DIVIDED BASED RETURN FORECAST AS BENCHMARK FOR REIT PERFORMANCE

Olusegun Olaopin Olanrele[a], Rosli Bin Said [b], Mohd Nasir Bin Daud[c]
[a, b, c] Department of Estate Management, Faculty of Built Environment,
University of Malaya, 50603 Kuala Lumpur, Malaysia
Correspondence e-mail address: olanrele@siswa.um.edu.my

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Abstract: REIT return benchmark in specific REIT market are produced using NAV, Leverage, Income, Dividend forecast and Star rating of investment. A range of benchmarks exist across the different REIT markets including US NAREIT, UK IPD, AUX LPT and EPRA. The Asian REIT market have S-REIT index and J-REIT index as a benchmark for REIT return, yet there is absence of regional benchmark index. This paper focuses on establishing a sector predicted benchmark for REIT performance in Malaysia for competitive comparison across Asian REIT market in full consideration of the joint contribution of identified return predicting factors. To measure portfolio or investment performance, studies have traditionally employed performance measures that compare the returns of managed portfolio with benchmarks like S&P500 index, NYSE Composite, NAREIT Index, Composite Price Index (CPI), KLCI, ASI, or ratios like Jensen Measures, Treynor ratio, Sharpe ratio etc. This study attempt a forecast of REITs return benchmark using Time Series analysis. The study adopted the quantitative research approach. A sample of 10 listed conventional REITs were selected to reflect diversity in portfolio and location. Data were extracted from the annual reports of selected REIT companies through their websites for period of eight years (2006-2013). Time Series regression was performed on the collected data from the listed REITs to establish a linear model for the forecast of REIT return at any period that can serve as benchmark for the REITs. The data shows that none of the predicting variables have a one direction of influence with dividend. A decline in the Size or NAV or FFO does not rigidly lead to a fall in dividend and vice-versa. Therefore the predictors jointly influence dividend. The regression for the trend estimation for forecast also support this position of joint significant influence of predicting factors on dividend. The study found that predicted return of 7.5% is above the actual return from REIT (6.26%) which indicates that REIT is performing below their capacity and could do more. The forecast is 18% higher than the actual. The forecast for the first quarter of 2014 is a bit higher than the actual dividend declared (table 6). A final dividend of 9.2 Sen and 7.6% annual return is predicted for year 2014 and could serve as benchmark for REIT performance for 2014. The study covers the conventional REITs that were listed in Bursa Malaysia, hence, the 4 Islamic REIT were excluded from the study. Similar study on Islamic REIT could serve a subject for another research.

Keywords: Benchmark, Dividend, Performance, REIT Return, Time Series.

INTRODUCTION

Performance measurement/analysis is the process of ascertaining the degree at which organizational goals are met and how (A. Lee, Gregory, & Platts, 2005). Performance measurement can be viewed from various perspectives such as quality service, customer satisfaction, cost efficiency, or income and return generation (Kotler, 1984; Neely, 1994; Slack, 1991). Investment performance measurement and analysis can focused on how much does it cost to provide a service and how much benefit is derived from the service/product provided. The difference between the cost and benefit set is then analysed to assess the actual performance of the investment. The system of performance measurement explores issues such as internal, external, financial and non financial to arrive at judgment (Kapplan & Schwartz, 1995; A. Lee et al., 2005).

Real Estate Investment Trust (REIT) performance can be literarily explained in terms of its operational success which is revealed in its profitability to the investors. In other words, success of an investment is determined by its profitability (Grupe & DiRocco, 1999). REIT markets have proved extremely successful in U.S. and Australia, with

growth expected in the "new" REIT markets in Asia and in Europe (Hoesli & Lizieri, 2007). The operations of Real Estate Investment Trusts (REITs) are tailored towards investing in income generating real estate assets, most especially commercial properties – office and retail properties. The recent trends however show that REITs funds are invested in healthcare and hospitality facilities as well as high rise income yielding residential properties (condominium), industrial and agricultural properties. In general, the performance of REITs is mainly determined by the different types of investments the companies make, which is basically divided into Equity REIT, Mortgage REIT and hybrid REIT (Chan, Erickson, & Wang, 2003; Grupe & DiRocco, 1999). Returns from REITs are primarily derived from rents from their property assets and capital appreciation and expresses in form of dividend. Dividend is thus a measure of performance of REIT as it is for any investment in the stock/capital market and could be measured in percentages (%) or money units (e.g cents or Ringgit). According to the (FMI, 2010) report, the financial and credit crisis (global economic crisis) of 2007 that swept the global economy slowed down the growth of the Asian REIT in terms of market capitalization with its biggest fall in the first half of 2008. The REIT market capitalization shrank by almost one third to US$48billion due to fall in REITs (unit share) prices as well as new listings which dried up. The market rebound strongly in 2009, rising by 34% as stock markets in Asia improved and credit became available following the injection of capital by the governments into the banking system (a bail out measure adopted by many countries to avert the effect of the global economic crises of 2007-2011) (FMI, 2010).

In every investment performance studies, there is always a benchmark for comparison and decision. A study carried out on Arab Malaysian First Property Trust, First Malaysia Property Trust and AmanahHarta Tanah PNB was done to reflect the systematic risk and performance of these REIT companies compared to the Sharpe Index, Treynor Index, and Jensen Index in the time frame of January 1991 till April 1995. The study concluded that REIT are low-correlated with the market, which means they perform better than the market during the bearish phase, but they are opposite during the bullish market. Besides, systematic risks were high due to speculation for the three selected REITs. Newell, Ting, and Archeampong (2002) discovered that AmanahHarta Tanah PNB is the only REIT, out of 4 other samples to outperform KLCI index and the Kuala Lumpur Properties Index for the period of 1991 till 2000 period (The study in effect used the KLCI and KLPI as bench mark). These indexes focused on the capital market elements of share prices movement and factors like return from the other forms of investment which are dictated or affected by a different set of factors/attributes from the factors that affected real estate property returns which in turn affects REIT returns and performance. All past studies available to us have analysed REIT return using correlation and volatility studies where the benchmark are either market index or risk ratio and considering the predicting factors in isolation. The non simultaneity analysis of the joint contribution of return predicting factors constitute a gap in the study of REIT performance. Again benchmarking REIT performance with indices that are market dependent against a prediction that will consider REIT capacity is another gap we identified. These two identified gaps in the earlier studies could have accounted for inconclusive or mixed findings in respect of the impact of each return predictor as reported by the past literatures. We intend to fill this gaps in this study. Since REIT return constitute a series over a period (quarterly distribution), Time Series regression will considered the relationship between various attributes and return in the REIT subsector of the market. Therefore this study used the Time Series analysis to establish a linear relationship between return and predicting variables for true forecast of a benchmark in the REIT industry (which will be regarded as expected return).

