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A critical analysis of valuation methods used by property professionals in a South African context

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A CRITICAL ANALYSIS OF VALUATION METHODS USED BY PROPERTY PROFESSIONALS IN A SOUTH AFRICAN CONTEXT.

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A Research Report Submitted to the Department of Building & Quantity Surveying , Faculty of Architecture , University of the Witwatersrand.

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In Partial Fulfilment of the Requirements for the Degree of Master of Science (Property Development).

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by

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CHAPTER 1

INTRODUCTION

1.1 Background

Valuation is a broad topic which embraces many aspects of property, such as : Geography, Law , Economics and Socio-Economics. For the purpose of this report it was decided not to focus on valuation as a profession dealing with all these subjects, but rather to concentrate critically on the valuation methods and their most popular use.

Property is an economic product which makes it vulnerable to the markets economic forces. This is a concept that property investors of old have battled to come to terms with as they have been used to certainty, the certainty of ever-increasing values.
The discovery of decreasing values and total illiquidity was almost beyond their comprehension and certainly beyond their willingness to accept.
They still believed that real estate was safe, secure (without regard to the relativity of those terms) and they reacted adversely when valuers proved as incapable as the market in finding any stability (***ROTHWELL,G*:- February 1994)**

In property valuation the valuer aims for accuracy although it is well accepted that valuation is based on interpretation and opinion, therefore the view of one competent valuer is not necessarily the same as that of another equally competent valuer (***SCARRETT,D*:- 1991, pg 84).**
Judge Megarry found in a court case that he had to deal with the matter generally rather than with exact mathematics and had to bear in mind that 'valuation was an art rather than a science' (***MEGARRY*:- Violet Yorke Ltd v. Property Holding and Investment Trust Ltd.).**

In recent years critical attention has been given to valuation methods both from within the valuation profession as well as from other quarters due to the large amounts of money invested into the property market.

It is therefore the intention of this research report to draw from the markets theoretical and practical resources, and transform this knowledge into a guide for making property valuations.

1.2 Terminology

In order to understand the full meaning of the word *property valuation*, it is important to include a section that deals with the subject in its entirety.

1.2.1 Definitions

Property Property in its simplest form means, land and all improvements attached to it.

Valuation The estimation of the value of an asset on a certain date, given the purpose of the valuation.

Value Value is a characteristic of an economic product. Since most types of property are productive and are scarce in relation to demand, buyers are prepared to give money or some other economic product, to own them. Obviously value is not an attribute of property, but is ascribed to it by individual persons. In other words, value may be described as the outcome of human cognitive processes (***MARITZ,N.G:- 1989,pg 47).***

Market value The estimated amount for which an asset should exchange on the date of valuation between a willing buyer and a willing seller in an arms length transaction after proper marketing wherein the parties had each acted knowledgeably, prudently and without compulsion. ***(MARTEN,R.S:- February 1993,pg 7.)***

Because market value is the outcome of human economic behaviour among buyers and sellers in the market situation, it is logical to state that the valuer is in fact an interpreter of human economic behaviour.
Estimates of market value must be made in terms of a market and market conditions as they are actually expected to exist on the date of valuation , irrespective of whether there is an actual sale or not. The estimation of market value takes place under conditions of change and uncertainty, estimates are therefore only valid for a relatively short period of time ***(MARITZ,N.G:- 1989,pg 53)***.

Supply and Demand.

It is important to know that the following four factors of value i.e. utility, scarcity, desire and purchasing power, are the underlying forces that determine supply and demand.
Value is quantified by a price and the mechanism through which this price is derived, is the relationship between price and the principles of supply and demand.
Supply and demand are in fact equated at any particular time by some level of price.
At any given time, *other things being equal*, an increase in demand or decrease in supply will cause prices to rise ; conversely, any decrease in demand or increase in supply will cause prices to fall . Therefore, whatever the given demand and supply, in a freely operating market, price will ration the supply and match it to the demand ***(BRITTON, DAVIES,JOHNSON:-1989,pg 16)***.

In summary there are typically , four interdependent economic factors which create value: Utility, Scarcity, Desire and Effective purchasing power. All four factors must be present for a property to have value ***(MILGRIM,M.R:-9th edition,pg 22)***.
These four economic factors are the underlying forces that create supply and demand, which in turn determines value.

To illustrate the point lets look at the following example :

- When the South African rugby team made it into the Rugby World Cup 95' final, the desire of those South Africans who had the ability to participate in the ticket market and purchase tickets for the game, in order to satisfy their need to experience history, enjoyment, etc, had driven up the demand for tickets.

  Also due to the scarcity of the number of tickets available, supply being limited to 5000 tickets on the black market(free market), people in the market were forced to bid up the price of the ticket, to the point where only five thousand people were prepared to pay the price being bid. At this point , price in the market reaches equilibrium and supply *equals* demand.

Property professional Property professional for the sake of this research report means :

- Investors on behalf of financial institutions
- Lenders of finance
- Property developers
- Valuers
- Private investors/speculators
- Property managers

Risk and Return. In financial management the term risk indicates that there exists an expectation that the actual outcome of a project may differ from the expected outcome. The magnitude of the possible difference reflects the magnitude of the risk. From the viewpoint of an investor, there exists investment opportunities which can be broadly classified into two categories. Firstly, investment opportunities with certain outcomes, risk-free, e.g.. Investment in RSA stocks.
Secondly investment opportunities with uncertain outcomes, e.g.. The purchase of shares on the Johannesburg Stock Exchange(JSE) or the purchase of fixed property with a view to deriving capital gains.

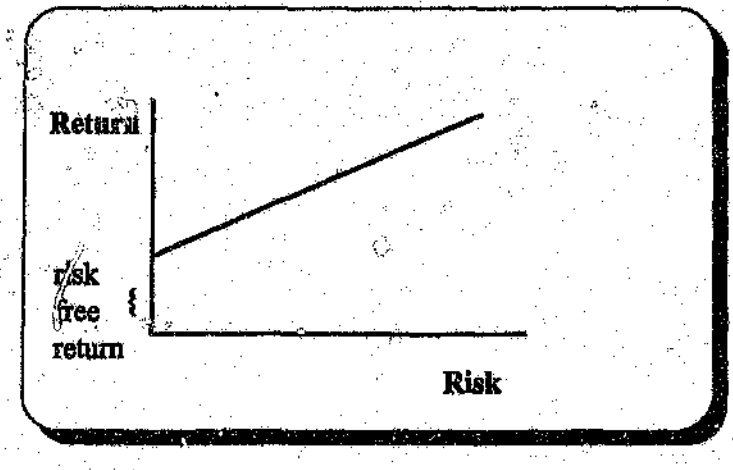
The question arises, why do some investors prefer a risky investment rather than one which is risk-free ? The answer must lie in the fact that the risky investment offers a higher expected return. However, this does not fully answer the question as to why some investors prefer risky investments while others avoid risk. The preference for risk which some investors exhibit is generally accepted to be a function of the utility which an individual derives from making the investment.

Because individuals differ both in their needs and in their personality traits, it follows that there will always exist a spectrum of investors, some of whom are more prone to look' g for high risk, high expected return investments, while others will maximise their utility through accepting lower expected return with concomitant lower risk(*CORREIA,C. FLYNN,D. ULIANA,E. WORMELD,M:*-1989,pg 64).

The relationship of risk and return can be illustrated as follows.

Classic risk and return curve.

Figure 1



1.2.2 Different purposes for valuation.

Given the different purposes for which valuations may be required, different types of value are appropriate. Estimates of value are required for the following decisions :

- compensation payable on expropriation
- size of mortgage loans
- levying of municipal rates and taxes
- transfer duty on the sale of a property
- estate duty payable
- desirability of a proposed township or building development
- taking out insurance
- determining rentals
- buying, selling, exchange transactions and divisions of assets.

1.2.3 Different types of value.

Use value = Use value is the value a specific property has for a specific use. Real property may have a use value and a market value. An older factory that is still used by the original firm may have considerable use value to that firm, but only a nominal market value for another use (***MILGRIM,M.R:- 9th edition,pg 20***).

Investment value = Investment value is the value of an investment to a particular investor based on his or her investment requirements. In contrast to market value, investment value is value to an individual, not value in the market place (***MILGRIM,M.R:-9th edition,pg 21***).

Insurable value = Insurable value is based on the replacement and/or reproduction cost of physical items that are subject to loss from hazards. Insurable value is that portion of the value of an asset or asset group that is acknowledged or recognised under the provisions of an applicable loss insurance policy. This value is seldom if ever equal to market value (***MILGRIM,M.R:-9th edition,pg 22***).

Assessed value. = Assessed value applies to ad valorem taxation and refers to the value of a property according to the tax rolls. The assessed value may not conform to market value, but it usually is calculated in relation to a market value base (***MILGRIM,M.R:-9th edition,pg 22***).

1.3 RESEARCH OBJECTIVES.

Each person who wishes to buy or sell a property on what ever level, knowingly or unknowingly is faced with either **making or obtaining** a property valuation.
A valuation may be as informal as a prospective home owner asking the going rate for a three bedroom house in the area, or as formal as asking a professional valuer for a written valuation report.

The formality of the valuation is not important, it is the fact that property valuation plays an important part in ones life, albeit often not knowingly, and it is for this reason that the author of this report believes that the property valuation methods and their application need better understanding by the community at large.

The common feeling in the property industry and the public at large is that only property professionals are capable of accurately valuing properties.
The author feels this may be the case with regards to specialised properties (e.g. farm land) and properties that have unfamiliar circumstances attached (e.g. usufructs, servitude's, shareblocks etc), but not so with your average property valuation.

Therefore the objective of this research report is to make the process of property valuation understandable and accessible to the average person by explaining, highlighting and reviewing the impotant aspects of the various valuation methods, and in so doing make the professionals in the industry more accountable and in turn the market more efficient.

The questionnaire making up the practical component of this report is aimed at finding out the pro's and con's of the various methods, the popularity of the methods in general, the different methods applicable for different types of properties, as well as how they the property professionals deal with the subjective components of valuation methodology.

The following are examples of who will benefit from this report :

- Property brokers wishing to offer clients a more scientific valuation report than just estimating the properties worth.
- An employee of a property company with little or no practical experience can quickly identify the way in which the market approaches valuations for a specific type of property e.g. the direct capitalisation method for an office block.
- A buyer wanting to purchase a property without incurring professional valuation fees.
- An investor wanting to purchase a property yielding a specific return.
- A property owner wanting to sell his/her home or business etc.
- A property developer would benefit in preparing a feasibility for a development based on the markets most popular methods of valuation.
- A client who is dissatisfied with the accuracy of a valuation report presented by a professional valuer.

1.4 RESEARCH METHODOLOGY

The approach taken with this Research Report was to try and provide each reader with the theoretical and practical framework necessary to tackle most property valuations.

In order for the reader of this report to have any depth of understanding the valuation methods and their application, it was necessary to build a basic economical and financial background. Many books on Economics & Financial Management were consulted in an effort to convey the theory in its simplest form (see bibliography).

In Chapter 3, two graphs were drawn-up using data from the following sources :
The Central Statistical Services, The South African Reserve Bank, Neville Berkowitz & Associates (property economists) and Dr Shlomo Peer (politician & economist).
The graphs were used to show the effect that inflation, interest rates and political events have had on property prices over a 15 year period (1980-1995), and hopefully give the reader an insight into the way the South African property market reacts to movements in these economic driving forces.

To give this report its vitally important element of practical application, a survey was conducted by means of a questionnaire and interviews.
An extensive questionnaire was compiled and distributed to 100 practising property professionals. (For details of the qualification criteria for making up the list see Chapter 9 and a full listing of the property professionals involved in Chapter 9, question 1).

The questionnaire was aimed at finding out : the pro's and con's of the various methods, the popularity of the methods in general, the different methods applicable for different types of properties, as well as how they the property professionals dealt with subjective components of valuation methodology.

The completed questionnaires totalled 27, representing a 27% response rate.
These questionnaires were then quantified using a statistical model as well as basic mathematical calculations, and documented in Chapter 9, forming the backbone of the research into the practical applications and the advantages and disadvantages of the property valuation methods.

