Mainstreaming Information Communication Technology (ICT) in Real Estate Practice in Nigeria: Ms Excel for Valuation and Investment Advice

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Mainstreaming Information Communication Technology (ICT) in Real Estate Practice in Nigeria: Ms Excel for Valuation and Investment Advice

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Abstract

Recent study revealed that firms in Minna are not inclined to using MS Excel for Valuation and investment advice. A purposive case study of recent lease of Obasanjo Shopping Mall by Niger State Development Company, (NSDC) was undertaken to demonstrate and illustrate the use of MS Excel for the valuation of freehold and leasehold interests. Marshal's equated yield /DCF hybrid valuation model was adopted on MS Excel worksheet platform to carry out the valuation using data obtained from the NSDC and prospective leaseholders as well as property market. Two growth factor charts were constructed for varied and regular review patterns in MS Excel Spreadsheet based on equated yield 13%, with 2% mark-up on gilts, all risks yield 6.5% and other pertinent valuation data. Intelligent variations and reviews of rents, made possible in MS Excel, coupled with other valuation parameters were applied to arrive at higher capital values of N148.20Million and N87.1Million respectively for the NSDC and the prospective Leaseholder as against N102Million and N66.40Million from regular review pattern. The result formed the basis of an agreement under which the 30-year lease of the commercial property was secured. The conclusion is that MS Excel is a versatile tool for accurate Valuation and investment advice and it is recommended that valuers should seek to be trained and retrained to use various versions available.

Keywords: Real Estate Practice, MS Excel, Valuation, Spreadsheet, Equated yield.

Introduction

Since Kakulu (2003), little had been added to emphasize the critical nature and relevance of Information Communication Technology, ICT to real estate practice in Nigeria. This fact was re-established and accentuated by the 1st and 2nd Train-the-Trainer Workshops organized by NIESV Learning Centre in collaboration with ESVARBON in Port Harcourt and Minna in 2014 and 2015 respectively. Valuation and Investment Appraisal is an area of Estate Surveying and Valuation practice that could be greatly facilitated and enhanced through the use of ICT.

Academics and Practitioners in real estate are an integral part of the growing global users of special computer software applications and programmes including Word perfect, Excel, Powerpoint and others. This trend is obvious, as a visitor to these offices would effortlessly observe hi-tech computers conspicuously displayed from simple ones to sophisticated hardware. It can be reasonably inferred that estate firms are equipped with ICT assistive tools for 21st century real estate practice.

As clients and users of ESV services are becoming increasingly sophisticated,

demanding more complex professional advices, it is incumbent on ESVs to break new grounds in service delivery. Accuracy and timely supply of valuation advice are common demands by banks and financial institutions, governments or non-government agencies. (Babawale and Omirin,2012; Charles-Afolabi and Olatunji, 2016). Therefore, timelines, accuracy, reliability and dependability guaranteed by the use of modern technologies are good reasons why the study will be of benefits to both the providers and users of valuation services alike.

ICT in property valuation

Jenkins (2002) had echoed a rhetoric question: in what form would the valuation profession survive in the 21st century? Same question was earlier posed by Appraisal Institute (2001). These questions are germane because new software packages that purport to do valuation and Appraisals have been, and are being developed.

These software packages do not sufficiently address emerging needs and the complex legal relationships involved in the valuation of property rights. It is therefore important for Valuers to be trained on how to realign valuation with the needs of clients, with dexterity and flexibility as French (2008) has proposed. Aluko (2010) asserts quite rightly that valuation should be so fashioned towards the clients' specific needs. Several desktop based applications are available. These include MS Word for word processing useful for report writing and other documentations, MS Powerpoint for presentation. Others are PDF for protection and preservation of data integrity and MS-Excel – for quantitative and statistical analysis.

Surveyors who wish to be competitive in the global practice will find out that in particular, MS-Excel package is a software application without which any practice will find it difficult if not impossible to survive in the 21st Century.