BACKGROUND TO REIT DEVELOPMENT

REIT is a form of securitization since it involves the issuance of shares by the trust to investors and pooling of investors fund towards acquisition and management of real estate assets. However the difference is that REIT is not loan securitized asset backed, rather it is a fund investment in real estate assets. REIT gain more recognition as an investment diversifier to reduce risk since real estate is negatively correlated to other financial investment (Chan et al., 2003)

Securitisation was defined by (ESF, 1999) as "the process whereby loans, receivables and other financial assets are pooled together, with their cashflows or economic values redirected to support payments on related securities". The securities are generally referred to as 'asset backed securities' (ABS) and are issued and sold to investors, who utilize securitization to finance their business activities (ESF, 1999). The financial assets that supports payments on ABS include residential and commercial mortgage loans, as well as a wide variety of non-mortgage assets such as trade receivables, credit card balances, automobile loans, lease receivables, consumer loans etc. The basic concept of securitization can be applied to virtually any asset that has a reasonably predictable future stream of revenue. Therefore, securitization has been extended to nearly all sector of the economy including insurance, healthcare, natural gas and even entertainment royalties (ESF, 1999). While the lists of assets that may be securitized seem to be

endless, the fundamentals of securitization are relatively basic, and are common to all types of transactions. The process of securitization is similar to a meaningful extent whenever it is applied either in sector or environments (countries), though under different legal and regulatory frameworks across countries. Securitization is an arrangement that involves a complex set of structured finance transactions where a number of entities are often established for the purpose of the transaction. The legal structure of securitization is dependent on the type of asset to be securitized, the type of market access desired by the sellers and any relevant taxation, prudential or regulatory issues. Basically, the intended goal of securitization is to isolate the financial assets that support payment on the relative ABS and ensures that payment on the ABS are derived exclusively from the performance of the segregated pool of respective financial assets, rather than the entity that originates or holds the assets (ESF, 1999).

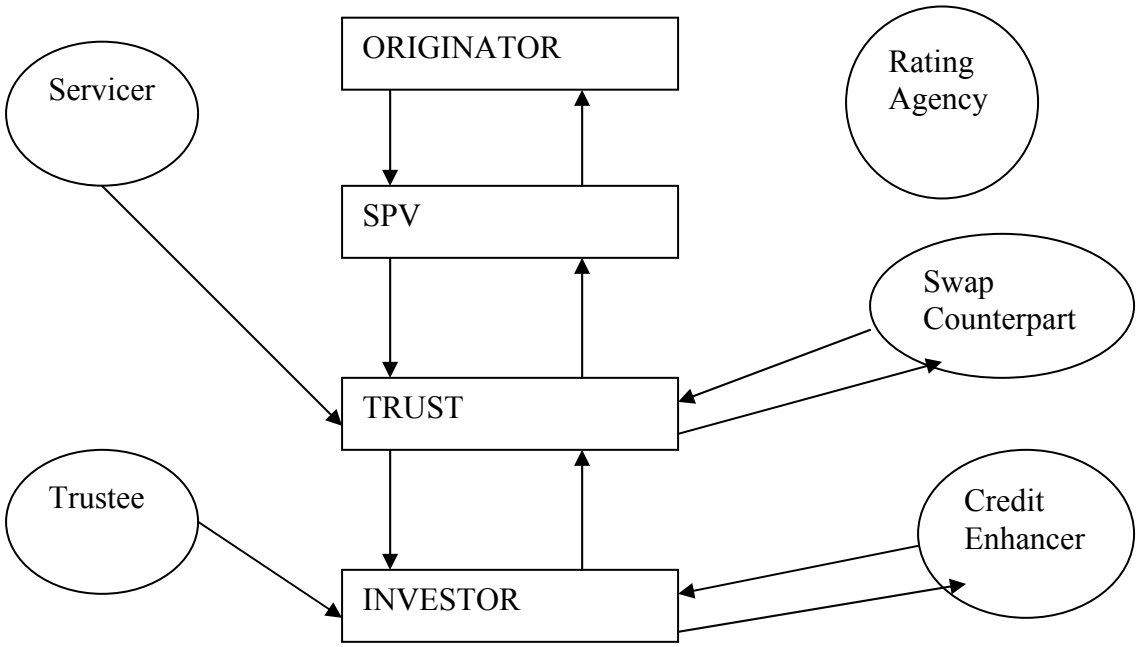

Figure 1: Participant in Securitisation (ESF,1999)

REAL ESTATE INVESTMENT TRUST (REIT)

A REIT is an entity that invests primarily in real estate and qualifies for special tax treatment, providing a conduit for earnings to be taxed at the investor level and not at the entity level (EPRA, 2012). REITs are expected to own, operate, acquire, develop and manage real estate assets and/or provide related services. REIT as "a company that owns, and operates income producing real estate, whose shares are publicly traded in a way similar to any other stock" (Corgel, Mclntosh, & Ott, 1995; Oreagba, 2006; Wong, 2004). Initially, REIT tendered to be similar to mutual funds allowing investors to pool capital and invest in diversified pools of real estate that were regarded as passive investments (EPRA, 2012; FMI, 2010). REIT has attributes of both stock and bond and it is thus regarded as a hybrid of stocks and bonds (Ong, The, & Chong, 2011). REIT increase strength from the pool of resources gathered from investors and invests into high profile and high value property for greater return as lots of investor may not be able to invest in huge real estate portfolio (Wong, 2004).

Under the United States Federal Income Tax Law, a REIT is any corporation, trust or association that acts as an investment agent specializing in real estate and real estate mortgages. A REIT is entitled to deduct dividend paid to its owners (shareholders) before tax and therefore avoid incurring all or part of its liabilities for the U.S. Federal Income Tax, this is meant to avoid double taxation. REITs by law are required to distribute at least 90% of their taxable income as dividend unto the hands of the investors. A REIT is a company that owns, and in most cases, operates income producing real estates. REITs own many types of commercial real estate, ranging from offices to

warehouses, hospitals, shopping centres, hotels, timberlands and apartments in some rare occasions. Some REITs also engage in financing real estate. However, the REIT structure is originally designed to provide a real estate investment structure similar to the structure of mutual funds to provide for investment in stocks From the past studies and literatures, common to all definitions of REIT are some requirements for a company to qualify as a REIT and for the for the benefit of tax exemption at the corporate level. Therefore, for the purpose of this paper, REIT is defined as a company or corporation registered by stock exchange which invest its fund (in an manner like a mutual fund) but on income generating real estate products (property/asset), shares of property firms and real estate mortgages; generates its income from property investment and distribute almost all its revenue before tax to its investors/shareholders in form of dividends with little provision for re-investment. The common features in the definitions of REIT are:

i. A registered company, association, trust or corporation
ii. Investment in income yielding real estate properties, and or real estate mortgage
iii. Generate revenue from real estate properties
iv. Distribution of revenue before tax to investors in form of dividend