The interviews were conducted at a senior level with people from leading property organisations such as : Anglo American Property Services, Investec Property Group and The Broll Property Group. The interviews were not intended to form part of the statistical findings in Chapter 9, but rather to provide an overview to the practical side of property valuation, and thus help the author in clearly defining the objectives and conclusions of this report. The report is littered with quotes & ideas that were obtained from consulting with many people in the property industry as well as studying : Books, journals, related articles from the world wide web, magazines and newspapers (see bibliography).

CHAPTER 2

VALUATION TOOLS

In order to understand the property and investment market , it is vital to come to grips with the tools that have built the industry. What this chapter will endeavour to do , is clarify certain subjects , where confusion reigns amongst people involved with property and the public at large.

2.1 INCOME.

There are different levels of income which will be discussed in (2.1.3) , but before that is discussed income can be split into two categories :
Contractual income or Non-contractual income.

2.1.1 Contractual Income.

In this category the income stream earned from a property is known and certain as it is governed by the law of contract under which leases fall.
The fact that a rental is certain does not mean that it is in-line with market related rentals.
A lease can be of a short or long term nature. The longer the lease the more important it is to have regular rent reviews to keep rentals in line with the market.
Market or Unmarket related rentals have an effect on a properties risk profile , and can therefore have a significant impact on the value of a property.
It is therefore important for the valuer to judge the lease on its merits.
The pro's and con's of an unmarket related income can be explained by means of the following two examples :

- A property with a 'Blue Chip' tenant and a long lease of 20 years with 5 year rental reviews currently under market related rentals , may be viewed in a favourable light as the economy could be heading into a depression.
  The likelihood of finding replacement tenants at market related rentals would be difficult and costly , and therefore the existing lease would be viewed as a **positive lease.**
- A property with a long term lease at below market rental with rent reviews only every 10 years may be viewed **negatively** where it is expected that the property market is heading for a 'Boom' , and the location of the property is in high demand.

It is important for the valuer when judging a lease not to look at the local market surrounding the property in isolation, but rather to look at the property in relation to the whole economy.
Variations have been made to certain valuation methods to make allowances where lease rentals are above or below market levels , so that the methods reflect a truer market value of the property (see opportunity cash flow & top slice method in Chapter 6).

2.1.2. Non-contractual Income.

Where there is no lease in place and a valuer is called upon to calculate the market value of a property , it is natural that a market related rental would be used to derive the properties value.
The only time a valuer would make an adjustment to the market related rent would be when the valuer predicts that an imminent change in market conditions is expected in the very near future and the market has not yet allowed for it. This is not standard practice, as the market usually has its reasons for not incorporating it.

2.1.3. The various levels of income are broken down into : [1]

1. GROSS INCOME
2. NET INCOME
3. BEFORE-TAX INCOME
4. AFTER-TAX INCOME
5. RETAINED INCOME

1. Gross income

This is rentable area multiplied by Rand per m2 , less any vacancies or bad debts.

2. Net income

This is gross income less outgoings(operational expenses) which comes out of the landlord's account(gross lease) unless the tenant has agreed to be responsible (net lease). This is a list of normally incurred operational expenses :

- Assessment rates
- Insurance premiums
- Management and rent collections
- Maintenance
- Water and electricity
- Special services e.g. lifts , escalators , heating and air-conditioning
- Security
- Employees salaries and general expenditure for day to day maintenance

3. Before-tax income

This is derived from net income after making provision for the payment of interest, and for capital repayments on borrowed or loaned capital, of which there are 5 basic sources :

* mortgages
* debentures
* preference shares
* shareholder loans
* short-term loans

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[1] *MARITZ,N.G:*-1989 UNISA Business Economics only study guide for BEC306-3 (Market valuation) pg 100.

4. After-tax income

This is derived from deducting the income tax payable from before-tax income.

5. Retained income

This is after-tax income that is not distributed as dividends , and retained in the company to achieve further growth.

EXAMPLE :

INCOME STATEMENT

for the year ended 28 February 1995.

Income		**22,000,000.00**
Rental and recoveries	21,000,000.00	
Interest received	1,000,000.00	
Expenditure		**6,000,000.00**
Administration expenses	67,000.00	
Auditors remuneration	127,000.00	
Collection fees	1,000,000.00	
Property expenses	4,772,000.00	
Levies	34,000.00	
Net Income		**16,000,000.00**
Interest on mortgage bonds		1,000,000.00
Net Income before taxation		**15,000,000.00**
Taxation @ 35%		5,250,000.00
Net Income after taxation		**9,750,000.00**
Retained income at beginning of the year		500,000.00
		10,250,000.00
Dividends		900,000.00
Retained income at the end of the year		**9,350,000.00**

2.2 INFLATION.

Economic instability poses a grave threat to every person over which it governs.
One of the manifestations of economic instability is inflation , of which everyone in the economy is effected , albeit not all knowingly. The reason being that inflation erodes the purchasing power of your Rands.

To understand this practically lets take R100,000. which has the purchasing power to buy a 2 bedroom house in a particular neighbourhood, and invest that money in the bank-(assumption 1.)
This R100,000. will grow at 10 % per annum over the next 5 years in the bank-(assumption 2.).
After 5 years the R100,000. would be worth R161,051.
The question the investor has to now ask is, assuming that all things effecting the demand for this particular property remain as they were 5 years ago," can R161,051. buy me the same 2 bedroom house ??"
If the answer to the question is yes, then the investor has maintained real value (purchasing power).
On the other hand if the answer is no, then the investor has not kept up with inflation and is experiencing negative real growth.
The term *inflation* has the potential to impact on everyone's lives be it directly or indirectly, and the only way we as investors can beat it, is if we understand what it is and what causes it.
It would be wrong to define inflation as too much money chasing too few goods or an excess of wage claims over productivity growth, as these relate to the causes of inflation.
The best way to define inflation is as follows :

- *An increase in the general price level for goods and services occurring over a relatively brief period of time.*

Within this definition there are two kinds of inflation ; Demand-pull and Cost-push inflation.

2.2.1. Cost-Push Inflation

This is where inflation is caused by wages and other costs going up faster than the increase in labour's productivity.
It is easy to see that if the farmer has to pay higher wages and higher prices for fertiliser, then the grocery stores are going to pay more and in the end the consumer will bear the brunt of having to pay the higher prices for the end product.
This kind of inflation in developed economies is nearly always gradual and never reaches the extremes that the other kind of inflation sometimes attains. This may be true for more developed countries, but South Africa's inflation is under extreme pressure from labour unions who insist on wage increases that in no-way reflect the productivity of the labour force.

2.2.2. Demand-Pull Inflation

The other kind of inflation is what economists call demand-pull inflation , often described as 'too many dollars chasing to few goods ' - too much money to spend and no increase , or very little increase , in the quantity of goods or services to spend it on.
Or sometimes - as in the case of the Arab embargo on oil - a decrease in the quantity of goods available and no diminution in the demand.

In part, of course, demand-pull inflation stems from wage increases - wage earners have more money to spend and they spend it. It is a spiral and, in economics, all spirals are vicious, whether up or down. But that part of the pressure behind a demand-pull inflation is really just cost-push inflation looked at from another angle.

In general this kind of demand-pull inflation does not pose a major problem, that is if there is a steady increase in production efficiency in farms, mines and factories, attributable to capital investment and innovation, features that are characteristic to sophisticated 1st World economies. The same, however, cannot be said for South Africa.

It is when the demand-pull inflation is the result of government spending, and deficit budgets financed with printing-press money and borrowings, that it can come with such extreme rapidity that it totally disrupts a nation's economy.

But one kind of inflation begets another. Higher prices caused by government deficit financing mean that labour naturally demands higher wages to meet the rise in the cost of living, which then gives a dose of cost-push inflation. Higher wages upset the government budget - and so on, in the vicious spiral that we are suffering from today (***EDER:- 1979***).

In the final analysis, both in origin and control, inflation is a political problem. Money is crucial to understanding the mechanism, but politics is just as crucial to grasping the motivation (GRIFFITHS,B:- Inflation :The price of prosterity, date unknown).

2.3 INTEREST RATES.

When money is borrowed, payment is made for the use of the money. The borrower is prepared to pay for the loan because the use of the money has a value greater than the cost of borrowing. The simple market rules of supply and demand therefore establish the price to be paid for the use of the money, which is known as the interest rate.
In general , the interest rate which represents the return required by the lender comprises three main variables :

2.3.1. The time value of money.

The receipt of money is preferred sooner rather than later, as it can be used to earn more money. If an individual is prepared to forfeit the use of money for a specified time, some compensation is required.

2.3.2. The risk of the capital sum not being repaid.

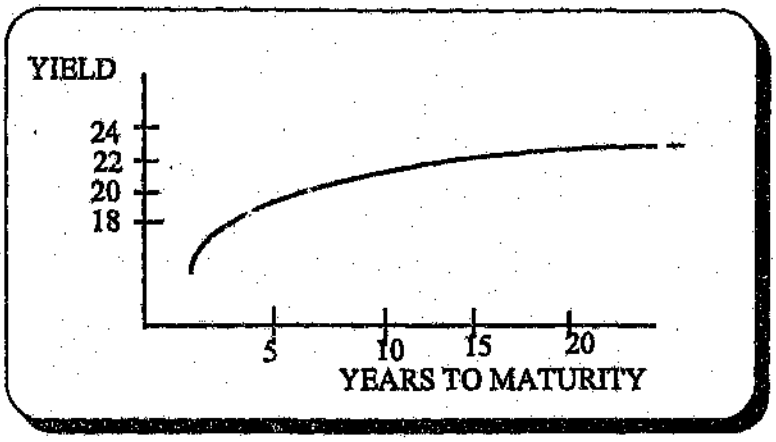
If there is some uncertainty that the amount loaned will be repaid, a premium will be required. Perfect certainty in this sense would refer, for example, to a loan to government authorities such as treasury bills or RSA stocks referred to as 'gilt' investments, based on the fundamental principle of 'risk and return'.

2.3.3. Inflation.

In times of rising prices it is evident that the spending power of money decreases over time. Any lender would expect to be compensated for the decline in spending power. If the interest rates did not compensate for inflation the lender would be poorer when the capital is repaid than at the time of the loan.

The rate of interest does not remain constant but depends on expected changes in the variables of which it is a function.
The term structure of interest rates, as it is known, reflects the rates of interest charged at any given time for borrowing over different lengths of time, from short-term to long-term. It seems rational to expect that longer-term loans carry more risk than short-term loans so that an upward sloping curve would be expected. This upward sloping curve would also be a reflection of the expectation that inflation rates are likely to escalate in the future.

Figure 2.



A number of theories have been developed which seek to explain the term structure of interest rates. The two most commonly quoted theories are the expectations theory and the liquidity preference theory.

- **The expectations theory.**

Assuming an investor is faced with the choice of investing a sum of money at a fixed interest rate for one year or for five years in a gilt investment, which alternative will be chosen ?

If it is expected that interest rates will decline during the next five years, it will be better to invest for five years, as a higher interest rate will be yielded on the investment than if a series of five one-year investments had been made.

If this expectation of declining interest rates was held by all investors, then the five-year investment would be in demand if offered at the same rate as the one-year investment. This demand would force the rate of the five-year investment down to a lower rate, where both alternatives will be equally attractive.

This leads to the question of which factors are likely to contribute to expectations relating to the increase or decrease in interest rates on gilt investments. There is little debate about the fact that the expected inflation rate is the most significant factor.

An investor would clearly hope at the end of a year to be at least as wealthy as the result of an investment as at the beginning of the year. The interest received should therefore at least compensate for the loss of purchasing power as a result of inflation.

In fact, as most interest received is taxable, the investor would expect the after-tax interest to at least compensate for inflation.