Strengths and Weaknesses of ICT Use

ICT has its strengths and weaknesses. The weaknesses include cyber security challenges, frustration from data loss, data theft, identity theft, password loss or leakage, hacking and Data storage challenges (Barnat, 1994). The general global concerns on Cyber Security brought up some home truths about the dangers inherent in the use of cyber space. All these are dangers associated with ICT either in Offline or Online usages. These weaknesses notwithstanding, the global relevance and utility of ICT use has not been diminished in any significant sense as more and more uses are being made of it. So, Bender (1994) had asserted that generally the world must rely on Technology to solve environmental problems. One of such possibilities is in Valuation.

MsEXCEL in Real Estate Education and Practice

First among the prime computer applications is the MS Excel which offers a means of quantitative analysis as well as Statistical Analysis in spreadsheet formats. By these two features, MS Excel becomes an indispensable working tool for Valuation and Investment Appraisal in spreadsheet format as demonstrated by French (2008, 2013 and 2015). Olatunji (2010) also applied the worksheet format to establish that medium-term property rights have values that can be assessed. There are many new software packages that perform some Valuation functions; Present Value of ₦1 (PV), Amount of ₦1 (A), Years Purchase (YP) calculations are some of these functions; Parry's Valuation Table containing millions of calculations is now available in soft form with Equated Yield, IRR and other capabilities. It was noted by Davidson (1982), that the use of valuation tables, (and by extension valuation software applications) is not to replace the work of the Valuer; rather it is to save the valuer's time from distraction by intricate mathematical problems.

Historical Perspectives in Valuation

Valuation Practice had evolved over the years since the first formal Valuation exercise in 1695 precisely 322 years ago as noted by Scarret(2008), when an Act of Parliament in the United Kingdom (UK) stipulated a rental multiplier as basis of valuation for compensation. On that occasion, freehold and leasehold property rights were affected by compulsory demolition of properties for inland navigation channels. Since then, valuation practice had evolved through traditional or conventional approaches to contemporary approaches.

The criticisms of conventional approaches (term and reversion, layer-hardcore) are enumerated by Ogunba (2013), from Baum and Crossby (1995). Ogunba, (2013), in summary identified ten criticisms of the conventional valuation approaches. Only one of the identified criticisms was addressed sufficiently by the use of Sinking Fund (SF), Double Sinking Fund, Annual Equivalent (AE) approaches.

Three main results emanating from the criticisms are as follows:

- Introduction of explicit growth derivable from 3 formulae to replace implicit growth.
- Introduction of review patterns of predetermined paths of rent gearing; and
- All risks yield is upstaged by Equated yield.

In the opinion of Ogunba(2013) the Discounted Cash Flow DCF-based contemporary methods conjoined with Equated Yield (Marshall's) and other growth explicit models fully addressed the ten criticisms and are accordingly recommended for use in general practice in Nigeria and other Commonwealth countries. This paper demonstrates the use of MS Excel in conducting Valuation of property interests (freehold and leasehold, two legal estates recognized by law), using the contemporary Growth Explicit Model. It will use Marshall's Equated Yield Hybrid with Discounted Cash-Flow (DCF) format as well as Conventional formats with simple illustration obtained from a case study in Minna.

The illustration is selected for it contains substantial unexpired term. (Very short leases of one to two years which are proved by Olatunji (2010) to be overwhelmingly popular in Minna and its environs, amount to little more than nominal sums and may not portray sufficiently the features that the illustration seeks to demonstrate).

The Problem

A recent study by Olatunji and Ajayi (2017) suggests that ESVs are not inclined to applying the capabilities of these special computer software applications and programmes, in particular Microsoft Excel, to solve technical problems involving valuation and investment appraisals, in spite of the widely acknowledged fact that the age of ICT has brought into the business world, new and better techniques of performing professional tasks. The need by NSDC to lease out Obasanjo complex on mutually agreeable terms provided the impulse for valuation and investment appraisal with accuracy, speed and efficiency.

The aim of this study is to demonstrate the use of computer application of Microsoft excel for valuation and pre-investment appraisal. The main objective set up to address the aim is to demonstrate through a case study of Obasanjo Shopping Mall, the use of Excel Computer program and application for the valuation and Investment appraisal of Obasanjo Shopping Mall in Minna. Conclusion and recommendations will be drawn for training, retraining and popularizing the use ICT for valuation and investment appraisal.