REIT is likened to a company that is quoted on the stock exchange but its core business is the ownership, purchase, sale and development of real estate (Oreagba, 2010). In other words, REITs are property companies whose shares are publicly traded on the secondary market. The difference between REIT and a quoted company, however, is that the former must distribute a larger percentage of its profits to shareholders, and in return for distributing 90 percent of their annual profits as dividend to shareholders, REITs are free from corporate tax. Therefore REIT is a real estate investment vehicle designed to make fund available for real estate and stimulate real estate development and financing. This could be made possible in two ways. Firstly by making fund available for immediate acquisition of real estate products developed by property developers, who will have their money in bulk and in time and move on to develop more or payback their development loan thereby making such fund available for another project by developers. Secondly, REITs through mortgage REIT can buy mortgaged backed securities thereby releasing fund for mortgage activities. In Malaysia, as revealed by the annual reports of the REIT companies over the years, over 90% of the REIT operations has focused on Equity REIT; acquisition, owning and managing of income yielding real estate properties. In other countries like USA, REITs are reported to involve in real estate development to increase their portfolio (Cunningham & Ramey, 2006). Every investor's wish is to buy an asset today that guarantees capital appreciation tomorrow while paying most of its yearly income out as dividend. This guaranteed capital appreciation is one of the peculiar features of the Real Estate Investment Trust (REIT).

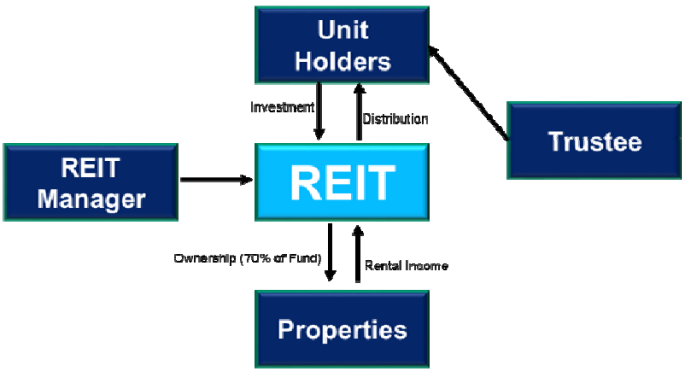

Figure 2: REIT Structure

REIT IN MALAYSIA (M-REIT)

Modern REIT started in the United States through the amendment of tax law by the US congress in 1960 (Chan et al., 2003). Since then more countries around the world have established REIT regimes at different times. The spread of the REIT approach to real estate investment around the world has also increased awareness and acceptance of

investing in global real estate securities. As said earlier, REIT is not new in Malaysia, It was previously known as Property Trust Fund which had been in existence since 1989. Malaysian Property Trust Fund (PTF) was developed in line with the Australian Listed Property Trust (LPT) model as a basis to set up the regulatory framework (Ahmad & Izah, 2010; Hwa, 2008). Following the Asian economic crisis of 1997, other Asia countries established REIT market with Japan pioneering the movement in 2001, followed by Singapore in 2002, Taiwan in 2004, and Hong Kong in 2005. Japan have the most developed REIT market, meanwhile Singapore's REIT market appears to be the most dynamic in Asia.

The Bank Negara Malaysian (Malaysian Central Bank) approved the first regulatory framework under Company Act 1965 and Securities Commission Act of 1983, governed the establishment and operations of the Property Trust Funds. The Securities Commission became regulator later on in 1991 and further guidelines were published by the Specific Securities Commission in 1995 (Ong et al., 2011). The Securities Commission introduced a consultation process for property related trust funds in 1999 which lead to a revised guideline in 2002. Malaysian REIT in modern form, came into existence in 2005 following the guidelines of the Securities Commission same year. This particular amendment stated that the minimum fund size is RM 100 million for REIT to be formed in Malaysia. The management company has entitlement to foreign effective equity, limited to the maximum of 70% (Ong et al., 2011)). Furthermore, real estate investment trust can either be listed or unlisted in Malaysian Stock Exchange. However, relevant listing and shareholding prerequisites issued by KLSE must be complied with by the listed REIT(s). According to the Finance Act 2004, real estate investment trusts are enabled to indulge the tax treatment as followed:-

1. The undistributed income will be taxed at 28% while distributed income will be tax exempted.
2. The tax payable at 28% will be withheld by real estate investment trusts for non-residents
3. Accumulated income that has been taxed and subsequently distributed is eligible for tax credit.

Stamp duties are exempted on all transfer of real property for REITs as stated in the Finance Act 2004. Real property gains taxes are also exempted for property sale transaction from owners to REITs (Ahmad & Izah, 2010). Today, Malaysian REIT (M – REIT) has Thirteen (13) conventional REITs Four (4) Islamic REITs (Bursa Malaysia Securities, 2013). Arab Malaysia First Property Trust, being the pioneer of Malaysia listed REITs in September 1989, followed by First Malaysian Property Trust in Nov 1989 and AmanahHarta Tanah PNB in December 1990. The trend continues with the Axis Real Estate Investment Trust in July, 2005, Starhill Real Estate Investment Trust in December, 2005, and UOA Real Estate Investment Trust in December 2005. The several new REIT companies consist of Capital Mall Malaysian Trust, Sunway Real Estate Investment Trust, and Pavillion Real Estate Investment Trusts were introduced in 2010. The latest entry was the KLCC REIT, an Islamic REIT listed on 9th of May, 2013 on the board of Bursa Malaysia (table 1).