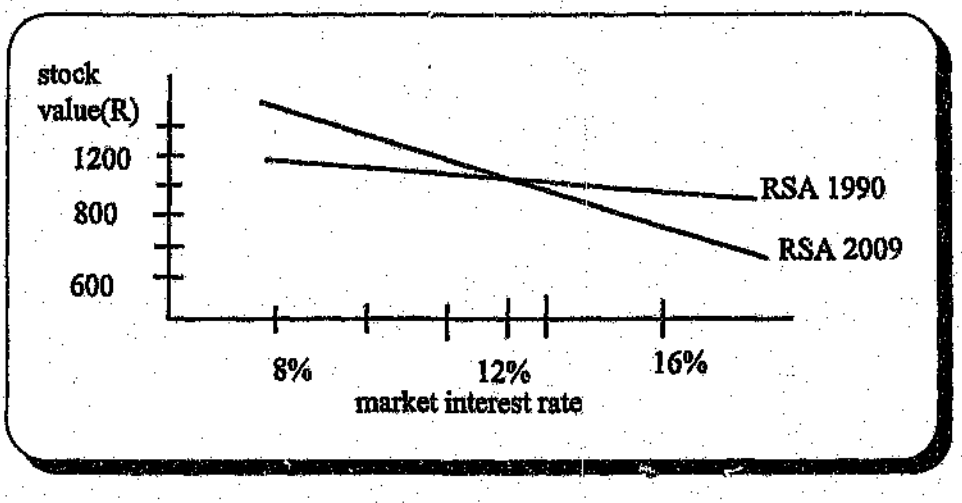
In essence the expectations theory holds that the slope of the term structure of interest depends on the expected future spot rates of interest. If it is expected that future rates of interest will for example be higher, the yield curve will be upward sloping as it was in June 1988.

- **The liquidity preference theory.**

A second theory which attempts to explain the term structure of interest rates introduces an element of risk. When dealing with gilt investments, the risk is not related to default on the capital invested, but rather to the risk of interest rate fluctuations. For example, assume you hold both a 20-year RSA and a one-year RSA, each with a coupon rate of 12%, when the market rate of interest is also 12%. If expected inflation increased the market interest rate, the negative effect on the value of the 20-year RSA would be far greater than on the one-year RSA. This interest rate risk is greater when the period to maturity of an investment is longer.

This is illustrated in figure 3.

Figure 3. Value of 12% RSA stock on 1 January 1989



The reasons for the greater variability of the RSA 2009 stems from the fact that investors holding the RSA 2009 are locked into receiving a 12% return on R 1000 for 19 years longer than holders of RSA 1989 ***(CORREIA,C. FLYNN,D. ULIANA,E. WORMELD,M:- 1989,pg 27-32).***

2.4 YIELDS

The Yield of an investment is a measure of its earning capacity both present and future. Therefore in the case of a property investment , the properties yield is determined by its current rental and the projected growth in this rental throughout the properties life, as well as all the risk factors associated with the property e.g. bad location , struggling tenants, building condition etc.

Another name for yield = capitalisation rate(cap rate).

The formulae to determine a YIELD = NET INCOME Per Annum

CAPITAL VALUE (Investment)

When doing property valuations the objective is usually to calculate the properties capital value, so the above formulae is re-arranged in a way that the yield is used to project the value of the property i.e.

CAPITAL VALUE = NET INCOME P/A

YIELD

However, the most common problem valuers encounter when trying to work out the value of an investment is determining its yield, as the capital value is unknown.

The yield can be found in one of three ways :

1. By finding the yields achieved recently on the sale of similar properties, and then adjusting it either upwards or downwards where differences are found, to suite the property being valued, or
2. By building one up from a risk free yield, and making the necessary adjustments for the properties expected growth and associated risks.
3. The yield may also be decided by the investors required yield given the risk profile of the property (Hurdle Rate).

The yield of a property is adjusted downwards when the subject property is judged to have greater growth potential and/or less risk than the comparable property, and upwards when the subject property has less growth potential and/or more risk than the comparable property.

Example 1 : Capital Value = R100,000(income). / 13%(cap rate)

Capital Value = R769,230.

Example 2 : Capital Value = R100,000(income). / 10%(cap rate)

Capital Value = R1,000,000..

As you can see adjusting the yield by 3% on a R100,000.annual income, has a R230,770 effect.

One can deduce from this the significant impact, small changes to the yield can have on the overall value of a property. Therefore the role of adjusting the yield is subjective and the art to making good valuations.

Before starting the valuation process it is important to determine the purpose of the valuation, as the type of yield used is often dependant on the purpose of the valuation.

The 3 most common types of yield are as follows :

1. Current Yield = $\frac{\text{current net income , which may not be market related}}{\text{Capital Value paid for the investment}}$

   This yield is usually only used to measure the performance of an existing investment.

2. **Market Yield =** $\frac{\textbf{market related net income}}{\textbf{market related property value}}$

   This is the yield used most often in property valuation , and is derived from a recent sale of a similar property.

3. Required Yield = $\frac{\text{market related net income}}{\text{Capital amount that will give the investor his/her required yield.}}$

   This is the yield investors require given the investors assessment of the risk profile of the investment.

CHAPTER 3

PROPERTY ECONOMICS

Property Economics is the study of the economic driving forces that affect property prices/values.

This chapter will focus on economic driving forces, demonstrating how they should affect property prices in theory, and how they have affected prices in practice.

Chapter 3, hopes to achieve greater clarity on this subject which will enable readers to predict movements in property prices with a greater degree of accuracy.

The economic driving forces which we will concentrate on for the purposes of this report are : inflation, interest rates and political events.

3.1 Inflation

An increase in inflation has an eroding effect on the purchasing power of a currency. Therefore the traditional approach during periods of increased inflation has been to switch one's liquidity preference from money which is a devaluing asset to a more intrinsic type of asset such as : property, gold, art, etc.

The reason why these types of assets have proven to be greater storers of wealth than money during periods of high inflation is because their supply is relatively fixed.

As money loses its value, demand increases for better storers of wealth such as property, gold, art, etc, and due to the fact that supply is relatively fixed their prices increase.

However, an increase in inflation can also lead to a decrease in demand for property, which will in turn lead to lower property prices. The reason for this is where wage increases do not keep up with inflation one's standard of living decreases, leaving households with less disposable income.

This is the way things should work in theory, however in practice there are other factors that effect property prices as economic forces never work in isolation.

In graphs 1 & 2 we take a look at the impact inflation, interest rates & political events have on South African property prices.

3.2 Interest Rates

The effect of an increase in interest rates is an increase in the cost of borrowing.
This increase forces potential property buyers to recalculate their budgets to see if they can afford the increase in finance costs. The hike in interest rates often turns projected positive cash flows into negative cash flows thus making investments less attractive, which in turn leads to a decrease in demand for property translating to lower property prices.
The same could be said in reverse if the interest rates had to decrease.
It is therefore important when valuing a property currently subject to interest rate changes to assess if the changes are deemed to have a significant impact on property prices.

3.3 Political Events

Possibly the subject that has the greatest direct impact on property prices especially residential property prices is, political instability. A country that doesn't enjoy political stability is at a distinct disadvantage over its competitors, as investors are unlikely to invest their money in a place where uncertainty reigns, let alone put their money in property which is an illiquid investmem
Political and Economic stability are ... mymous, you cannot have one without the other. Government cannot afford to underestimate the importance of a healthy link between themselves and the business/investment community.
In Graph 2, the political event arrows represent the following events :
1983 = P.W. Botha referendum over white minority rule.
1985 = Implementation of the State of Emergency prior to the 1987 General Elections.
1989 = The handing over of power from P.W. Botha to F.W. De Klerk.
1990 = The February 11 release of Nelson Mandela.
1993-4 = Political unrest as the country commenced the transition to democracy.
1994 = A general mood of optimism over the highly successful April 27 elections.

3.4 COMMENTARY ON GRAPHS 1 & 2

In 1983 the country had a referendum regarding white minority rule. This lead to a period of political instability which resulted in a 'state of emergency' being declared in 1985.
The political uneasiness in 1983 overrode the positive fundamentals such as low interest rates as well as low inflation, as from 1983 - 1986 average real office & industrial rentals dropped with average real house prices dropping the most.

From 1986 - 1988 the economic indicators (lower inflation & lower interest rates) proved favourable for the business community and saw an increase in average real office and industrial rentals up until 1990, average real house prices remained flat during this period due to an uncertain political future.

From 1993 - 1994 all types of property prices remained reasonably flat due to the massive political unrest prior to the first democratic general elections.
This political sentiment outweighed the positive economic indicators (lower inflation & lower interest rates).
From 1994 through 1995 all property prices increased substantially due to the success of the first democratic elections, and the favourable economic climate.

In conclusion, it can be said from these graphs that South Africa's political stability plays a greater role in determining the movement of property prices, than the economic indicators such as inflation and interest rates.
One can make the further comment that residential prices are more prone to the effects of political instability than office & industrial properties.

CHAPTER 4

VALUATION METHODOLOGY

Introduction

Valuers throughout the Western world accept that the 5 most conventional property valuation methods are :

1. The comparable sales method (comparative).
2. The investment method.
3. The replacement cost method (contractor's).
4. The residual method.
5. The profits method.

***(SCARRETT D:-* Property Valuation : The five methods , 1991)**

The Profits Method is based on the assumption that the value of some properties will be related to the profits which can be made from their use, and is generally only used where there is some degree of monopoly attached to a property.[e.g. the restaurant on top of Table Mountain]

Note.

No further analysis will be made into the profits method, as this method is only used in special circumstances by experienced valuers and does not meet with the general objectives of this report.

4.1 THE COMPARABLE SALES METHOD

This procedure is widely adopted in practise , but requires access to adequate records of transactions (*RICHMOND, D:*-1994).

This is the simplest and most direct method of valuation. The method is based on comparing the property to be valued with similar properties and the prices achieved for those properties, allowing for differences between the property to be valued and similar properties, and in so doing, determining the price likely to be achieved for the property in question (*BRITTON,DAVIES,JOHNSON:*-1989).

The logic of this approach is based on the principle of substitution. What this means is, a buyer will not be prepared to pay more for the subject property than it would cost him to buy a comparable property with almost the same productivity.

For these principles to apply there must be :

- a functioning market in which properties are sold on a continuous basis.
- a prospective buyer who will be able to make a selection between a number of alternative but comparable properties.
- prospective buyers that will be able to compete, i.e, more than one potential seller being in the market (*MARITZ,N.G:-1989,pg* 81).

Where the above principles are in place, the market produces a pattern of prices which is informative to observers of the market and persuasive to would-be participants ir that market. The fact that there are shades of opinion is what constitutes a market.

No property is identical, if only because each building occupies a different site.

Even where two buildings were designed and constructed in identical fashion, one may have been improved or abused in a way in which the other has not. It may face in a different direction, enjoy a better outlook or be located on the opposite side of the road (*SCARRETT,D:*-Property Valuation , The 5 Methods , 1991).

Transactions take place in the market regularly. The market is not static so that the price obtained for a property at one time will not necessarily be achieved if the same property is sold again. Thus the reliability of evidence of prices diminishes as time elapses since the transaction took place. In the volatile market which has developed in recent years, only a short time will pass before the evidence becomes unreliable
(*BRITTON,DAVIES,JOHNSON:-1989*).

Usually only 3 types of property lend themselves readily to the use of this method and in each case only when the freehold interest free from any leasehold estate is being valued(except flats). They are:

1. Residential property.
2. Agricultural property - valuers must allow for differences such as the quality of the soil, type of farming possible, extent and condition of buildings, location, and quality of the farmhouse and other accommodation.
3. Development land - Residential building land may be valued using the direct comparison method.

A comparison method may also be used for assessing the rental value of retail, office and industrial properties.

"It has been established by the courts as the most accurate way of quantifying market value. And other methods should be used only when this method cannot be used.
In referring to the Marks case (supra), King J held that a method other than the comparable sales method would be more appropriate under certain circumstances.
This is encouraging as it indicates that the hard-and-fast basis of using other methods only when the comparable sales method cannot be used is being (or may be) relaxed.
The courts have held ' that where a person claims that comparable properties used to reach the price paid for a property is not a reflection of 'true market value', the onus of proof rests upon the person who is disclaiming the compatibility of the chosen comparable properties.
A good test as a valuer to determine compatibility is as follows :
'*The property sold is a comparable sale if the buyer would have considered the property to be valued as an alternative.*'

The valuing profession feels it would be better practise to spend more time and make a more thorough analysis of fewer comparable properties than to superficially look over many.