Research Design

The research was designed to run in two consecutive stages coupled together to

illustrate the use of MS Excel for valuation. The ascertainment stage, split into two objectives to ascertain the form, composition, and relevance of ICT hardwares acquired by ESVs and establish the frequency and level of use of these expensive equipments, was carried out by Olatunji (2017) as a prior research work. This paper constitutes the demonstration stage which entails the use of transaction data from the lease of Obasanjo Commercial Complex in Minna as an illustration of the application of Microsoft Excel, to solve a specific ESV practice problem that is, Valuation and Investment advice.

Research Methodology

The study is based on primary and secondary data with special emphasis on the analysis of a specific case study to illustrate the application of Microsoft Excel in Valuation. Primary data was obtained from ESV firms in Minna. Questionnaires were purposively administered on all estate firms operating in the study area; 15 firms responded. A special but brief interview-enquiry was conducted on Niger State Development Company and the private estate firm involved in the Valuation of Obasanjo Shopping Complex to obtain basic leasing terms and conditions and valuation details. The bulk of data was presented in tables; bar charts and graphs were also used for analysis and interpretation of field data.

Data Presentation and Analyses

Applied valuation requires an intelligent deployment of valuation theories, principles and concepts to solve real time problems, Olatunji (n.d.). Real time business decisions are subject to privacy and confidentiality, but the identities of the firms that supplied information could not be revealed without compromising their privacies. They are however treated with serial identities, and this is considered sufficient for the purpose of analysis of vital facts and data supplied by them.

The Case Study

Over the years of its existence as a State since 1976, Niger State Government had acquired vast landed properties, in various locations. In particular, choice locations were acquired for commercial developments, among which is Obasanjo Commercial Complex.

Figure 1. Obasanjo Shopping Complex, Minna

Source: Google-enabled locational map, 2015

The site, seen in Fig.1 was originally used, up till 1996, as *Kasuwan Dare* but was transformed to a complex comprising 49 lock-up shops, directly run by Niger State Urban Development Board from 1998. However, subsequent authorities took the bold step to set up the Niger State Development Company,(NSDC) with a mandate to develop and manage all landed properties in and outside the State. As part of NSDC strategic management plan, Obasanjo Complex was to be leased to a private firm at a rent to be negotiated around N**5,000,000** p.a. Market evidence supports the expectation of N7,50**0,000** p.a. Thus emerged an Investment Valuation Appraisal scenario to determine the values of the interests of both prospective lessee and lessor and offer them advice accordingly.

The central management strategy was to free the State Government of the burden of direct property management, by allowing a nominated private Estate Firm to handle that aspect. As a guide the Federal Government bonds was adopted as reliable basis of investment comparison. Through a tripartite, partnership, the role of the Valuer is to advise the parties as to the value of their respective interests regarding the proposed scenarios. It was adjudged to be a valuation problem involving NSDC as Freeholder, and the Private Estate Firm as prospective Leaseholder. At stake was a lease term of 30years in favour of the Estate Firm under specified lease agreement.

The Valuation Variables

The variables in the valuation process must be clearly understood and analyzed. In this case study, the Valuer was in a position to determine the all-risks yield (k) from property market experience and Analysis of Sales (ANOSA). Hence, rather than mere rental forecasts, it was possible to derive market-driven rental growth rate, (g). The leaseholder-investor in this case was contented with a margin of 2% above the Federal Government Bonds. It was reasonable to consider a rental review pattern, attractive to both parties since rent review is a permanent feature of the commercial property market. Two options were put forward : constant review and variable reviews with a predetermined path of rent gearing.