Table 1: REIT Companies in Malaysia

S/N	Company Name	Acronym	Status	Type of REIT
1	Quill Capital Trust	QCAPITA	Selected	Conventional
2	AmanahRaya REIT	ARREIT	Selected	Conventional
3	Sunway REIT	SUNREIT	Selected	Conventional
4	Tower REIT	TWRREIT	Selected	Conventional
5	AmFirst REIT	AMFIRST	Selected	Conventional
6	CapitalMalls Malaysia Trust	CMMT	Selected	Conventional
7	Hektar REIT	HEKTAR	Selected	Conventional
8	Atrium REIT	ATRIUM	Selected	Conventional
9	UOA REIT	UOAREIT	Selected	Conventional
10	Starhill REIT	STAREIT	Selected	Conventional
11	KLCC REIT	KLCC	Not Selected	Islamic
12	AL-Aqar Healthcare REIT	ALAQAR	Not Selected	Islamic
13	AL-Hadharah Boustead REIT	BSDREIT	Not Selected	Islamic
14	Axis-REIT	AXREIT	Not Selected	Islamic
15	Pavilion REIT	PAVREIT	Not Selected	Conventional
16	IGB REIT	IGBREIT	Not Selected	Conventional
17	Amanah Harta Tana PNB	AHP	Not Selected	Conventional

Source: Bursa Malaysia Securities, (as at 20 November, 2013)

REIT PERFORMANCE AND BENCHMARKING

In accounting the rate of return (ROI) on capital invested is a measure of performance of a business (investment). The analysis of stock investment dividend based return performance is usually carried out through a variety of analysis and in comparison with established yardstick (Oxley & Smith, 1996) like KLCI, CPI, S&P500 etc. in case of correlation studies or ratio such as Treynor, Sharpe, Jensen Alpha for volatility studies. The comparison of performance against established comparable or set yardstick is referred to as Benchmarking. This means the performance of identified comparable in term of return (mostly in percentages) is a benchmark/yardstick to measure and judge the performance of a subject investment. Benchmarking is seen as a means of identifying improvement opportunities as well as monitoring the performance of competitors (Young, 1993). Camp (1989) defines benchmarking as "the continuous process of measuring products, services and practices against the toughest competitor or those companies recognized as industry leaders, it is a search for industry best practices that leads to superior performance".

Benchmarking as a term was originally used by Land Surveyors to compare elevations (Kouzmin, Loffler, Klages, & Korac-Kakabadse, 1999). Horvath and Herter (1992) in same line with Camp (1989) defined benchmarking as a continuous systematic process of measuring products, services and practices against organizations regarded to be superior with the aim of rectifying any performance gaps. It aims at identifying competitive targets and establishes means of improvement. To measure portfolio or investment performance, studies have traditionally employed performance measures that compare the returns of managed portfolio with benchmarks like S&P500 index, NYSE Composite, NAREIT Index, Composite Price Index (CPI), KLCI, ASI, or ratios like Jensen Measures, Treynor ratio, Sharpe ratio etc (Amidu, Aluko, Nuhu, & Saibu, 2008; Grinblatt & Titman, 1993). An Investment/ portfolio that delivers higher index than the benchmark is considered to have over performed and a portfolio that return lower than the benchmark is regarded to have underperformed while a higher volatility ratio signals a higher risk. Newell et al. (2002) used KLCI & KLPI as benchmark in their study for the period 1991 to 2000 and discovered that only AmanahHarta Tanah was the only REIT to outperform KLCI index and the KLPI. The study concentrated on price appreciation or depreciation when the net property income is a determinant of dividend. Though total return is a total sum of price appreciation, capital gain and dividend. Comparing REIT return which has much dependency on the income from property assets which in turn depend on economic, socio-demography, political and environmental factors with purely capital market price determined index will not reflect the optimal performance capacity of REITs. Parker (2011) illustrated with UKIPD index which is based on institutional grade commercial real estate of about 11,000 sample in UK. He warned that the sample may not create an index for the entire UK commercial property market because the sample did not include all properties in the market. Such an index is not indicative of the entire real estate market as the sample was defined to represent institutional grade commercial properties in UK. Likewise, a market index of highest capitalised firms may not serve a good benchmark for REIT. Boudry, Coulson, Kallberg and Liu (2013) in their study of commercial properties and portfolio indexing agreed on the importance of the development of sectorial index to investment benchmarks and performance evaluation, They found that office index in their sample is higher than the aggregate index. The study concluded that commercial property price index (CPPI) indices can be effective in hedging direct real estate investment and performance measurement. The property portfolio of REIT is more of office and retail properties most time. Chegut, Eighholtz & Rodrigues (2013) developed a transaction based index for London office and found that the office index is higher than the IPD London Commercial Property Annual Growth Index for one year.

Various authors have considered effect or contribution of different factor attribute on REIT return (NAV, FFO, Size, Asset Value and Leverage) (Allen, Madura, & Springer, 2000; Banz, 1981; Delcoure & Dickens, 2004; Hamelink & Hoesli, 2004; Keim, 1983; C. F. Lee & Kau, 1987; Mclntosh, Liang, & Tompkins, 1991; Olgun, 2005; Ratcliffe & Dimowski, 2007). Though, studies on REIT return identified Net Asset Value (NAV), Fund from Operations (FFO), Leverage/Gearing, Size, Asset Value as well as external factors like Location as determinant of REITs performance (Alias & Soi Tho, 2011; Brounen & Sjoerd, 2012; Chaudhry, Maheshwari, & Webb, 2004; Feng, Price, & Sirmans, 2011; Gore & Stott, 1998; Hamelink & Hoesli, 2004; Hwa & Abdul Rahman, 2007; Ong et al., 2011; Ting & Mohd, 2007; Yong, Allen, & Lim, 2009). These attributes were considered each in isolation of the other. The reality is that each and every one of the identified factor attributes is exerting influence on REITs performance simultaneously, therefore a regression is expected to reveal the contribution and the significance of each factor attribute as well as the joint effect of all factors on REIT return and can predict/forecast the benchmark for REITs return in full consideration of the simultaneity effect of all the factors. Invariably any factor that affects property income affects REITs performance. While there is need for a yardstick to be set in REITs performance analysis, this study believed that such yardstick/benchmark is expected to be dictated or forecast by the workings of the

determining factors of REITs return. Since it has been proved that REITs return depends on NAV, FFO, Size, Gearing and Asset Value, the relationship between these component factor determinants and REITs return should be established to make a more realistic forecast of a benchmark.

Past studies have identified some variables that affect REIT performance to include Share Price, NAV, FFO, Size, Leverage and Asset Value in using correlation and volatility approach (as stated earlier). However this study identified the possibility of double counting of effect of some of the identified variables when used in a regression study. The variables were screened and reduced to eliminate the double counting effect. For instance, NAV is derived by deducting all liabilities (including loan) of a company from the value of its asset then divide by the number of outstanding units of shareholding. Therefore the NAV alone takes care of asset value and leverage. Size also is a product of unit share price and the outstanding shares, thus there is no need to consider the share price under this regression once size has been imputed as a factor. Data for the study were the economic data in respect of REIT investment that include the NAV, Size and FFO. These data were extracted from the quarterly reports of the 10 REITs selected from their annual reports and processed the data to form an aggregate for analysis (table 2).

