on the top 100 public listed companies which based on the highest market capitalization. The function for this performance indicator is suitable with the market strength of the company to ensure the data remain competitive with each other.

2.4.4 Property and plant over book value (PP/BV)

Property and plant (PP) in a firm is growing as their company grows and supporting company's business operation. Growing of PP will increase total equity in a firm. Therefore, by applying this indicator, it helps to indicate the percentage of

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