The objective of valuation was to determine the value of incentives granted to the leaseholder under a long term leasehold agreement contracted for an unexpired term of 30 years. From Baum and Crosby (1995), Ajayi(1998), Ogunba(2013), all following on Marshal (1986), the implied growth rate, g, is obtainable from any of the three formulae:
Theoretically, if the valuer is able to obtain or derive e, k and t, he could deduce the rate of growth associated with rental income from any of equations 1 to 3. From this, the table of implied growths was constructed as in Table 1. The Microsoft Excel Worksheet or Kingsoft excel worksheets are very versatile platforms to perform these calculations.

$$g = \{(e-k)*[((1+e)^t-1)/e]+1\}^{1/t} - 1 \qquad \qquad ....1$$

Where the variables are defined as:

e   equated yield deduced from gilt+2per cent risk premium,
              all risks yield capitalization rate obtained from comparables
k   or ANOSA
t   rent review pattern/interval
g   implied growth
A   Growth Factor

OR $(1+g)^t$ Equals   <u>YP perp @ k - YPt yrs @ e</u> 2

$$\text{YP perp @ k} \quad X \quad \text{PVt yrs @ e}$$

OR $\quad k = \quad e-(ASF@e)\{(1+g)^\wedge t-1\}$ ………..3

The Inputting Procedure

An excel worksheet is opened showing its network of rows and columns to be designated as Sheet 1, for easy reference. In column 1 are the successive years of the lease term, designated as n, which in this case runs from 1 to 30 years, presented in 30 rows. To obtain **e**, data on gilt edged securities within the economy is needed. In Nigeria, the FG bonds and CBN Treasury Bills are often taken as the perfect risk-free yields, equivalent to a gilt, with a current rate of about 11.0% for 2018 maturing bonds, in Column 2. All other investment platforms in Nigeria can only have higher rates commensurate with their comparative risk contents. A mark-up of 2% in Column 3 is adopted for the property type in this case study. The all risks yield, k, is the market capitalization rate obtained from recent transaction analysis of sales, ANOSA. Taking due cognizance of valuation rules respecting comparables, k .

was found to be 6.5% p.a. A rent review pattern must be inferred, in Column 6, if not available. Rental evidence in Minna point to 2 to 3 years and 4- 5 years of gearing for residential and commercial properties respectively. Five yearly interval is adopted here and this is well supported in practice and by the property market. The growth rate implied within this set-up is derived from Marshall's DCF/Equated Yield hybrid, and it produces a growth factor; both are presented respectively in columns 11 and 12.

Table 1 is the shortened growth factor table constructed on the basis of constant rent reviews in 5 yearly intervals. This option is in alignment with the property market, consistent with practice experiences in Minna and acceptable to the parties in this Case study. However it is not by any means the only option. Varying and variable review patterns are not uncommon

TABLE 1: Table Of Implied Growth And Growth Factor With Regular/Constant Review Pattern

1	2	3	4	5	6	7	8	9 $(((1+e)^\wedge t)-1)/e)$	10	11	12. Growth factor,
N	Gilt	Mp	E	K	T	e-k	$(1+e)^\wedge t$		1/t	G	A
1-5	0.11	**0.02**	0.13	0.065	5	0.065	1.842435	7.480271	0.2	0.072833	1.072833
6-10	0.11	**0.02**	0.13	0.065	5	0.065	1.842435	7.480271	0.2	0.072833	1.524729
11-15	0.11	**0.02**	0.13	0.065	5	0.065	1.842435	7.480271	0.2	0.072833	2.166972
16-20	0.11	**0.02**	0.13	0.065	5	0.065	1.842435	7.480271	0.2	0.072833	3.079738
21-25	**0.12**	**0.02**	0.14	0.065	5	0.075	1.925415	7.610104	0.2	0.083858	5.42522
26-30	0.125	0.02	0.145	0.065	5	0.08	1.968011	7.675935	0.2	0.089355	9.255545

Source: Author, 2015

To capture this possibilities, a table of Varying rent review pattern is constructed. (Table 2). The growth factor is based on the Amount of N1 table,

$A = (1+g)^n$,

where **g** is the implied growth rate and **n** is the number of years of growth.

By mutual agreement an alternative plan of growth was proposed in a step-wise format: 5-yearly rent review for the first 10 years; 3-yearly rent review for the next 10 years and 2-yearly rent review for the last 10 years. This is amply reflected in column 6 of Table 2.