Table 2: Time Series data for M-REIT dividend based return forecast

Year	Quarter	Period	Size (RM'm)	NAV (RM)	FFO (RM'm)	Dividend (Sen)
2006	1st (31/3/)	1	645.20	1.02	12.57	1.77
	2nd (30/6)	2	507.06	1.03	10.02	1.68
	3rd (30/9)	3	548.11	1.03	10.68	1.97
	4th (31/12)	4	426.82	1.01	8.41	1.60
2007	1st (31/3/)	5	416.39	1.04	10.20	1.75
	2nd (30/6)	6	391.85	1.09	9.66	1.98
	3rd (30/9)	7	393.28	1.07	11.04	2.10
	4th (31/12)	8	421.71	1.12	10.02	2.43
2008	1st (31/3/)	9	421.50	1.16	11.01	2.01
	2nd (30/6)	10	421.50	1.16	11.76	2.11
	3rd (30/9)	11	421.23	1.19	11.61	2.18
	4th (31/12)	12	421.50	1.21	11.58	2.18
2009	1st (31/3/)	13	421.50	1.27	12.19	2.19
	2nd (30/6)	14	421.19	1.27	11.91	2.08
	3rd (30/9)	15	421.19	1.27	12.28	2.26
	4th (31/12)	16	421.19	1.28	11.98	2.55
2010	1st (31/3/)	17	421.14	1.29	12.51	2.54
	2nd (30/6)	18	435.75	1.28	12.24	2.19
	3rd (30/9)	19	716.22	1.23	17.11	2.05
	4th (31/12)	20	715.70	1.23	21.32	2.13
2011	1st (31/3/)	21	738.83	1.24	20.55	2.37
	2nd (30/6)	22	754.13	1.25	20.00	2.21
	3rd (30/9)	23	754.71	1.25	20.76	2.05
	4th (31/12)	24	802.11	1.27	22.62	2.59
2012	1st (31/3/)	25	802.40	1.27	23.78	2.29
	2nd (30/6)	26	803.08	1.29	24.26	2.17
	3rd (30/9)	27	824.76	1.27	24.19	2.07
	4th (31/12)	28	825.08	1.30	24.98	2.19
2013	1st (31/3/)	29	857.04	1.30	25.38	2.27
	2nd (30/6)	30	857.76	1.30	25.04	2.31
	3rd (30/9)	31	858.08	1.30	24.93	2.18
	4th (31/12)	32	858.82	1.32	25.93	2.15

Source: Author's compilation from REITs companies' websites

For analysis of econometric data and of time and seasonal variance of this nature, Time Series regression is considered the best to establish a linear relationship for a forecast beyond the end of period for which a data set is collected. In the portfolio return analysis, the expected return is the average return of each investment over a defined time period, in the same vein the dividend based return of REITs and the corresponding values of the determinant

factors over a period of time can be used for regression for a forecast. This will have consideration for the peculiar nature of the underlying asset of REIT– real property. Time Series analysis take a further step to make adjustment for different distortion known as seasonal effects over a period of time and is adopted for this study. The regression equation is usually expressed as

$$Y_t = \alpha + \beta X_{t(1-n)} \quad (1)$$

Where Y_t is the dependent variable and X_t is the predicting variable(s) for period 1 - n, α is the intercept and β is the slope.

ANALYSIS AND RESULT

Table 2 above present the aggregate data for the selected 10 conventional REITs in Malaysia up to 31st December, 2013. The data were collected as a time series data on quarterly basis for 32 periods covering first quarter of year 2006 to fourth quarter of year 2013.

The following assumption of multiple regression were tested for.
(i)Normality of the distribution of data
(ii) Correlation among the variables
(iii) Linearity
(iv) Outliers and
(v) Heretoskedasticity.

Skewness and Kurtosis were employed for the normality. The variables are normally distributed with values greater than -1.96 and less than +1.96, the normal distribution range, as shown in table 3.

Table 3: Statistics for normal distribution test

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Dividend	32	1.60	2.59	2.1438	.23133	-.342	.414	.541	.809
Net Peroperty Income	32	8.41	25.93	16.3288	6.19747	.399	.414	-1.655	.809
Net Asset Value	32	1.01	1.32	1.2066	.10008	-.902	.414	-.681	.809
Capitalisation	32	391.85	858.82	598.3384	187.79939	.225	.414	-1.842	.809
Valid N (listwise)	32								

The test for autocorrelation using Pearson (r) correlation test indicated that there is no autocorrelation among all the variables with all correlation values less than 0.9 (table 4). The Mahalanobis distance test shows that there is no outlier in the data with a maximum value of 8.621 which is less than the maximum value of 16.27 for a regression with 3 independent variables (table 5). The regression validity was affirmed through a test for homoscedasticity using Bruesch-Pegan F statistics and White's Chi Square (χ^2) test. The F statistics of the regression is 11.07 greater than F value (3.863) and significant at $P < 0.05$. The White's LM χ^2 statistics is 17.366 greater than the χ^2 value (11.07) and also significant at $P < 0.05$. The statistics confirm that the regression is free from heteroskedasticity.

Table 4: Correlations among the variables

		Dividend	Net Property Income	Net Asset Value	Capitalisation
Dividend	Pearson Correlation	1	.354*	.710**	.194
	Sig. (2-tailed)		.047	.000	.286
	N	32	32	32	32
Net Peroperty Income	Pearson Correlation	.354*	1	.689**	.827**
	Sig. (2-tailed)	.047		.000	.000
	N	32	32	32	32
Net Asset Value	Pearson Correlation	.710**	.689**	1	.511**
	Sig. (2-tailed)	.000	.000		.003
	N	32	32	32	32
Capitalisation	Pearson Correlation	.194	.827**	.511**	1
	Sig. (2-tailed)	.286	.000	.003	
	N	32	32	32	32

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Table 5: Residuals Statistics for outliers

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.7667	2.3510	2.1438	.17042	32
Std. Predicted Value	-2.212	1.216	.000	1.000	32
Standard Error of Predicted Value	.037	.092	.057	.014	32
Adjusted Predicted Value	1.7653	2.3479	2.1448	.17212	32
Residual	-.23172	.40241	.00000	.15643	32
Std. Residual	-1.408	2.445	.000	.950	32
Stud. Residual	-1.507	2.530	-.003	1.009	32
Deleted Residual	-.26568	.43105	-.00109	.17672	32
Stud. Deleted Residual	-1.544	2.829	.015	1.058	32
Mahal. Distance	.579	8.621	2.906	1.981	32
Cook's Distance	.000	.114	.033	.038	32
Centered Leverage Value	.019	.278	.094	.064	32

a. Dependent Variable: Dividend

The Normal probability plot of the residual shows the linearity curve of the regression (fig 3). The data satisfy all the assumption of multiple regression analysis.

