DIVERSIFICATION POTENTIALS OF COMMERCIAL REAL ESTATE INVESTMENTS IN METROPOLITAN LAGOS

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ABSTRACT

Appropriate selections and combinations of investments that make up portfolios that have high diversification potentials, minimize risks and maximises returns are increasingly gaining attention in the investment environment. This diversification potential can be achieved by possessing a portfolio of investments that are not affected in the same way by the ever-changing economic condition. This study, therefore, assessed the diversification potentials of commercial real estate investments (shops and offices) in five prime locations of Lagos metropolis. The study made use of data on the total returns on commercial real estate investments, derived from the annual average capital and rental values of the investments. The period of data coverage is from 2007 to 2018. Pearson's Product Moment Correlation analysis was used in determining the ideal combinations of investments. The statistical software used was SPSS, version 22. The result showed that the most ideal combination of investments is shops in Yaba and Lagos Island. These investments are also ideal for combination; offices in Yaba and shops in Ikeja, offices in Yaba and Ikeja, shops in Ikoyi and Ikeja. Thus, the study recommends that investors should consider including in their investment portfolios the identified ideal investment combinations.

Keywords: Commercial properties, diversification, investment portfolio, Lagos metropolis, returns.

INTRODUCTION

The primary aim of many investors is to maximise return on investment and minimize risk. Every rational investor would prefer higher returns to lower returns and lower risks to higher risks (Hargitay and Yu, 1993, Manganelli, 2015). This preference can be achieved through appropriate diversification strategies by selecting different investments that their performance differs in any economic condition. Olaleye (2011) describes diversification of property investment portfolio as the technique of varying investment possibilities to minimise the encompassed risks and maximise the return there from. It describes the combination of investments/securities within the same asset class. Olaleye (2011) further noted that diversification achieves the same objectives as asset allocation, which is maximising return with minimum risk. The implication of this to the investor is that investment diversification is the ideal way of minimizing risk and maximizing returns.

Hargitay and Yu (1993) noted that large institutional investors usually diversify their investment portfolios on three levels: amongst investment media, amongst the sectors of a particular investment medium, and amongst individual investment projects within a particular sector or a particular investment medium. This suggests that diversification of investments can be achieved in different ways.

Umeh, Otegbulu and Anule (2016) evaluated the diversification potentials on income and capital returns due to property type and geographic location of shops and offices in selected

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areas in Lagos. Unlike their study, the present study is focused on total returns on shops and offices investments in five commercial nerve centres in Lagos metropolis, namely: Yaba, Ikeja, Lagos Island, Ikoyi and Victoria Island. Umeh, Otegbulu and Anule (2016) also noted in their study that these areas represent a good spread of commercial nerve centres in Lagos Metropolis. Summarily, the investment practice of diversification is done to ensure that risk is minimized while returns are maximised (Umeh, Otegbulu and Anule, 2016). It is therefore important to assess the various combinations of commercial real estate investments and their locations, the ideal options for diversification that will maximise returns and minimise risk. Many international and local studies (Mueller, 1993; Eichholtz, Hoesli, MacGregor and Nanthakumaran, 1995; Cheng and Roulac, 2007; Olaleye, Aluko and Ajayi, 2007; Olaleye, 2011; Olaleye, 2016; and Berk, 2017) have also focused on widely used diversification strategies referred to as diversification by property type and geographic location. This reinforces the need to provide information on the diversification benefits of commercial property investments in identified commercial nerve centres of Lagos State. The results from the study will provide investors with essential information on the ideal combination of commercial real estate investments in the study areas.

LITERATURE REVIEW

Georgiev (2002) examined the investment benefits of real estate as a part of a diversified portfolio. Results from the study suggest that direct real estate investment provides diversification benefits, while securitized real estate investment does not. The study reached a twofold conclusion. First, real estate returns are determined by factors different from those driving the returns to other asset classes and hence may produce diversification benefits. Second, REITs investment is an inadequate substitute for direct investment in real estate.