TABLE 2: Implied Growth And Growth Factor   With Varied Review Patterns

1	2	3	4	5	6	7	8	9	10	11	12. Growth factor $A=(1+g)^n$
N	Gilt	Margin	E	K	T	e-k	$(1+e)^t$	$\frac{(1+e)^t-1}{e}$	$1/t$	G	n
				0.06		0.06	1.84243	7.48027		0.07283	
11	0.11	0.02	0.13	5	5	5	5	1	0.2	3	1.072833
				0.06		0.06	1.44289		0.33333	0.06895	
12	0.11	0.02	0.13	5	3	5	7	4.4069	3	2	2.225874
				0.06		0.06	1.44289		0.33333	0.06895	
14	0.11	0.02	0.13	5	3	5	7	4.4069	3	2	2.543416
				0.06		0.06	1.44289		0.33333	0.06895	
15	0.11	0.02	0.13	5	3	5	7	4.4069	3	2	2.718791
				0.06		0.06	1.44289		0.33333	0.06895	
18	0.11	0.02	0.13	5	3	5	7	4.4069	3	2	3.320863
				0.06		0.06	1.44289		0.33333	0.06895	
19	0.11	0.02	0.13	5	3	5	7	4.4069	3	2	3.549845
				0.06		0.07				0.07726	
20	0.12	0.02	0.14	5	1	5	1.2996	3.14	0.5	5	4.430487
				0.06		0.07				0.07726	
21	0.12	0.02	0.14	5	2	5	1.2996	3.14	0.5	5	4.772809
				0.06		0.07				0.07726	
22	0.12	0.02	0.14	5	2	5	1.2996	3.14	0.5	5	5.14158
				0.06		0.07				0.07726	
23	0.12	0.02	0.14	5	2	5	1.2996	3.14	0.5	5	5.538844
				0.06		0.07				0.07726	
24	0.12	0.02	0.14	5	2	5	1.2996	3.14	0.5	5	5.966804
25	0.12 5	0.02	0.14 5	0.06 5	2	0.08	1.31102 5	3.145	0.5	0.08240 5	7.240058
26	0.12 5	0.02	0.14 5	0.06 5	2	0.08	1.31102 5	3.145	0.5	0.08240 5	7.836673
27	0.12 5	0.02	0.14 5	0.06 5	2	0.08	1.31102 5	3.145	0.5	0.08240 5	8.482452
28	0.12 5	0.02	0.14 5	0.06 5	2	0.08	1.31102 5	3.145	0.5	0.08240 5	9.181446
29	0.12 5	0.02	0.14 5	0.06 5	2	0.08	1.31102 5	3.145	0.5	0.08240 5	9.938041
30	0.12 5	0.02	0.14 5	0.06 5	2	0.08	1.31102 5	3.145	0.5	0.08240 5	10.75698

Source: Author, 2015   **Shortened to reflect varying pattern

Results and Discussions
Freehold Interest under Constant Rent Review Patterns

The value of the Freehold interest under a regular 5-yearly review pattern is derived in Table 3 through 9 columns. For clarity and ease of reference, the columns are numbered 1 to 9. The rent is receivable annually, and the valuation process is performed row by row representing successive years or periods of lease. The growth factor is taken from the growth factor table and applied on the rent received to derive the projected rent in

Column 6. The PV of freehold interest in column 9 is derived from product of Columns 6, 7 and 8. Although rents are payable in advance in Minna, the appropriate payment plan agreed between the parties was worked into the programme.

The resulting capital value of the Freehold interest is N102.00 million. Notionally, it is assumed that the Freeholder will sell off his interest after the holding period of 30 years. This is to prevent inconveniently lengthy cash flows, consolidated and designated as period 31+ years.

Table 3: NSDC's Freehold Interest under Regular Rent Review Patterns

1	2	3	4	5	6	7	8	9
		n, def"rd yrs			Projected rent		PV for defered	PV of
Years	T		Rent	Growth	rent	YP 5yrs	yrs	Freehold
review Pattern	Review Years		Received N'000	Factor	Rent N'000	@ e	@ e	
1 to 5	5	0	5	1.072833	5.364165	3.974471	1	21.31972
6 to 10	5	5	5	1.524729	7.623645	3.974471	0.54276	16.4456
11 to15	5	10	5	2.166972	10.83486	3.974471	0.294588	12.68581
16 to 20	5	15	5	3.079738	15.39869	3.974471	0.159891	9.78558
21 to 25	5	20	5	5.42522	27.1261	3.974471	0.086782	9.356165
26 to 30	5	25	5	9.255545	46.27773	3.974471	0.047102	8.663438
31+		30	7.5	14.1987	106.4902	8.69231	0.025565	23.66419
							n=30	
							$\sum$ PV	101.9205
							n=1	

Source: Author's Case Study, 2015

NSDC's Freehold Interest under Varied Rent Review Patterns

Under a varied rent review pattern, the calculation of freeholder's interest is slightly different. Rows have to be structured in accordance with different terms or intervals of rent gearing. The columns are also extended to allow the serial review and years of review distinctively
.