When going about your valuation it may be useful to grade comparable sales.
Two rules are suggested:

1. Those transactions for which it has been diff. ult to confirm the facts or circumstances of the sale should be treated as *less reliable.*
2. The fewer and / or smaller the adjustments to the comparable property , the *more reliance* should be placed on it **(Author wished to remain anonymous).**

4.1.1 CRITERIA FOR THE SELECTION OF COMPARABLE SOLD PROPERTIES.

"The most important criteria to be taken into account in the selection of comparable sold properties may be summarised as follows :

(i) **Productivity - generating attributes of the subject property.**

- physical nature of the land and improvements
- location network
- legal and planning aspects as well as future prospects governing the use of the property.

(ii) **The Nature of the Sale must be *Bona Fide*** i.e. the deal must have been concluded at arms length - no particular concessions must have been made by one party in favour of the other e.g. a father selling a property to his son.

(iii) **Date of Sale** , it is vital that market conditions should not have changed since the occurrence of the comparable transaction.

(iv) **Nature of the Sales Transaction.**
The sale must have been concluded in more or less similar financial circumstances *(MARITZ,N.G:-1989,pg* **83 - 85).**

4.1.2 COMPARABLE SALE MODELS

As a valuer you must always be able to substantiate your valuation to a client or a court of law and show how you arrived at a value, if so questioned.
There are many variation models of the comparable sales method which the valuer can make use of, the author of this report will only mention the most popular ones for the purposes of this report.
They are :

- unadjusted selling price model
- adjusted selling price model

Considerable difference of opinion exists as to which of these approaches is the more exact. Those who advocate the use of unadjusted selling prices argue that it is impossible to determine which differences observed between properties are responsible for the variations in selling prices, and that the contribution of any particular difference cannot be quantified meaningfully. Supporters of this more general approach take a look at comparable properties recently sold as a whole and then approximate an overall value in line with the sales price of the most comparable property.

Those on the other hand who support the use of adjusted selling prices proceed from the assumption that the differences responsible for the variation between comparable sales can be identified and quantified. The comparable selling price is then adjusted in such a way that the adjusted selling price constitutes what would be the selling price of the property if the latter were identical to the subject property.
In other words, the subject property serves as the norm, and all adjustments to the selling price of the comparable property are based thereon. This means that the attributes of the comparable property are adjusted to make it identical to the subject property.

The nature of the model that the valuer postulates will naturally differ from one valuation to another . Consequently, an infinite number of approaches and methods exist for deciding where the most probable selling price will fall and between which levels of accuracy it will lie.

(a) **The Logic of the Adjusted Selling Price Approach is as follows:**

- The valuer must first identify differences between the subject property and comparable sales. The six broad classes in which such differences are to be observed, may, for the sake of convenience, be classified in the following way:

1. Physical attributes of the land and improvements
-land
-improvements

2. Location network
-linkage network
-exposure network

3. Institutional attributes

4. Current use
-most probable legal economic use

5. Date of sale

6. Nature of the transaction

- The valuer must now decide which of the observed differences can possibly explain the difference in selling prices. The differences that are not important for the purposes of explaining differences between observed selling prices ,are ignored.
- For each of the important differences identified by the valuer, a monetary adjustment must now be made in respect of each of the comparable selling prices. Adjustments are made on the basis of the principle that each of the comparable properties must be made identical with the subject property. Adjustments are made upwards when the comparable property is inferior to the subject property and downwards when it is superior to the subject property. Adjustments may be made either in terms of absolute monetary amounts or percentages.

FIGURE 4.

ATTRIBUTES	SALE 1.	SALE 2.	SALE 3.	SALE 4.	SALE 5.
Selling price	195,000	190,000	250,000	330,000	200,000
• Physical attributes					
condition	15,000				20,000
garage			-20,000	-8,000	5,000
bathrooms		15,000		500	6,000
number of bedrooms			5,000	-40,000	-10,000
kitchen			-5,000	-13,000	4,500
• Location	15,000			-7,000	4,500
• Date of sale		5,000		3,500	35,000
• Nature of transaction			-25,000	-10,000	-10,000
Total adjustment	30,000	20,000	-45,000	-74,000	55,000
Adjusted Selling Price	**225,000**	**210,000**	**205,000**	**256,000**	**255,000**

If all selling prices are adjusted in this way, any further variations observed (provided that all comparable sales are equally comparable with the subject property) can be attributed to the fact that the valuer is not working in a perfect market.

Strictly speaking, the adjusted selling price should be distributed randomly round the market value. A statistical average of adjusted selling prices would then result in an acceptable estimate of market value. In his estimate, the valuer may decide that the differences should not necessarily be regarded as random, but that the greatest weight should be attached to one or more sales.

In terms of Figure 4, the valuer would in all probability argue that comparable sales 4 and 5 should in reality not be regarded as comparable with the subject property owing to the large number of adjustments that had been necessary. The valuer would then establish that the most probable selling price is R210,000.00 which lies between the limits R205,000.00 to R225,000.00.

This approach is by no means accepted by all valuers, and strong arguments are raised against its use. These arguments may be summarised as follows :

- The method gives rise to an artificial and misleading impression of exactitude which does not exist in valuation and cannot be justified.

- It often happens that a valuer includes only a table of adjustments in his report and does not explain his actual reasoning.
- The valuer professes that his knowledge is precise, and that he can identify those productivity-generating points in terms of which differences in selling prices can be explained.
- Not only does the valuer state that he is able to identify individual differences, but also that he can quantify the contribution made by each one. In reality, there is very little, if any, statistical justification for the adjustments made by the valuer, except perhaps in a small number of special cases.
- Owing to the shortcomings mentioned above, it is often difficult to justify this approach in a court of law ***(MARITZ,N.G:-1989,pg 86 - 91).***

As mentioned before, a comparison method may be used for assessing the rental value of a particular property; the unit of comparison in commercial and industrial property may be the Rand per square metre of net rentable floor area, and in agricultural land the measure may be the Rand per hectare.
When it comes to comparing retail rentals the process becomes slightly more difficult.
A 'zoning' method has evolved for the obtaining of rental values for retail shops.
This method is called the **L.T.Z.A. Method.(In Terms of Zone A)**

(b) L.T.Z.A. Method.(In Terms of Zone A)

Shops having the same floor area and condition and being in the same locality may not have the same rental value. This may be due to varying lengths of frontage. The zoning method takes account of this by assuming that the front area of a shop has greater value than the rear portion.
The method splits the depth of the shop into zones, and assumes that the value per metre square *halves* back from the front zone. The depth of the zones must be established at the outset ***(RICHMOND,D:-1994).***

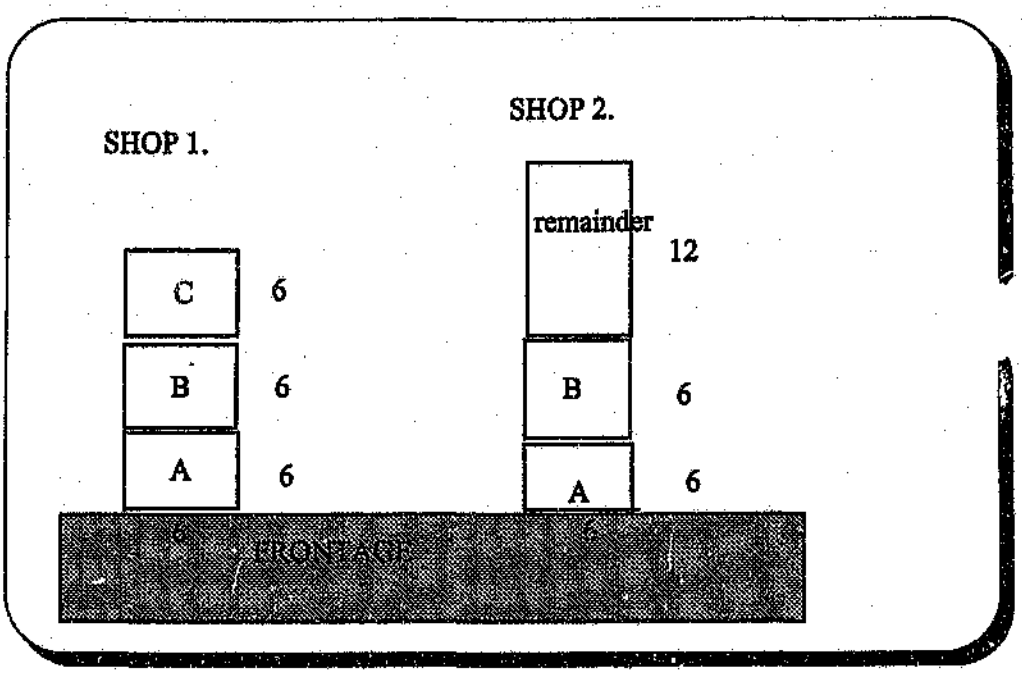
FIGURE 5.

SHOP 1.		m2
ZONE A	6 x 6 =	36
ZONE B	6 x 6 x 1/2 =	18
ZONE C	6 x 6 x 1/4 =	9
		63

SHOP 1.
ACTUAL AREA
108

SHOP 2.		
ZONE A	6 x 6 =	36
ZONE B	6 x 6 x 1/2 =	18
ZONE C	6 x 12 x 1/4 =	18
		72

SHOP 2.
ACTUAL AREA
144



4.2 INVESTMENT METHOD.

The purpose of an investment valuation is to provide an opinion as to the capital value of the right to receive annual streams of income.
It may be prepared : on behalf of the owner in the form of advice, preparatory to marketing, for a prospective purchaser or for a third party contemplating the granting of a loan secured on the property, etc.

The majority of valuations are prepared on the basis of market value, but the valuer should ascertain the purpose of any valuation as it may have an effect on the result or more particularly on the way in which it is reported.
The consideration of capital value involves the collection of many details and the formation of a view as to the quality of the investment as a prelude to the necessary mathematical calculations to produce a valuation.
The former part of the process relies on the skill and judgement of the valuer, whilst the latter is a relatively straightforward processing of figures based on financial formulae.
Most aspects are open to judgement and will inevitably attract varying levels of interpretation and significance from one valuer to another.

In this regard, opinions as to the yield will vary.
Growth is a function both of the longer term future of the building itself and the state of the economy, a complex consideration where any opinion is likely to rely heavily on the evidence of past performance for want of better information.
The yield which is a function of the quality of the investment will depend to a large extent on the valuers subjective interpretation.
In all forms of the Investment Method, NET INCOME is the starting point.
Net Income is derived from *rental income* less *outgoings*(operating costs).
These figures are quantifiable, but still leave room for opinion.
Therefore investigations and enquiries to obtain the information required should be exhaustive, since the soundness of the valuation will be determined by the thoroughness of the collection and interpretation of the data.

Market value cannot be determined without a good deal of investigation regarding the facts surrounding the particular building and the circumstances in which similar properties were sold.

There appear to be 5 different variations commonly employed in South Africa for the valuation of income producing properties. This was confirmed by a survey done on a large number of professionals, actively involved in analysing property values in South Africa, by the Company Keet & Associates. (designers of the computer software MS&A Property Valuer).

The 5 variations to the Investment Method are :

1. Capitalisation of First Year's Income - Actual
2. Capitalisation of First Year's Income - Market
3. General Discounted Cash Flow (DCF) Method
4. Opportunity Cash Flow (OCF) Method
5. Top Slice Method

All 5 of these variations will be discussed in greater detail later in this chapter.

4.2.1 Direct Capitalisation Method.

This method involves the conversion of a properties future income-flow into a present value capital amount.

The Direct Capitalisation Method has two variations :

1. The Capitalisation of actual (contractual) income. Inherent in this assumption is that this income will be generated into perpetuity.
2. The Capitalisation of market income. This method ignores actual (or contractual) income and capitalises the net income as if fully let at open market rentals.

Once the annual net income has been calculated the valuer can divide the net income by an appropriate capitalisation rate (yield), in order to get a capital value.

This yield becomes known as the all-risk yield acceptable to the investor, meaning that it takes into consideration all risks that the valuer/investor attaches to a particular property throughout its lifetime as well as including its income generating abilities.

(i) The Element of Risk.