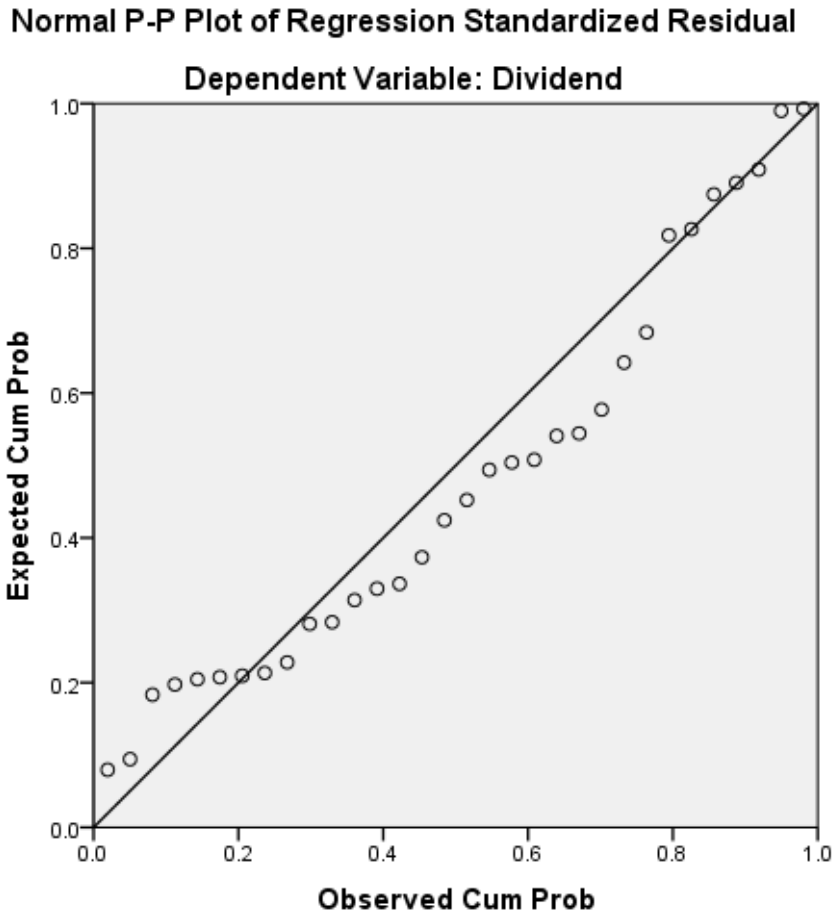

Figure 3: Linearity curve of Regression

The dividend as shown in table 3 was plotted against the period to identify the time series (Fig 4). The dividend exhibited the presence of the time series characteristics of irregularity, seasonality and trend. In order to make a forecast for M-REIT dividend based return benchmark, there is need to make adjustment for the randomness, seasonality and then get the trend. The dividend data was smoothed out using centralized moving average (CMA) approach (Table 6). The centralized moving average values were plotted and overlaid on the actual aggregate dividend data collected (fig. 5).

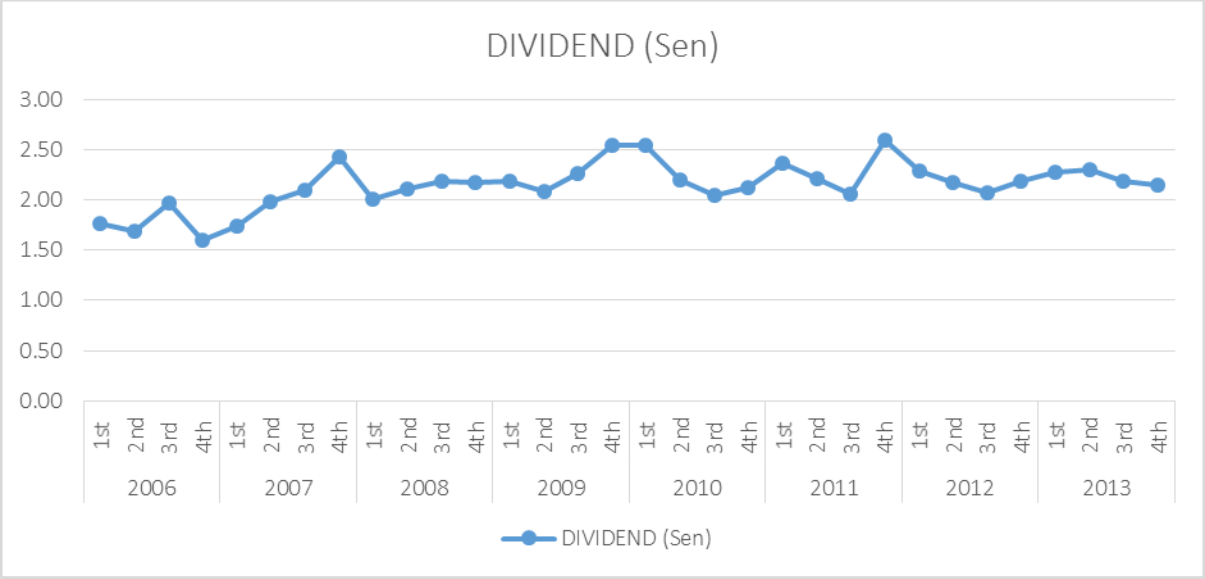

Figure 4: Time Series plot of aggregate actual dividend for year 2006 – 2013.