Table 4:Freehold Valuation With Varied Rent Review Patterns								
1	2	3	4	5	6	7	8	9
	Years	T	Rent	Growth	Projected Rent	Yp T Years	Pv For	Pv Of
	Review		Received	Factor	Rent	@ E	Def 'Rd Yrs	Freehold

	Pattern		₦ Million		₦ Million		@ E	₦ Million
1st 10yrs	1 To 5	0	5	1.072833	5.364165	3.517231	1	5.754853
	6 To 10	5	5	1.524729	7.623645	3.517231	0.54276	6.309038
2nd 10 Yrs	11to13	10	5	2.225874	11.12937	2.361153	0.294588	7.297714
	14to16	13	5	2.718791	13.59395	2.361153	0.204165	7.54574
	17to19	16	5	3.320863	16.60432	2.361153	0.141496	7.802196
	20	19	5	4.772809	23.86404	0.884956	0.098064	11.16934
3rd 10yrs	21-22	20	5	5.14158	25.7079	1.668102	0.086782	11.47082
	23-24	22	5	5.966804	29.83402	1.668102	0.067963	12.09839
	25-26	24	5	7.836673	39.18336	1.668102	0.053225	16.34372
	27-28	26	5	9.181446	45.90723	1.668102	0.041683	17.56923
	29-30	28	5	10.75698	53.78491	1.668102	0.032644	18.88663
30+	30+	30	7.5	11.64341	87.32556	15.38462	0.025565	25.99371
							$N=30$	
							$\sum Pv$ $N=1$	*148.2414*

Source: Author's Case Study, 2015

Private Firm's Leasehold Interest under Constant Rent Review Pattern

The value of the private Estate firm's leasehold interest under a regular 5-yearly review pattern is derived in Table 5 through 10 columns. For clarity and ease of reference, the columns are numbered 1 to 10 reflecting the relative complexity of computing leasehold interests. The rent is receivable annually, and the valuation process is performed row by row representing successive years or periods of lease. The growth factor is taken from the growth factor table and applied on the rent received to derive the projected rent in Column 5. The PV of freehold interest in column 10 is derived from the product of Columns 7, 8 and 9; the summation is N66.40Million representing the leasehold value.

1	2	3	4	5	6	7	8	9	10
TABLE 5: LEASEHOLD VALUATION WITH CONSTANT RENT REVIEW PATTERN									
Years review pattern	t	Rent Received ₦ Million	Growth Factor	Projected rent Rent ₦ Million	Fixed rent ₦Million	Profit rent ₦ Million	YP 5yrs @ e	PV for defered yrs @ e	PV of Leasehold ₦ Million
1 to 5	0	7.5	1.072833	8.046247	5	3.046247	3.517231	1	10.7144
6 to 10	5	7.5	1.524729	11.43547	5	6.435468	3.517231	0.54276	12.2854
11 to15	10	7.5	2.166972	16.25229	5	11.25229	3.517231	0.294588	11.6589
16 to 20	15	7.5	3.079738	23.09804	5	18.09804	3.517231	0.159891	10.1778
21 to 25	20	7.5	5.42522	40.68915	5	35.68915	3.517231	0.086782	10.8935
26 to 30	25	7.5	9.255545	69.41659	5	64.41659	3.517231	0.047102	10.6718
								n=30	Σ
								$\sum PV$	66.4018

									n=1	

Source: Author's Case Study, 2015

Private Firm's Leasehold Interest under Varied Rent Review Patterns

The resulting capital value of the Private firm's Leasehold interest is N87 million if a structured rent review pattern is agreed as shown in Table 6. This is made possible by the possibility of corresponding rent gearing arrangement that might be in original tenancy agreements with prospective subtenants.