"Yield factors are determined by investors taking into account elements of risk involved in the investment. Aspects of risk to be taken into account are :

1. Quality of tenants.

   In general, and under normal conditions, the existence of a 'blue chip tenant' linked to long term security would imply a lower required rate of return.

2. Quality of premises.

   A 'blue chip' tenant in poor premises may not be as secure as the same tenant in good modern premises. The risk is greater that the tenant will vacate at the earliest opportunity and the quality of a new tenant may not be as good. The probability is that a new modern building will command lower returns than an older one.

3. Length of tenancies.

   Long tenancies with implied security of long term income suggest better and therefore lower returns than short term tenancies with the possibility of future voids and renegotiation risks.

4. Rental level

   Rentals at lower than market rates tend to be more secure than rentals above market rates. Good growth can be anticipated on renewal of tenancies at below market rental, but the risk of losing tenants and/or being forced into a position of negotiating lower rentals in the latter case is an added risk.

5. Terms of lease.

   * rent reviews - A fixed lease with no rent review for twenty years would tend to be a poor investment indicating higher required returns. A lease allowing for rent reviews every three or five years suggests a sound investment allowing for professional risk management.

   * escalation - Escalation's allow investors to protect themselves to some degree from the ravages of inflation in the interim period between rent reviews. Market related escalation's with review of escalation rates at rent reviews to market levels provide a sound investment.

   * other lease terms - Leases as concluded between landlord and tenant are in many

instances standard documents , but in many other instances are specially drafted documents relative to the particular circumstances of tenure. A valuer cannot assume that a lease is standard and must therefore acquaint himself with all lease terms and conditions of occupati.. within properties being valued. Specific lease clauses can result in onerous or beneficial circumstances to landlord or tenant, with a commensurate effect upon the investment and required rate of return.

6. Locality and environmental deterioration.

Prime properties remain prime for so long as their location and physical attributes remain prime. CBD's have shifted and buildings deteriorate over time.
Market trends result in previously fashionable areas becoming less fashionable.
Town planning decisions can create competing development nodes (e.g.Sandton).
In the changing South African context some towns or centres may become more or less attractive to investors due to socio-political events
(Ellenberger. The Valuers' Manual:-1992,pg 9-13).

(ii) Application.

The valuer first works out the net income for the particular property and then divides it by the appropriate 'cap rate'. What is actually happening behind the mathematics of this formulae is quite simple.
The property derives its capital value from the right to receive an income flow for its lifetime. The technical word used is ***' into perpetuity '***.
When using this method one can be faced with two options ; either to capitalise into perpetuity the actual net income as per the lease agreement, or to capitalise the net income in accordance with market related rentals.

EXAMPLE 1.

A property is currently being rented out at R 10 000. per annum.
The market related rent for this type of property is R 12 000. per annum.
The ' cap rate ' for this particular property investment is 10%

This example can be valued as follows in accordance with the above two applications :

1. Direct capitalisation - actual.

Net Income	10 000
cap rate	10 %
= Capital value	= R 100 000

2. Direct capitalisation - market.

Net Income	12 000
cap rate	10 %
= Capital value	= R 120 000.

To most this seems like an over-simplification of a highly sophisticated method and numerous questions have arisen. A few commonly asked questions will be mentioned.
It is safe to say that income streams vary mainly due to inflation , so how can this method that only looks at one year's income be correct ?
Also , it appears that no provision is made for the properties potential future growth ?
The answer to these questions in fact lies within the ' cap rate ' itself :
The investment discount rate (IRR) which will be fully explained in 4.2.1 , is said to be crudely made up from the cap rate + escalation rate (growth).
Therefore if the discount rate = cap rate + growth,
then the cap rate = discount rate - growth.

All this is saying is, the 'cap rate' has built in a provision that allows for growth in income. This provision for growth, in turn allows for the way inflation is expected to affect future cash flows.

Another question regarding the above example is when capitalising an actual lease that is above or below market related rentals, as it is not a true reflection to say that the rental as per the lease is what will be received in perpetuity.

In other words the lease may be below or above market rental now, but it may be in line with market rentals 1,2 or 10 years from now.
Therefore, to avoid any distortions in market value, certain methods have adopted variations to allow for these differences, namely the opportunity cash flow method and the top-slice method (see 4.2.2 : iii , iv).

4.2.2 Discounted Cash Flow.

This method can be used as an investment tool for two different purposes.
Firstly, the discounted cash flow method can be used as a tool to derive capital value when discounting projected cash flows, and is called the General Discounted Cash Flow Method (DCF).(see example 2)
Where the discounted cash flow method is being used to determine the capital value two further methods have been adapted to cope with the differences between actual and market related rentals. These two methods are the Opportunity Cash Flow Method, and the Top Slice Method. (see 4.2.2 : i , ii , iii , iv respectively).

Secondly, then discounted cashflow can be used when trying to compare dissimilar investments, by looking at the overall rate of return in comparison with other investment returns (see example 3).
In this case the discounted cash flow method is used to determine the Internal Rate of Return (IRR) or the Net Present Value (NPV) - (see 4.2.2 : i , ii respectively).

The General Discounted Cash Flow Method calculates market value by adding the present values of the anticipated net cash flows that the property is capable of generating to the present value of the property's expected worth at the end of the period under consideration.
The properties expected worth is normally calculated one month after the lease has expired, when the property will theoretically be let at prevailing market rentals.

The net cash flows are made up of *inflows* (e.g.. rental income) less *outflows* (e.g.. operating expenses). Depending on the degree of detail required you can have cashflows that work out the return on the investment before or after tax, before bond repayments or

after, you can even have cashflows that make provision for certain tax allowances and rebates where they would have a direct impact on the cashflow.
The proponents of the discounted cash flow method believe that their method is more accurate than the direct capitalisation method as the valuer is forced to quantify future cash flow projections, instead of just 'tweaking' the cap rate of one years income.

These same proponents feel that cash flows are subject to changes during a properties lifespan, be it from inflation or the fluctuations in rental prices due to supply and demand . Therefore they believe valuers with a thorough knowledge of the economy and the property market should be able to quantify this information into reasonably accurate cash flow projections and hence derive a truer market value.

The question that is most frequently asked with regards this method is,
"what is the appropriate discount rate ?"
This is a contentious issue with no fixed rule, however the discount rate adopted is usually one of the following :

- The rate required to borrow money for an investment (cost of capital) ;
- The investor may look at the markets opportunity cost , which means the rate of interest you could earn in the market risk-free, i.e.. your bench mark rate e.g.. the long bond yield on a government bond (RSA 150), plus a risk premium for the particular property will give you the discount rate. ;
- Another crude way of working out the discount rate is to add the cap rate and the rental escalation rate(projected growth rate) together.
- A more scientific method of working out the discount rate, would be to use the IRR method.

Application

When using the discounted cash flow method you are not expected to quantify the cash flows into perpetuity. The number of projected cash flows analysed is usually determined by the length of the lease, however the DCF method is also used when an investor would like to project the outcome of an investment without a lease over a time period of his/her choice.

If at the end of the cash flows the property still has income generating abilities, then the net income either at projected market rentals discounted accordingly or the present value of the last cash flow is capitalised into perpetuity, and added to the sum of all the discounted cash flows.

As you can see the DCF method requires more effort and relies on more assumptions than the Direct Capitalisation method. Therefore in the interests of accuracy it may be useful where applicable to use both methods as a means of a **check !**

It is important to exercise caution with the capitalisation rate used at the end of the cash flow analysis, as it may no longer be appropriate to the property 1 , 2 , 5 , 10 years down the line.

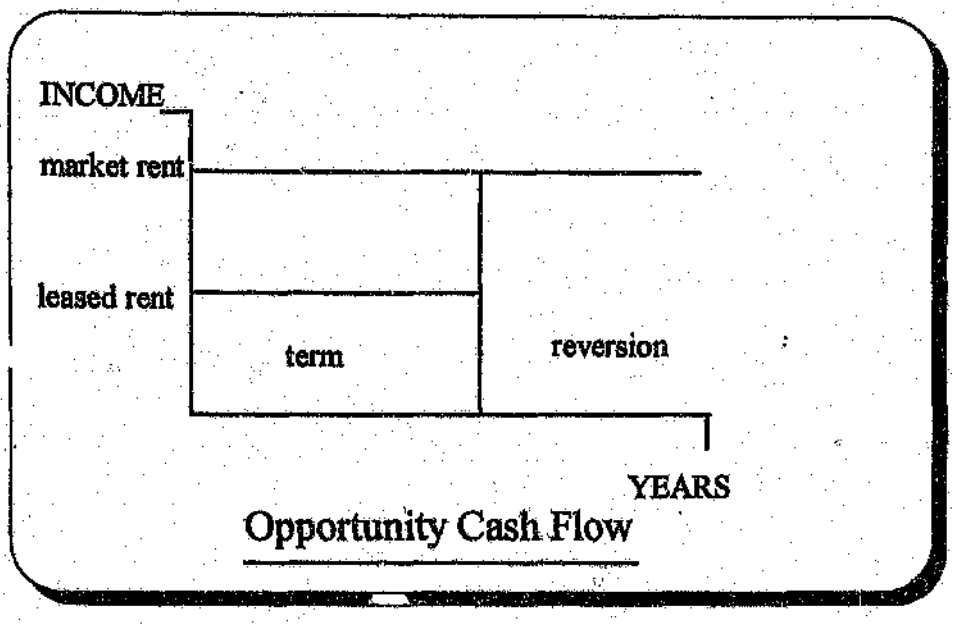
(i) NET PRESENT VALUE

"The Net Present Value Method discounts an investments projected cash flows back to the present day, usually referred to as year 0. The discount rate used represents the investor's minimum required rate of return for a project of that risk."

The NPV method can be used in two ways to provide crucial investment advice :

1. To work out the amount one should pay for an investment given the required total return and the projected cash flows.(see example 2: model A)
2. To find out if an investment will be profitable at a certain rate of return given the projected cash flows, and the amount laid out for the investment.(see example 2 : model B)

Figure 6.

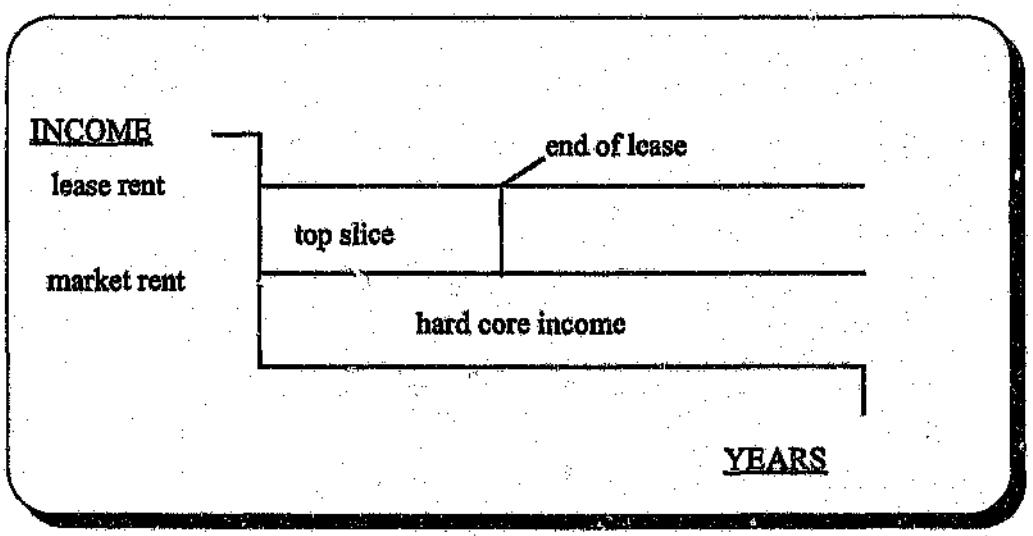


(iv) Top Slice Method.

The Top Slice Method, too, is a variation of the General Discounted Cash Flow Method. The only difference between this method and the Opportunity Cash Flow is that it applies a higher discount to that portion of net actual (or contractual) income that is above prevailing market rentals. This rental is referred to as the Top Slice Income . The rental that is less than or equal to market rental is referred to as Hard Core Income.

(*KEETS,D:*- Keets & Associates notes presented at Wits workshop May 1994).