Eichholtz, Hoesli, MacGregor, and Nanthakumaran (1995) investigated diversification by property and geographic type within a real estate portfolio using data sets from the United States of America and the United Kingdom. The principal issue addressed in the study was whether it is more effective to diversify across regions with a single property type or across property types within a region. They noted that it was possible to obtain a clearer answer to this question in the United States of America than in the United Kingdom, although the answer varies from property type to property type. The study posited that for retail property investments, diversification across regions is more effective; while this does not hold for office and office cum research and development properties. The study noted however that for the United Kingdom, the opposite result was obtained for retail property and diversification across both property types and regions was to be preferred for the other two property types. The study also noted that the results for the United States of America suggest that office and office cum research and development properties have similar performance across regions, whereas the retail sector has greater diversification across regions. In the United Kingdom, for the riskiest portfolios, diversification within London is almost as effective as countrywide diversification.

In investigating the effectiveness of geographic diversification among metropolitan areas in the United States of America, Cheng and Roulac (2007) revealed that the effectiveness of geographic diversification should not be overestimated. They noted in their study that this is because the marginal risk reduction from expanding into more cities diminishes quickly, making the choice of staying geographically concentrated a sensible portfolio strategy. Hence, one can decipher that geographic diversification may not deliver the ideal performance in all cases. This was also buttressed by the position of their study, that different types of properties exhibit different effectiveness in geographic diversification.

Berk (2017) considered diversification from a different standpoint by analysing returns from 1997 to 2016 of five real estate investment trust stocks listed on the New York Stock Exchange, in order to determine if there will be any benefits due to property type diversification. The study found that among the various portfolios, office and residential segment, as well as office and retail segment, do not provide any diversification benefit.

Olaleye, Aluko and Oloyede (2006) examined the various diversification strategies adopted in the Nigerian property market using data obtained from property investors in Lagos, Abuja and Port Harcourt. Results from the study showed that property type and geographic diversification were the preferred strategies in the Nigerian property market. However, the study observed that these strategies did not give the best protection to investors' portfolios against the risk situation in the market. Also, the results from the study revealed that the best strategy would be to adopt an efficient portfolio strategy and invest better proportions of a real estate portfolio in residential properties located in the Lagos metropolitan area.

Umeh and Oluwasore (2015) evaluated the performance due to the diversification of 3 and 5 bedroom detached residential property types in different geographic areas in Ibadan with a view to advising prospective risk-averse investors on the best combination of investments to consider investing on. Average income returns, capital returns and total returns of residential properties in four locations in Ibadan starting from the year 2002 to 2014 were determined using rental and capital values obtained from the archives of estate firms. Pearson's product moment of correlation was adopted to determine the correlation coefficients of several combinations of investment returns in their study. The study recommended based on the findings that income return risk-averse investors should consider combining 3-bedroom flats in Eleyele as a diversification option. The study also recommended for capital return and total return risk-averse investors, a combination of 5-bedroom in Bodija and 3-bedroom in Oluyole.

Another study by Umeh, Otegbulu and Anule (2016) examined different types of commercial property investments (shops and offices) in five different submarkets namely: Ikeja, Ikoyi, Lagos Island, Victoria Island and Yaba to determine the best property investment mix which will minimise risk. The study adopted Pearson's product moment of correlation method to the income and capital returns obtained for the period 2004 to 2013 in determining their various correlation coefficients. The findings of the study showed that in terms of diversification potentials for income returns from shops in different sub-markets; shops in Yaba and Victoria Island has the greatest benefit. In the case of income returns from offices in different submarkets, Lagos Island and Ikoyi showed the greatest potential for diversification. In the case of income return, the greatest diversification potential lies in the combination of shops and offices in Ikeja. Also, in the case of capital returns, the study found that the greatest potential lies with the combination of shops in Yaba and offices in Lagos Island.