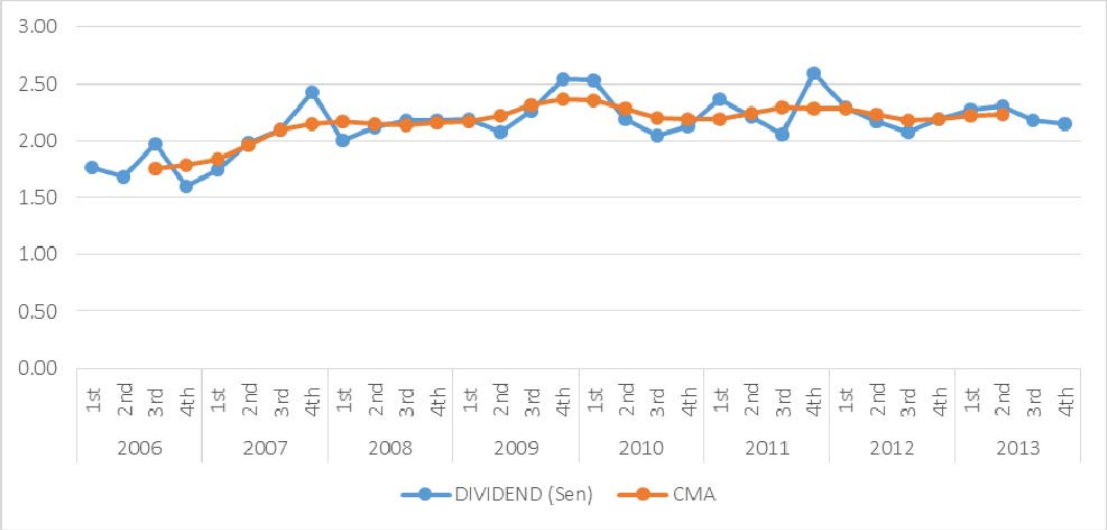

Figure 5: Smoothed dividend overlaid on actual dividend

Table 6: Time Series forecast of REIT return

Period	Dividend (Sen)	FFO (RM'm)	NAV (RM)	SIZE (RM'm)	CMA	Seasonality	Trend	Forecast (Sen)
1	1.77	12.57	1.02	645.2		1.01	1.76	1.78
2	1.68	10.02	1.03	507.06		0.98	1.82	1.79
3	1.97	10.68	1.03	548.11	1.75	0.99	1.81	1.79
4	1.60	8.41	1.01	426.82	1.79	1.03	1.81	1.87
5	1.75	10.20	1.04	416.39	1.84	1.01	1.88	1.90
6	1.98	9.66	1.09	391.85	1.96	0.98	1.98	1.94
7	2.10	11.04	1.07	393.28	2.09	0.99	1.95	1.93
8	2.43	10.02	1.12	421.71	2.14	1.03	2.02	2.08
9	2.01	11.01	1.16	421.50	2.17	1.01	2.10	2.12
10	2.11	11.76	1.16	421.50	2.15	0.98	2.10	2.06
11	2.18	11.61	1.19	421.23	2.14	0.99	2.16	2.14
12	2.18	11.58	1.21	421.50	2.16	1.03	2.19	2.26
13	2.19	12.19	1.27	421.50	2.17	1.01	2.31	2.33
14	2.08	11.91	1.27	421.19	2.22	0.98	2.31	2.26
15	2.26	12.28	1.27	421.19	2.32	0.99	2.31	2.29
16	2.55	11.98	1.28	421.19	2.37	1.03	2.33	2.40
17	2.54	12.51	1.29	421.14	2.36	1.01	2.35	2.37
18	2.19	12.24	1.28	435.75	2.28	0.98	2.32	2.27
19	2.05	17.11	1.23	716.22	2.20	0.99	2.14	2.11
20	2.13	21.32	1.23	715.70	2.19	1.03	2.15	2.22
21	2.37	20.55	1.24	738.83	2.19	1.01	2.16	2.18
22	2.21	20.00	1.25	754.13	2.25	0.98	2.17	2.13
23	2.05	20.76	1.25	754.71	2.30	0.99	2.17	2.15
24	2.59	22.62	1.27	802.11	2.28	1.03	2.20	2.26
25	2.29	23.78	1.27	802.40	2.28	1.01	2.20	2.22
26	2.17	24.26	1.29	803.08	2.23	0.98	2.24	2.20
27	2.07	24.19	1.27	824.76	2.18	0.99	2.19	2.17
28	2.19	24.98	1.30	825.08	2.19	1.03	2.25	2.32
29	2.27	25.38	1.30	857.04	2.23	1.01	2.24	2.26
30	2.31	25.04	1.30	857.76	2.23	0.98	2.24	2.20
31	2.18	24.93	1.30	858.08		0.99	2.24	2.22
32	2.15	25.93	1.32	858.82		1.03	2.28	2.35
33	2.27	25.93	1.32	858.82		1.01	2.28	2.30
34		25.93	1.32	858.82		0.98	2.28	2.23
35		25.93	1.32	858.82		0.99	2.28	2.26
36		25.93	1.32	858.82		1.03	2.28	2.35

Legend: Actual Forcast for observed period Forecast for 2014

Source: Authors calculation.

The data was adjusted for the seasonal effects and the trend calculated using regression analysis (table 6). The regression return the intercept α_o and beta $\beta_{1\text{-}n}$ values and the equation read thus:

$$D = 0.088 + 1.84N - 0.0004S + 0.004I \quad (2)$$

where D is dividend, N is NAV, S is Size, I is FFO (Net Property Income). The result of regression is presented in table 7.

Table 7: Time Series Regression for Trend identification for REIT dividend forecast

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FFO	0.004022	0.027768	0.144845	0.8859
NAV	1.842157	0.577981	3.187230	0.0035
SIZE	-0.000389	0.000773	-0.503156	0.6188
C	0.088049	0.669413	0.131532	0.8963

R-squared	0.542709	Mean dependent var	2 .143750
Adjusted R-squared	0.493714	S.D. dependent var	0.231332
S.E. of regression	0.164602	Akaike info criterion	-0.654110
Sum squared resid	0.758622	Schwarz criterion	-0.470893
Log likelihood	14.46576	Hannan-Quinn criter.	-0.593379
F-statistic	11.07673	Durbin-Watson stat	1.837972
Prob(F-statistic)	0.000057		

Dependent Variable: DIVIDEND
Method: Least Squares

Sample: 2006Q1 2013Q4
Included observations: 32

At $P \leq 0.05$, NAV has significant contribution to dividend with P value of 0.0035. FFO and Size have insignificant contribution with P values 0.89 and 0.62 respectively. The model summary shows that all the listed independent variables jointly contribute 54.27% to dividend with R square value of 0.5427. Having P value of 0.000057, the contribution of the three independent variables to dividend is significant at $P \leq 0.05$. The Durbin-Watson test of autocorrelation shows that there is no autocorrelation between the dividend and its residual with a value of 1.84. The regression equation was fixed with the real values of the independent variables and a new set of trend values are generated (table 6). A forecast of dividend was thereafter made as a product of the seasonal effect and the trend (table 6). The forecast value were plotted against the periods and overlaid on the earlier two plots of actual dividend and smoothed dividend (fig 6). The forecast was projected for the four quarters of year 2014 using the last aggregate data of NAV, Size and FFO.