Figure 7 **Top Slice Method**



4.3 REPLACEMENT COST

As a valuer or a property owner you may often be required to value a property for insurance purposes. The reason this method is used for insurance is because the insuring company will not allow a person to make a capital gain profit out of an insurance claim, as market value and cost are seldom equal.
It would only be prepared to pay the insured the amount needed to rebuild the property in the same condition as at the time of the valuation.

The replacement cost method can also be used to value the type of properties which seldom change hands and for which there are few comparables. It must be stressed once again that cost and value are rarely the same, but this method of valuation is based loosely on the assumption that they are related.

The types of property for which it could be appropriate are : hospitals, town halls, schools, libraries, police stations, churches, chemical plants, sewerage disposal installations, airports and public property in general will fall under this category (*MILLINGTON,A.F:*-1994).
Like most other techniques, the method of comparable cost is based on the principle of substitution. It is argued that a prospective buyer will not be prepared to pay more for the subject property than what it would cost him to acquire comparable vacant land and erect comparable improvements on it.
In other words, the buyer creates a hypothetical alternative(MARITZ,N.G:-1989pg 105).
This method is most frequently used for rating purposes where rates are levied on the value of buildings and sites together and it is also sometimes used in valuations for compensation when a property of a specialist nature has been compulsorily acquired.

The basic valuation approach then becomes as follows:

- **Cost of Site / Land value.**
- *plus* **Construction Costs of Improvements.**
- *less* **Depreciation.**
- = **Value of Existing Property.**

Put into words this means that the valuer endeavours to estimate the market value of the subject property on the basis of the current cost of replacing it with one that will have almost the same productivity *(MILLINGTON,A.F:-1994).*

4.3.1 Construction Costs

"The first question that arises when estimating the current cost of new structural improvements which must hypothetically be added to the land, is whether there should be

- a replica of the existing improvements, or
- a comparable structure of comparable utility

Reproduction costs. = A replica using current materials and construction methods. e.g. The Union Buildings.

Replacement costs = The current cost, new, of a structure of modern design and material, which largely yields the same utility as that which the original improvements would have yielded.

There are various methods of cost calculation, varying in degrees of accuracy depending on whether you want to incur the cost of it being calculated by a quantity surveyor or by a valuer who is reasonably in tune with cost estimates.

Valuers nowadays are becoming better cost estimators, thanks to regular publications by certain quantity surveying practices.(e.g. SAPOA publishes a summary of costs article, by the CP De Leeuw Group.)

For the sake of simplicity and reasonable accuracy most valuers will use the square-metre method, and leave the more complicated methods such as the Approximate Quantities Method and Elemental Method to the quantity surveyors and architects.

Square-Metre Method

In this method costs are acquired by multiplying the total area of the building in square metres by a monetary amount (*MARITZ,N.G:-1989pg* **105**).

For example, an office buildings total area is say 10500 m2 and the expected cost is R600/m2. The cost of the building can then be estimated at 10500 x 600 = R6,300,000.

It is important that the valuer be aware of the names of at least four different ' costs per square metre ' employed in practice : Quoted from De Leeuw (1975)

1. Basic building rate : - excluding special items and site works and general.
2. Building rate i.e. : - basic rate plus special items such as specialist work, mechanical work etc., but excluding site works and general.
3. Project rate : - overall rate including site works and general.
4. Use factor rate ; - rate per usable or letable area.

When a valuer has to estimate costs, he must know which items must be included.
In general, cost must be estimated in such a way that those costs normally debited to the owners account are included, but also indirect costs such as :

- expenditure for registration of title deeds and legal fees.
- expenditure prior to the construction program i.e. consultations, surveys, demolition's, permits, etc.
- professional fees i.e. architects, quantity surveyors, town planners, engineers.
- property tax during construction period.
- insurance during construction period.
- administrative expenditure incurred by the owner.
- the building contractors profit if not included under direct costs ***(MARITZ,N.G:-1989 pg 108).***

4.3.2 Depreciation

A lot of confusion and a lot of subjectivity surrounds this area of discussion.
In the valuation process depreciation to property can be described as the deterioration of any of the attributes bestowed upon it by nature, its physical condition, its utility or purposeful use and that of any of its components contributing thereto, irrespective of the causes thereof..
A possible explanation for the confusion, is that depreciation is not only important for real estate valuation, but is also found in accountancy practice and in the calculation of income tax.

In each of these spheres of application, depreciation has a different meaning and is employed to achieve different objectives.

Another way of looking at it is, depreciation is a market discount on construction costs in order to reduce these to actual market value.

In Real Estate Valuation it is argued that there are 3 main reasons for depreciation :

1. Physical or Structural Deterioration of Improvements.

   Wear and tear, maintenance neglect, poor construction, in-competent installation, misuse and the natural elements are usually the causes of physical depreciation of an improvement on land. The depreciation is either curable (the amount of depreciation is equal to the cost of curing the physical deterioration) or incurable. The condition presents itself when the deterioration of an improvement has gone so far that to restore its utility would not warrant the cost to cure its deficiencies or it can no longer be cured. A building having reached this stage can still serve some useful purpose. In this case, its depreciation is reviewed under 'functional obsolescence.'

2. Functional Obsolescence of an Improvement.

   Functional obsolescence of an Improvement is that which causes its value to decline because of its inadequacy to satisfy the useful purpose which was assigned to it. A building improvement may be structurally sound and maintained in good condition, but because of its design or lack of modern amenities and facilities or its inability to attract occupants, its useful purpose can diminish.

   Industrial buildings tailored to serve specific purposes do not always meet the needs which other industries require.

   As in the case of physical depreciation, functional deterioration can generally be established by visual means or by making inquiries among knowledgeable persons who are acquainted with the building. Most valuers who operate in the locality usually need no coaching in this regard.

   Curable Functional Obsolescence

   It is also curable, if a building suffering from functional deterioration is to be valued, the estimated cost of modernising or adapting it and thereby restoring its lost functionality should logically represent the degree of obsolescence which has occurred from that source before restoration, provided that the cost to cure the

deficiency is economically justified. The curing of functional obsolescence, because it invariably involves structural adjustments, becomes, to a degree, associated with physical cure and vice versa. The curing of the one can consequently contribute towards the curing of the other. Allowance should therefore be made for this possibility in order to avoid a measure of duplication.

Incurable Functional Obsolescence

When an immovable improvement which has served its purpose cannot be adopted to serve another use, or when the cost to do so would be un-economic, it becomes obsolete and has no value other than scrap, or in the case of a building, what the materials would realise.

3. Economic Obsolescence.

   This is an aspect of depreciation which cannot be related to an improvement alone. It is caused mainly by extraneous circumstances usually ascribed to the changing character of a locality, rezoning, population drifts and one or other economic law which imposes conditions of change or prevents maximum utility achievement. Economic deterioration brought about in this way applies to a property unit as a whole. It is indivisible and cannot be appointed in part to the improvements and a part to the land. It represents a degree of obsolescence which is sometimes curable depending upon prevailing economic and environmental conditions.

Depreciation is a continuing process. A valuer must fix a point of time which is to be the effective date of valuation. Various theories and methods have been advanced by which accrued depreciation can be estimated, other than the *cost-to-cure method* discussed above. We shall now take a look at these methods.

4.3.3 The Effective Age of a Building

The actual age of a building need not be the same as the effective age of a building which is measured by comparing the physical condition of the building at the time of the valuation with its condition when newly constructed. A well maintained building's effective age can be less than its actual age, as well as vice versa.

4.3.4 The Straight-Line Age Method

This is a direct method of estimating accrued depreciation by which a flat rate is calculated according to the effective age of the improvement in relation to its full span of useful life. Working on a percentage basis, the first step is to divide 100% by the estimated full period of usefulness of the improvement.

If, for example, this is estimated to be 45 years, then 100% divided by 45 equals a flat annual depreciation of 2,22%. The next step is to apply the rate of depreciation per annum to the effective age of the improvement so that its ratio to the full span of useful life can be measured. If the effective age is considered to be, say 40 years, it is multiplied by 2,22%. The answer is 88,8% , which represents the accrued depreciation.

Assuming the replacement cost is estimated to be R 40,000.00, then the depreciation amounts to 88,8% of R 40,000.00 which is R 35,520.00. It would appear, however, that in this method too much reliance is placed on having to estimate and subsequently substantiate many aspects which in reality are unpredictable, except for replacement cost estimates. The *cost-to-cure method*, however, has the advantage that a valuer can be guided, where necessary, by professionals, technicians and contractors who can base their predictions on their experience.

4.3.5 The Abstraction Method

A method which is frequently employed by valuers for the valuation of properties for rating or other fiscal purposes or where it is required that a division of the market value between land and improvements must be detailed, is called the *abstraction method.*

We shall not discuss this method any further as it is not relevant to this report ***(MARITZ,N.G:-1989,pg*** **109).**

4.4 RESIDUAL LAND VALUE

This is a method most commonly used by property developers and is based on a combination of methods already discussed.
It can be used on bare land which is still to be developed ; or on land with existing buildings that need a refurbishment or alteration ; or possibly even needs to be demolished and redeveloped with entirely new buildings.

The method works on the premise that the price which a purchaser can pay for a property is : the surplus after he has met out of the proceeds from the sale of the finished development ; the costs of construction ; the costs of purchase and sale ; the costs of finance ; and an allowance for profits required to carry out the project.

This can be expressed as follows :

	VALUE [the anticipated price which will be obtained on sale]
less	COSTS OF DEVELOPMENT and PROFITS
=	**SURPLUS FOR LAND [RESIDUAL VALUE]**

This is an extremely useful method for any developer as it gives him the opportunity to quantify in monetary terms the value of a piece of land earmarked for development or renovation, and thus gives the developer a ***target*** during negotiations for purchase.

The concept is basic, but as a method dependant on many variables the margin for error becomes greatly increased.

- The first step required by the developer is to ascertain the properties ***highest and best most probable use*** .
- Having done so, the developer needs to work out what the ***projected value*** of the property will be.

1. **Value.**

   This can be done by assigning what the developer deems the most appropriate method for capital projection, in accordance with the highest and best use he has decided on.(see 4.1, 4.2, 4.3, 4.4 on value deriving methods.)

2. **Cost.**

   The next thing the developer must do is calculate the cost of development and the developer's profit. Depending on the accuracy required, the developer will decide whether to use the services of a quantity surveyor and/or project manager for costing estimates.

Both of these above elements require future projections over which there is a lot of subjectivity involved. Developers using this method should therefore make sure that a thorough analysis has been carried out before bidding on a piece of property.

An important judgement on this method is :

ESTATE MARKS v PRETORIA CITY COUNCIL 1969 3 SA 227(A)

On page 249A the judge goes on to say :

"The validity of a residual land value projection vitally depends upon three basic factors namely (a) the development cost of the projected building ; (b) the anticipated net income from the project ; and (c) the net yield required by the prospective purchaser."

Error in calculations of either of these factors will obviously materially effect the result.

Cripps says at pages 899, 901, 906 and 907 of his book.

"The residual value method will not be adopted where comparable sales can be found."

CHAPTER 5

QUESTIONNAIRE

Introduction.

A questionnaire analysing the different approaches adopted in property valuation methods was sent to 100 different practising South African property professionals with a response rate of 27 %. The criteria for selection was based on the property professionals playing an active commercial role in the S.A market as well as being responsible for porfolio's/valuations/developments in excess of R25 million.
The valuers were chosen from a list of accredited valuers from 'The South African Valuer' South Africa's only official valuation publication. (For a full listing of the property professionals involved see chapter 5, question 1).

The main objective of the questionnaire is to give the reader of this report a practical, statistical breakdown of how the professionals in the South African property market go about their property valuations and in so doing serve as a guide for the general public.
The analysis of the questionnaire is done by looking at each question individually.
N.B. Please note that the numbering of the questionnaire in this chapter in no way reflects the numbering of the original questionnaire (see Appendix A).
The calculations of the results found in this questionnaire can be found in 'Appendix B'.

Question 1.

This question lists the people who completed the questionnaire, together with their company names, the positions held within their companies and their areas of expertise. Most of the respondents listed that they fall into more than one category of property professional, thus giving this questionnaire an added dimension of diversity.
Question 1, serves to gives you a background of the property professionals making up this questionnaire.