RESEARCH METHODS

Primary data used in this study was sourced from the archives of estate firms registered with the Estate Surveyors Registration Board of Nigeria (ESVARBON) in Lagos metropolis. The number of estate firms considered was 192 out of the 382 firms. This was obtained using the online sample size calculator www.surveysystem.com/sscalc.htm to determine the sample size 95% confidence level and 5% confidence interval. In terms of the type of properties considered, data were collected on two types of commercial properties – shops and offices. Data was collected on a total of 200 properties. The data on the capital and rental values served as inputs in determining the total returns for the various commercial real estate investments(shops and offices in Yaba, Ikeja, Lagos Island, Ikoyi and Victoria Island).The period of data coverage for

this study ranges from 2007 to 2018. The long duration is to accommodate every business cycle that would have occurred over a long time. The total return for the real estate investment asset is expressed as,

$$TR_t = \left(\frac{(CV_t - CV_{(t-1)} - CExpt_t + \mathrm{CRpt}_{(t)} + NI_{(t)}}{CV_{(t-1)} + CExpt_t} \right) \times 100$$

Where: TR_t represents the total return in for the period under review (t)

CV_t represents the capital value at the end of the period under review (t)

$CExpt_t$ represents the capital expenditure (includes purchases and developments) in period (t)

$CRpt_t$represents the capital receipts (includes sales) in period (t)

NI_t represents the rent receivable during period (t), net of property management costs, ground rent, and other irrecoverable expenditure

Pearson's product moment of correlation was adopted in this study to assess the correlation coefficient of the total returns of commercial real estate investments. This analytical method adopted in this study was also used in a similar study by Umeh and Oluwasore (2015) as well as Umeh, Otegbulu and Anule (2016). The method is expressed as:

$$\boldsymbol{r} = \frac{\mathbf{n}\sum(\mathbf{xy}) - \sum\mathbf{x}\sum\mathbf{y}}{\sqrt{[\boldsymbol{n}\sum\boldsymbol{x}^{\mathbf{2}} - (\sum\mathbf{x})^{\mathbf{2}}][\boldsymbol{n}\sum\mathbf{y}^{\mathbf{2}} - (\sum\mathbf{y})^{\mathbf{2}}]}}$$

Where: n represents the number of class (or the number of observations of x)

x and y represent independent and dependent variables respectively

$\sum$x represents the summation of the independent variables respectively

$\sum$xy represents the summation of the products of the independent and dependent variables

$\sum x^2$ represents the summation of the squares of the independent variable

$\sum y^2$ represents the summation of the squares of the dependent variable

r is the correlation coefficient

Usually, the procedure is that if the computed value tends towards +1.00, the association between the investments is deemed to be a strong positive correlation, and thus is not an ideal combination to offer diversification benefits. If on the other hand, the value tends towards -1.00, the association between the investments is deemed to be a strong negative correlation, and thus, the investments are the ideal combination to offer diversification benefits.

DATA PRESENTATION AND ANALYSIS

Table 1: Average Total Returns for Shops and Offices in Selected Locations of Lagos Metropolis

	Shops					Offices				
Year	**Yaba**	**Ikeja**	**L/Island**	**Ikoyi**	**V/Island**	**Yaba**	**Ikeja**	**L/Island**	**Ikoyi**	**V/Island**
2007	11.9647	4.5242	0.1284	14.7071	17.2454	17.8670	2.9625	7.1520	3.5909	17.2454
2008	8.0899	11.4293	13.6021	4.4775	1.9487	3.4063	7.2261	8.8155	9.5234	1.9487
2009	9.9550	3.9035	0.1258	3.5303	14.1065	10.6158	7.3344	1.5557	9.8506	14.1065
2010	2.4277	11.1244	18.3049	11.1665	17.3242	14.0161	4.7151	10.7795	3.0966	17.3242
2011	15.4297	6.7114	0.1288	12.3888	13.1167	5.8519	15.9481	1.3770	13.3169	13.1167
2012	3.9927	7.8534	13.9745	12.5229	14.8970	10.4116	5.5581	10.9463	8.2830	14.8970
2013	3.8592	2.4852	0.1346	5.8815	10.2282	7.7794	0.0152	0.0268	2.4527	10.2282
2014	5.1347	25.7573	5.2905	2.6828	22.3048	1.0739	14.4044	1.3405	0.7649	22.3048
2015	4.9059	1.9460	2.7294	2.8615	0.4510	1.0660	0.2680	1.0518	2.3356	5.1825
2016	6.6150	1.1790	7.2270	7.7645	-0.2851	11.2790	-0.9994	2.0366	2.0957	-0.2723
2017	5.0202	1.8190	4.6476	5.2180	2.4407	5.3111	-1.3003	-4.1875	-2.3076	-0.3766
2018	0.7874	0.1137	0.0303	-0.0767	-0.4132	1.7653	0.4034	-3.1805	-1.4854	-0.5186