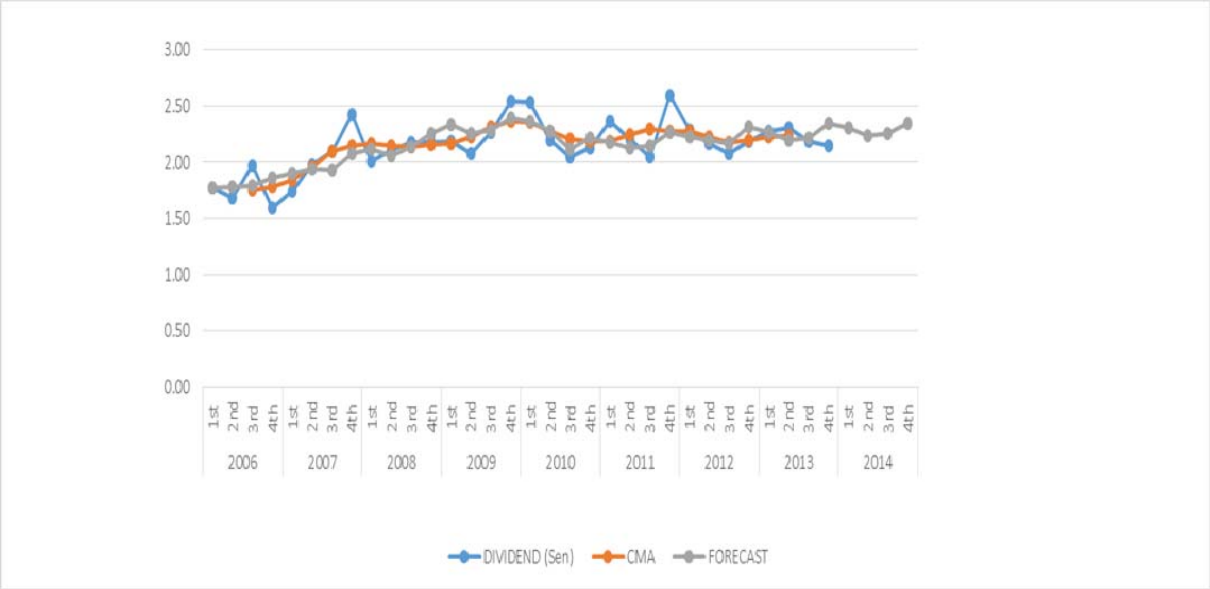

Figure 6: Dividend forecast overlaid on smoothed dividend and actual dividend

The predicted dividend for each year is slightly higher than the amount of dividend declared by the companies (Table 6). The average of the predicted vale 9.03 Sen (7.52%) is presented as benchmark for REIT performance in Malaysia for year 2013. This is higher than the average return of 6.26% declared by Bursa Malaysia as at September 2013.

DISCUSSION AND CONCLUSION

The set goal of this paper is to establish a benchmark for REIT performance measurement through a forecast that will take into consideration both the seasonal effect and the simultaneity of the predicting factors influence. The study found that the actual dividend possess trend, seasonal and probability characteristics (fig 3). Centralised moving average (CMA) was used to smoothen the data and extract the seasonal and irregular components of the data. The data also shows that none of the predicting variables have a one direction of influence with dividend. A decline in the Size or NAV or FFO does not rigidly lead to a fall in dividend and vice-versa. Therefore the predictors jointly influence dividend. The regression for the trend estimation for forecast also support this position of joint significant influence of predicting factors on dividend. From the study, NAV has positive and significant effect on REIT performance and thus agreed with past studies that NAV is directly correlated to dividend (Ong et. Al., 2011; Hwa, 2007). However Clayton and Mackinon, 2001 cautioned that NAV can fluctuate in response to changes in investors' sentiment. FFO has positive but insignificant effect on REIT dividend contrary to the expectation and believe that Net Property Income determine the amount of dividend. Size was found to have an inversely relationship with dividend, though highly insignificant. This agrees with (Chan et al., 2003; Colwell & Park, 1990; Mclntosh et al., 1991; Mueller, 1998; Yong et al., 2009) of a negative relationship between size and dividend but runs contrary to finding of economies of scale advantage of large size REITs (Ambrose & Linneman, 2001; Bers & Springer, 1998; Capozza & Seguin, 1998; Linneman, 1997) . The study confirmed the authors believe that the predicting factors have a significant joint contribution of 54.27% to REIT dividend as reflected by the R^2 value of 0.5437 which is significant at $P < 0.05$. The dividend forecast from this study suggest that REIT performance is lower than the optimal capacity despite it outperformance of the KLCI.

The result of the forecast shows a curve that closely followed the smoothed dividend curve (fig 6) and we projected the forecast to the four quarters of the year 2014. The forecast for year 2013 is a final dividend of 9.03 Sen translating to 7.5%.In September, 2013, REIT return in Malaysia was 6.26% (Bursa Malaysia, 2013). The forecast is 18% higher than the actual. The forecast for the first quarter of 2014 is a bit higher than the actual dividend declared (table 6). A final dividend of 9.2 Sen and 7.6% annual return is predicted for year 2014 and could serve as benchmark for REIT performance for 2014.

The findings therefore confirmed the proposition in this paper that all the independent variables have influence on the dividend at the same time (simultaneously) and no variable should be considered individually and in isolation of others to reveal the true performance of REITs. The findings also show a reflection of the diversification and types of properties in the portfolio of REIT companies. The findings also implied that REIT performance of 6.26% is below the predicted benchmark of 7.5%. The KLCI for the month of October 2013 was 5.49% which is 2.3% monthly gain over September, 2013 (KLSE, 2013). Comparing the REITs return of September 2013 which 6.26% with September KLCI of 5.3%, REITs outperformed the KLCI but below the 2013 predicted return of 7.5% for the REIT sector. It could be concluded therefore that M-REIT outperforms the KLCI but have a sectorial capacity underperformance. We conclude that a sector forecast of expected return with consideration for the simultaneous influence of the predicting factors and necessary adjustment for seasonality and randomness will go a long way in reflecting the full potential of REIT companies for an optimum performance of the REITs.

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About the authors:

Name: Olusegun Olaopin Olanrele
PhD Student, Department of Estate Management, Faculty of Built Environment, University of Malaya,
Lecturer II, Moshood Abiola Polytechnic, Abeokuta, Ogun State, Nigeria
Mailing address: Department of Estate Management, Faculty of Built Environment, University of Malaya, 50603, Kuala Lumpur, Malaysia
Tel: +60196520401
e-mail : olanrele@siswa.um.edu.my

Name: Rosli Bin Said
Senior Lecturer, Department of Estate Management, Faculty of Built Environment, University of Malaya,
Mailing address: Department of Estate Management, Faculty of Built Environment, University of Malaya, 50603, Kuala Lumpur, Malaysia
Tel: +60379676821
e-mail : rosli_alambina@um.edu.my

Name: Mohd Nasir Bin Daud
Associate Professor, Department of Estate Management, Faculty of Built Environment, University of Malaya,
Mailing address: Department of Estate Management, Faculty of Built Environment, University of Malaya, 50603, Kuala Lumpur, Malaysia
Tel: +60379676886
e-mail : mdnasir@um.edu.my