Question 2.

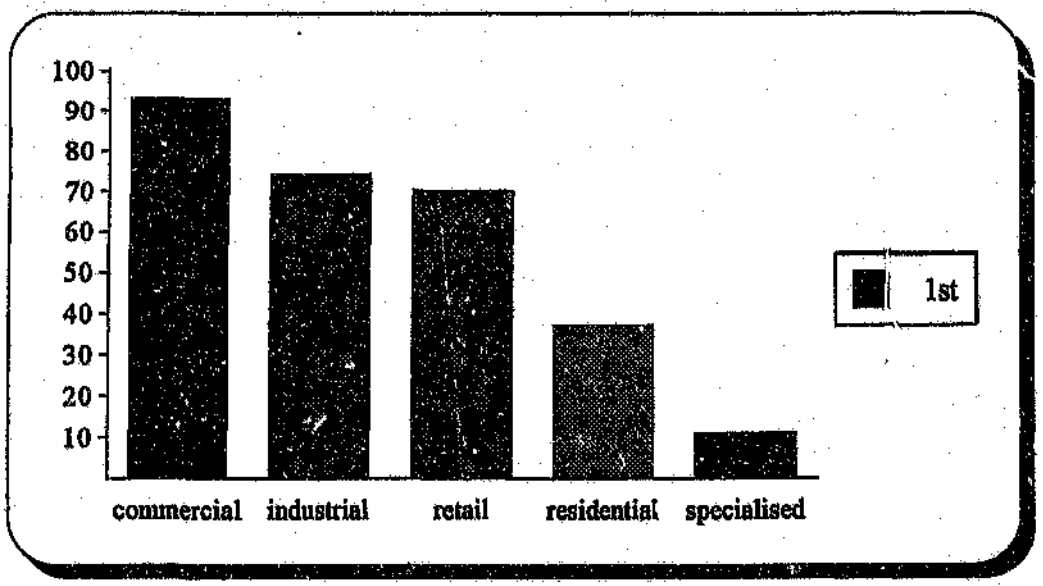
The areas of speciality of the 27 respondents have been divided into five divisions namely:

1. Commercial - 93%
2. Industrial - 74%
3. Retail - 70%
4. Residential - 37%
5. Specialised - 11%

This breakdown is important, as it indicates the concentration of the different types of property the property professionals making-up this questionnaire batch specialise in. One can deduce from these results that the overwhelming majority of respondents specialise in business related properties.

Note : Percentages do not sum to 100% in each column since companies may specialise in more than one method.

Graph 3.



Question 3.

This question gives the reader an indication of what the South African market, based on the sample of property professionals questioned, perceives to be the most popular property valuation methods.

This question makes use of a table which includes the average rank for each of the five methods. Note that for each method, the average rank is weighted by the relative frequencies in each cell.

The standard deviation for each of these methods has also been included. The standard deviation gives a measure of the spread of the rankings - a small standard deviation implies the companies were fairly consistent in their ranking of that method. One can therefore be more confident in the results for methods with smaller standard deviations. The distribution of the data for each method in the table shows clearly that the direct capitalisation method has the highest ranking (i.e. closest to 1) and has the smallest spread. The comparable sales method has the next highest ranking, and the second smallest spread. Note, however, that a high ranking does not necessarily imply a small spread - it just happens to be so in this case.

Figure 9.

Rank	Direct Capitalisation	DCF	Comparable Sales	Land Residual	Replacement Cost
1	16	5	4	2	1
2	7	4	9	2	4
3	2	7	4	7	2
4		4	4	2	6
5				3	9
Sum	*25*	*20*	*21*	*16*	*22*
Average rank	1.44	2.5	2.38	3.13	3.82
Standard deviation	0.64	1.07	1	1.22	1.27

A pairwise Student's T-test (fig 10) has also been done on the direct capitalisation method *Vs* each of the other methods.

The conclusion of the test is that it has been statistically proven that the direct capitalisation method is used more frequently on the whole (i.e. not only in the sample chosen) than any of the other methods.

Figure 10.

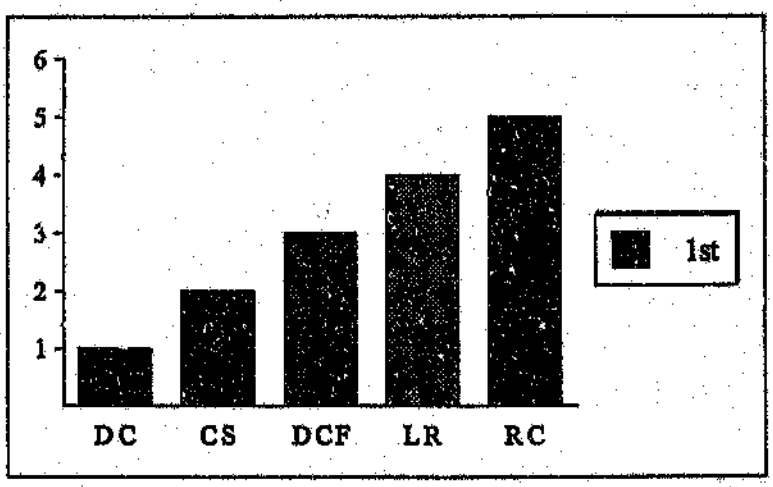
To test whether the Direct Capitalisation method has a significantly higher rank than method x :

X	DCF	Comparable Sales	Land Residual	Replacement Cost
Sample size : x	20	21	16	22
Pooled sample variance	0.735	0.668	0.883	0.935
Pooled sample std deviat	0.857	0.817	0.940	0.967
t statistic	*-4.121*	*-3.890*	*-5.602*	*-8.412*
Degrees of freedom	43	44	39	45

Each of the above t statistics are significant at the 0.05% level. Hence, the Direct Capitalisation method has a significantly higher rank than each of the other methods, and can be seen as the most frequently used method on the whole.

In conclusion the above statistics depicted in Figure 10, below show that the direct capitalisation method is by far the most popular valuation method, followed by the comparable sales, discounted cash flow, land residual and the replacement cost method. In order to maintain accuracy in valuations it is advisable to use more than 1 method as a means of checking your valuation.

Graph 4.



Question 4.

This question deals with variations to the 5 standard valuation methods already mentioned. Of the 27 respondents, 14 use variations of the standard valuation methods, that is a percentage of 52%.

Some of the most common variations are as follows :

1. A discounted cash flow that provides for a sinking fund.
2. The opportunity cost and hard core/top-slice cash flow.
3. Adjustments are made for specifics, e.g. a building with a high percentage of vacancies. These vacancies are valued at an assumed rental which may be +- 20% lower than the average rentals of the let space.
4. Residential values are determined by EMOTION, what the wife wants is what she gets, no matter what the price.
5. Replacement cost methods that make an allowance for scarcity.
6. Estimated Depreciated New Replacement Cost =
   estimated new replacement cost x estimated replacement life / estimated operational life.

This question implies that more than half the respondents questioned have developed with their experience some sort of variation to the standard methods used, and that one needs to do a few valuations before reaching the stage of fine tuning a valuation to meet specific criteria.

Question 5.

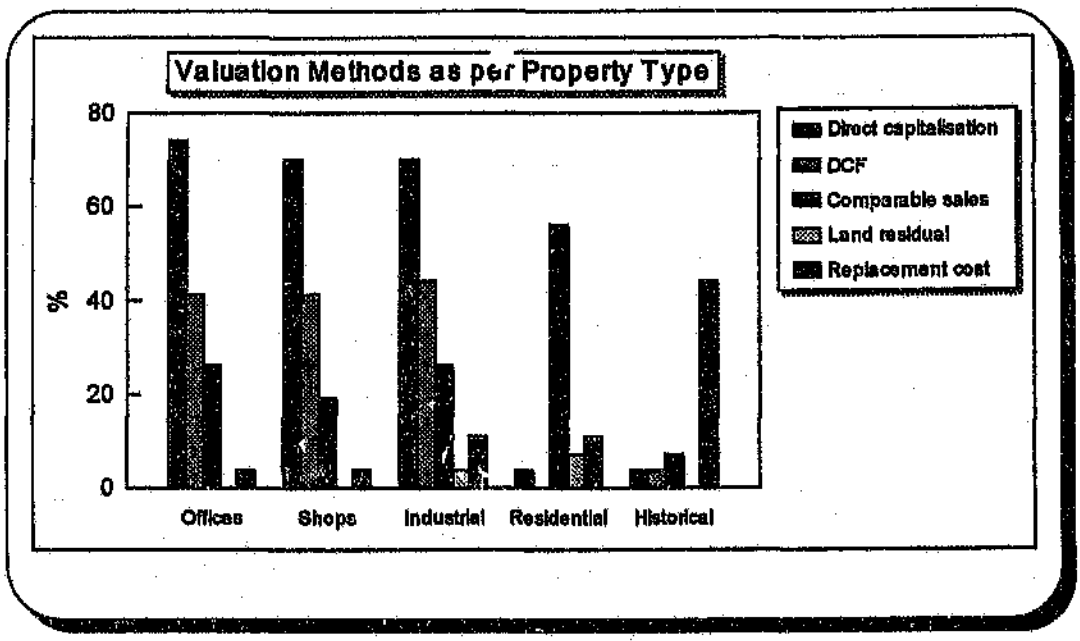
This question deals with what property professionals feel are the most appropriate methods of valuation which apply to a particular type of property, and is possibly the most useful information for someone new to property valuation.

Figure 11.

	Offices	Shopping Centres	Industrial	Residential	Historical Buildings
Direct capitalisation	20	19	19	1	1
%	*74%*	*70%*	*70%*	*4%*	*4%*
DCF	11	11	12	0	1
%	*41%*	*41%*	*44%*	*0%*	*4%*
Comparable sales	7	5	7	15	2
%	*26%*	*19%*	*26%*	*56%*	*7%*
Land residual	0	0	1	2	0
%	*0%*	*0%*	*4%*	*7%*	*0%*
Replacement cost	1	1	3	3	12
%	*4%*	*4%*	*11%*	*11%*	*44%*

Note: Percentages do not sum to 100% in each column since property professionals may use more than one method.

Graph 5.



Responses to this question clearly shows that when valuing an income producing property i.e. offices, shops/shopping centres and industrial type properties, the **direct capitalisation method** is the most used method followed by the discounted cash flow and comparable sales methods.

When valuing residential properties the **comparable sales method** is the most used, and finally the method most used to value a historical building is the **replacement cost method**.

The above statistics serve as the most important guide for people wanting to perform a valuation with limited or no valuing experience, as the statistics show exactly which methods the market is most comfortable with for a particular type of property.

It is always useful to use more than one method as a means of checking.
The back up method used to check, should be the one ranked second or third most popular.

Question 6.

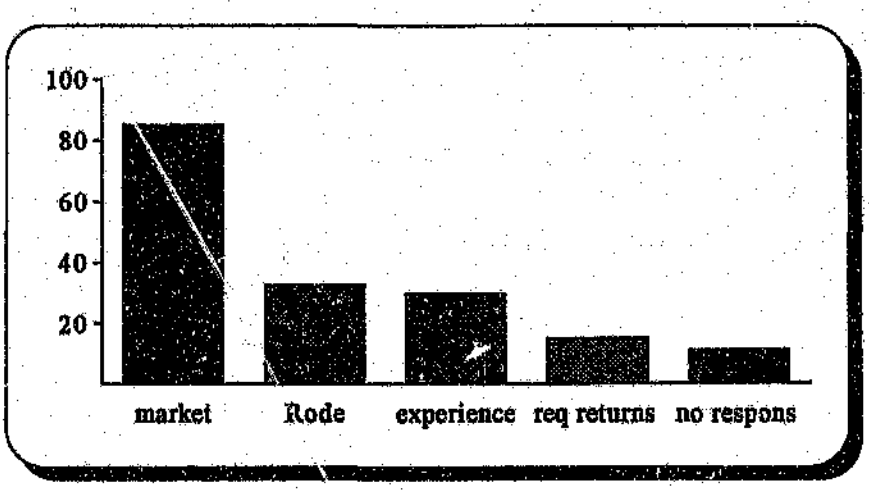
6.1 If your approach requires a CAP Rate, from where do you get this figure ?