Source: Field Survey (2019)

Table 1 presents the total returns determined for the investments in the locations under consideration. It can be observed that the total returns for the investments in the various locations fluctuates, which is an indication of market volatility. This observation aligns with the findings of Lu and Mei (1999) that property returns in emerging markets are volatile.

Table 2: Combinations by Locations of Shop Properties

	Yaba Shops	Ikeja Shops	L/Island Shops	Ikoyi Shops	V.I. Shops
Yaba Shops	1	.006	-.352	.469	.250
Ikeja Shops	.006	1	.384	-.003	.647*
L/Island Shops	-.352	.384	1	.262	.105
Ikoyi Shops	.469	-.003	.262	1	.475
V.I. Shops	.250	.647*	.105	.475	1

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

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

There is a negative correlation for combinations of shops in Yaba and Lagos Island, Ikeja and Ikoyi, with correlation values of -0.352, -0.003, respectively. This means that the combinations of investments are not affected in the same way by influencing factors. Therefore, these combinations of shops are ideal options to offer diversification benefits. On the other hand, there is a positive correlation in the following combination of shops: Ikeja and Victoria Island, Yaba and Ikeja, Yaba and Ikoyi, Yaba and Victoria Island, Ikeja as well as Lagos Island, with correlation values of 0.647, 0.006, 0.469, 0.250, 0.384, Lagos Island and Ikoyi, Lagos Island and Victoria Island, Ikoyi and Victoria Island, 0.262, 0.105, and 0.475 respectively. These suggest that the combined investments are affected in the same way by influencing economic factors, and thus, they do not offer benefits due to diversification.

Table 3: Combinations by Location of Office Properties

	Yaba Office	Ikeja Office	L/Island Office	Ikoyi Office	V.I. Office
Yaba Office	1	-.160	.531	.179	.362
Ikeja Office	-.160	1	.229	.630*	.630*
L/Island Office	.531	.229	1	.470	.456
Ikoyi Office	.179	.630*	.470	1	.306
V.I. Office	.362	.630*	.456	.306	1

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

There is a negative correlation for the combination of offices in Yaba and Ikeja, with a correlation value of -0.160. This means that the combination of investments is not affected in the same way by influencing factors, and thus, are ideal options to offer diversification benefits. There is a positive correlation in the following combinations of offices: Yaba and Lagos Island, Ikeja and Ikoyi and Ikeja and Victoria Island, with correlation values of 0.531, 0.630, 0.630 respectively. Others includeYaba and Ikoyi, Yaba and Victoria Island and Ikeja and Lagos Island, which respectively have correlation values of 0.179, 0.362 and 0.229. The final combination of offices inLagos Island and Ikoyi, Lagos Island and Victoria Island, and Ikoyi and Victoria Island, with 0.470, 0.452, and 0.306 respectively. This means that the combined investments are affected in the same way by influencing economic factors, and thus, they do not offer benefits due to diversification.