The growth is more rapid while the tenant would pay fixed rent as agreed. For the freeholder, though the rent is constant, the growth rate ensures that projected rent would accumulate more rapidly. A comparison of the two rent gearing options

revealed that stepwise variations of rent revision offer favorable results to both the State Government and the Property firm: N148million as against N102million and N87million as against N66.40million for the two parties respectively. Thus, intelligent variations and review of rents, made possible in MS Excel, would clearly show improved rental incomes for both parties to the transaction. Should either party choose to sell, mortgage or insure its own interest soon after the deal was concluded, the valuation provides an informed basis for rapid professional advice on the values of their respective interests.

TABLE 6. LEASEHOLD VALUATION WITH VARIED RENT REVIEW PATTERNS

		1	2	3	4	5	6	7	8	9
	Years	t	Rent	Growth	Projected rent	Fixed	Profit rent	YP t years	PV for	PV of
	review		Received	Factor	Rent	Rent		@ e	def 'rd yrs	Leasehold
	Pattern		N'000		N'000	N'000	N'000		@ e	
1st 10yrs	1 to 5	1	7.5	1.325	9.935	5	4.935	3.517	1.000	17.359
	6 to 10	5	7.5	1.883	14.121	5	9.121	3.517	0.613	19.675
2nd 10 yrs	11to13	10	7.5	2.226	16.694	5	11.694	2.361	0.333	9.191
	14to16	13	7.5	2.543	19.076	5	14.076	2.361	0.231	7.667
	17to19	16	7.5	3.321	24.906	5	19.906	2.361	0.160	7.515
	20	19	7.5	3.550	26.624	5	21.624	0.885	0.111	2.121
3rd 10yrs	21-22	20	7.5	4.773	35.796	5	30.796	1.668	0.098	5.038
	23-24	22	7.5	5.539	41.541	5	36.541	1.668	0.077	4.681
	25-26	24	7.5	7.240	54.300	5	49.300	1.668	0.060	4.946
	27-28	26	7.5	8.482	63.618	5	58.618	1.668	0.047	4.606
	29-30	28	7.5	9.938	74.535	5	69.535	1.668	0.037	4.279
									n=30	
									∑ PV	87.0779
									n=1	
Source: Author's Case Study, 2015										

Conclusion

MS Excel Worksheet is a platform for speedy, accurate and efficient valuation

appraisal and advice that would be otherwise cumbersome and slow, using Marshal's DCF/Equated Yield hybrid or

any other Valuation approach . Numerous dimensions and complexities expected to be interpreted through valuation and appraisal can effectively be facilitated by MS Excel. The basic requirements are to convert all arguments into numerical or quantitative language and then, appropriate functions in excel could be found to compute the resulting figures.

More specifically, much valuation data and corresponding information were provided and displayed for visual and analytical purposes while growth is constructed more explicitly and efficiently than in conventional formats. The discount rate that represents investors' target rate, termed equated yield, was distinguished from the growth implicit all risks yield.

The equated yield enabled a cross-investment comparison between different forms of property rights for a more direct investment advice. Special circumstances or problems of cashflow were structured into the valuation process on Excel platform. For instance, 3-year rent review pattern under 10 years will leave a residual term of 1 year which was conveniently and distinctly calculated as year 20 in Table 4 and Table 6 for NSDC and the Private firm respectively.

The main weakness of DCF technique lies with the infinitely long cashflow projections, possible for freehold calculation or leasehold with long unexpired term. This was easily overcome by assuming a holding period, (which in the case study coincides with the lease-term of 30 years) after which the investment was anticipatorily outrightly sold. Specific problems affecting cashflow were factored in and the results seen instantly, giving room for iterations where necessary. The application of MS Excel empowered the ESV to scrutinize a range of intelligent variations and reviews of rents that would result in improved rental incomes for both parties to the transaction.

It could be concluded that the MS Excel is quite helpful to the Estate Surveyor and Valuer for Valuation and investment analysis. It is therefore recommended that Surveyors should endeavor to be further trained in the spreadsheet MS Excel applications and other compatible capabilities.

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