Table 4: Combination of Property Types and Locations

	Yaba Shops	Ikeja Shops	L/Island Shops	Ikoyi Shops	V.I. Shops
Yaba Offices	.269	-.198	.179	.765**	.407
Ikeja Offices	.529	.718**	.041	.183	.631*
L/Island Offices	.085	.345	.742**	.621*	.427
Ikoyi Offices	.691*	.112	.104	.413	.280
V.I. Offices	.245	.641*	.088	.447	.979**

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

There is a negative correlation for the combination of offices in Yaba and shops in Ikeja, with a correlation value of -0.198. This suggests that the combination of investments is not affected in the same way by influencing factors, and thus, are ideal options to offer diversification benefits. There is a positive correlation in the following combinations of investments: offices in Yaba and shops in Ikoyi, offices in Ikeja and shops in Yaba, offices and shops in Ikeja, offices in Ikeja and shops in Victoria Island, offices and shops in Lagos Island, offices in Lagos Island and shops in Ikoyi, offices in Ikoyi and shops in Yaba, offices in Victoria Island and shops in Ikeja, offices and shops in Victoria Island, offices in Yaba and shops in Lagos Island, offices in Yaba and shops in Victoria Island, offices in Ikeja and shops in Lagos Island, offices in Ikeja and shops in Ikoyi, offices in Lagos Island and shops in Yaba, offices in Lagos Island and shops in Ikeja, offices in Lagos Island and shops in Victoria Island, offices in Ikoyi and shops in Ikeja, offices in Ikoyi and shops in Lagos Island, offices and shops in Ikoyi, offices in Ikoyi and shops in Victoria Island, offices in Victoria Island and shops in Yaba, offices in Victoria Island and shops in Lagos Island, offices in Victoria Island and shops in Ikoyi, offices and shops in Yaba with correlation values of 0.765, 0.529, 0.718, 0.631, 0.742, 0.621, 0.691, 0.641, 0.979, 0.179, 0.407, 0.041, 0.183, 0.085, 0.345, 0.427, 0.112, 0.104, 0.413, 0.280, 0.245, 0.088, 0.447, and

0.269, respectively. This implies that the combinations of investments are affected in the same way by influencing factors. Thus, the investment combinations are not ideal for diversification. The results from the analysis, for the best combination of investments, indicate that it lies with a combination of shops in Yaba and Lagos Island having a correlation value of -0.352. These investments also form an ideal combination; offices in Yaba and shops in Ikeja, offices in Yaba and Ikeja, shops in Ikoyi and Ikeja with the following correlation values of 0.198, -0.160 and -0.003 respectively. Other combinations of investments analysed did not provide diversification benefits when combined. The result obtained is partially in agreement with the result from the study of Umeh, Otegbulu and Anule (2016) where they analysed the best diversification potential due to a combination of commercial investment options in Lagos using income returns and capital returns. Their study indicated that shops in Yaba and Victoria Island yield the greatest benefit with a correlation coefficient of -0.808. This is followed closelyby shops in Yaba and Lagos Island with a correlation coefficient of -0.772. In the case of income returns from offices in different submarkets, Lagos Island and Ikoyi yielded the greatest potential with a correlation of -0.764. Also, the greatest potential in the case of income returns for the combinations of different types of investments in different submarkets is the combination of shops and offices in Ikeja with a correlation coefficient of -0.555. In terms of the potential for capital returns due to diversification, the study found that the greatest potential lies with the combination of shops in Yaba and offices in Lagos Island with a correlation value of -0.516.

CONCLUSION AND RECOMMENDATIONS

The commercial property investment combination that has the greatest diversification potential in the study areas is shops in Yaba and Lagos Island. The other ideal combinations include a combination of offices in Yaba and shops in Ikeja, a combination of offices in Yaba and Ikeja, a combination of shops in Ikoyi and Ikeja.

This paper recommends that investors considering developing their investment portfolio with commercial real estate in the study area should include in their investment portfolios a combination of shops in Yaba and Lagos Island, a combination of offices in Yaba and shops in Ikeja, a combination of offices in Yaba and Ikeja, and a combination of shops in Ikoyi and Ikeja. These pairs of investments possess potential diversification benefits; and will be useful to the investors in periods where the economic climate may not be favourable for all investments.

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