The answer to this question has been broken down into 5 possible categories, namely :

1. From market information 85%
2. From the Rode Report 33%
3. From working experience 30%
4. From investors required returns 15%
5. No response 11%

Note: Percentages do not sum to 100% in each column since property professionals may use more than one method.

Graph 6.



Market information - is sourced from ; comparable sales , information from brokers , financial institutions , word of mouth , etc.

Question 6.1 cannot be read on its own without 6.2 as each property is unique, and attaches different risk premiums and growth prospects to the different criteria surrounding the property. Therefore having found the source of the cap rate in general terms, it is still necessary to fine tune this cap rate with the criteria that makes each property unique (see 6.2).

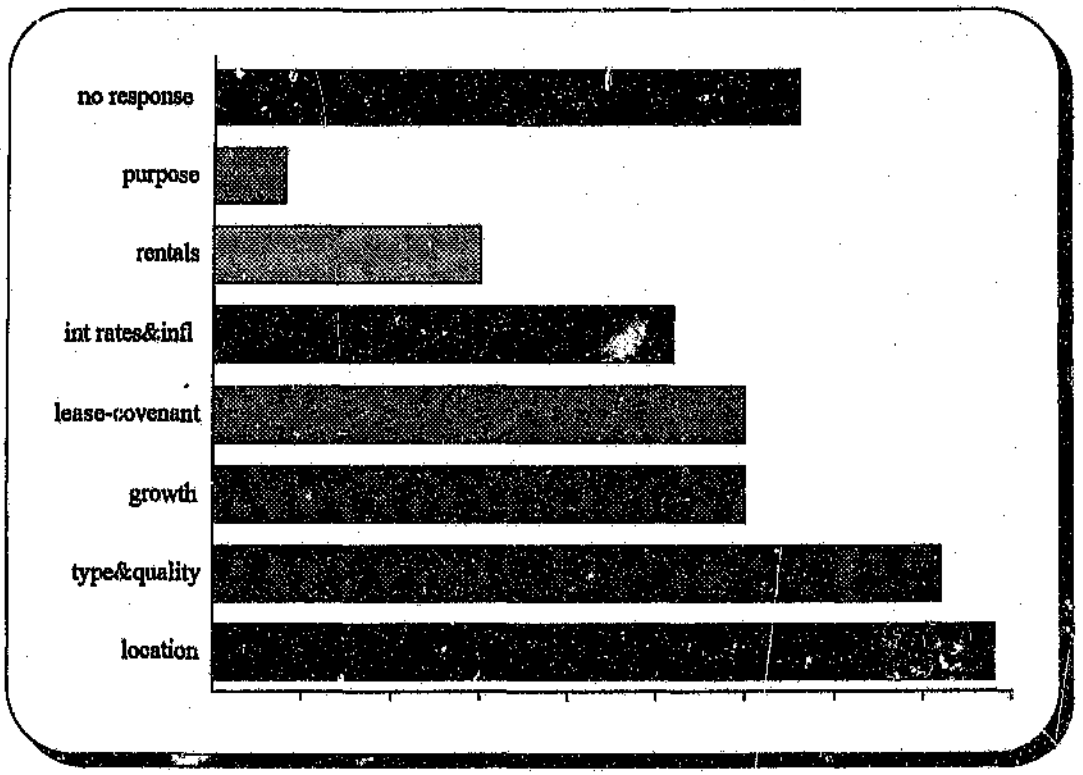
6.2 If you compile your own CAP Rate, what criteria do you look for and use to derive this figure ?

The results from the questionnaire tell the following story :

1.	Location	44%
2.	Type of property & its quality	41%
3.	Lease-covenant	30%
4.	Growth prospects based on supply & demand	30%
5.	Interest rates & inflation	26%
6.	Current rentals	15%
7.	Purpose of valuation	4%
8.	No response	33%

Note: Percentages do not sum to 100% in each column since property professionals may use more than one method.

Graph 7.



Question 7.

7.1 If your approach requires a Discount Rate, from where do you get this figure ?

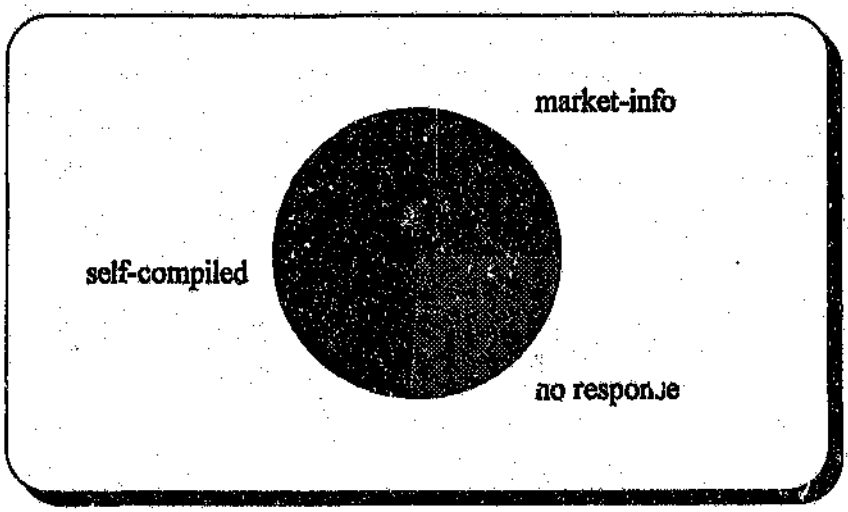
In answer to this question, market information refers to discount rates obtained from : brokers, comparable sales, publications (i.e. Rode), etc, which are then adjusted to fit the specifics of a particular property.

Self-compiled refers to the valuer deriving a discount rate entirely from the criteria in 7.2.

The findings of this question are :

1. Market information 26%
2. Self-compiled 48%
3. No response 26%

Graph 8.



7.2 If you compile your own Discount Rate, what criteria do you look for and use to derive this figure ?

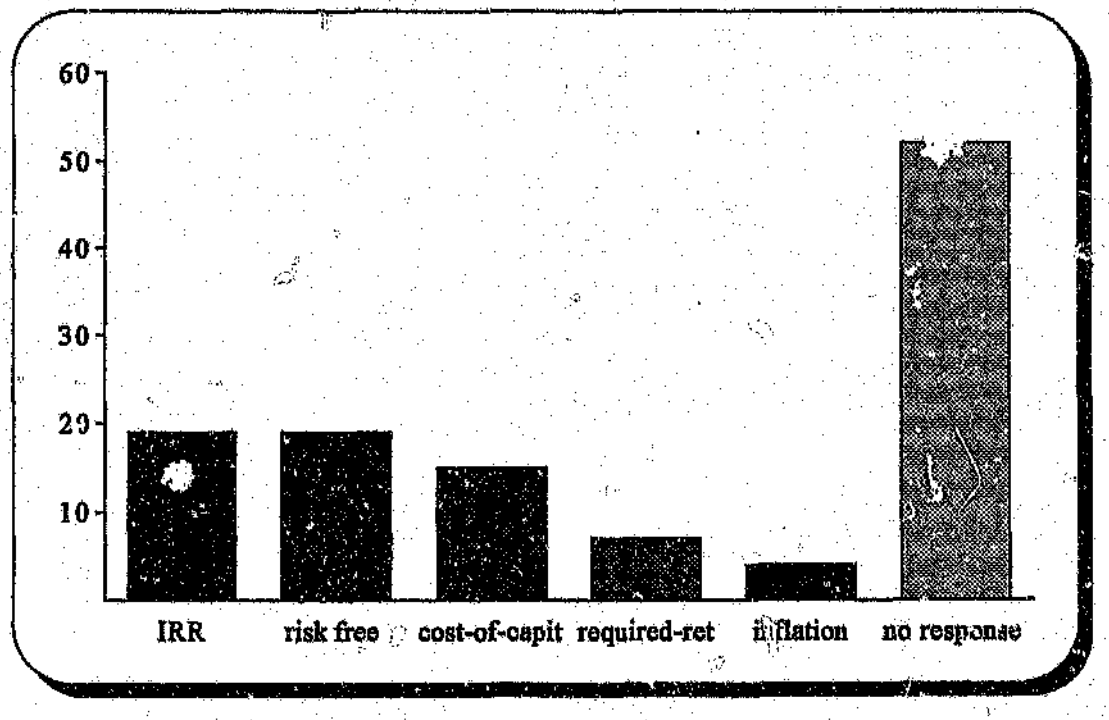
1. Internal Rate of Return (IRR) 19%
2. Risk-free rate of return 19%
3. Cost of Capital 15%
4. Required Return 7%
5. Inflation prospects 4%
6. No response 52%

Note: Percentages do not sum to 100% in each column since property professionals may use more than one method.

In all these criteria a risk premium suitable for the specifics of a particular property needs to be built into the discount rate.

In the IRR (1) and the required return (4) the risk premium is already built into the calculation, whereas in the other cases the risk premium must still be added to the risk free rate (2) the cost of capital (3) and inflation prospects (5).

Graph 9.



Question 8.

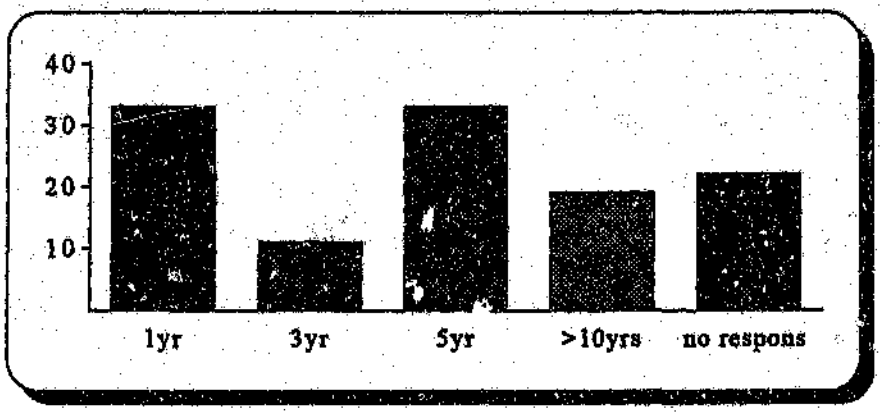
8.1 If you believe in incorporating economic predictions into your valuation methods, how far into the future do you predict ?

The answers received tell us the following :

1.	1 year	33%
2.	3 years	11%
3.	5 years	33%
4.	10 years or longer	19%
5.	No response	22%

Note: Percentages do not sum to 100% in each column since property professionals may use more than one method.

Graph 10.



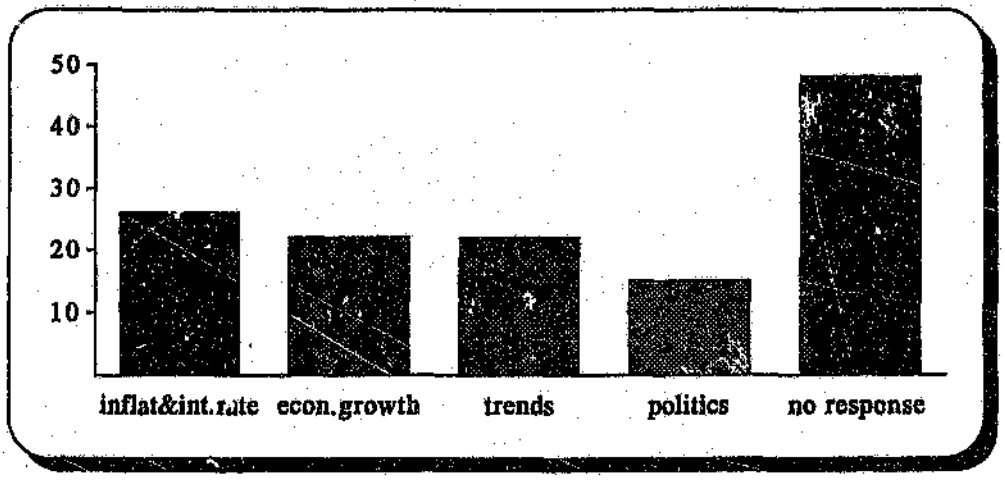
The majority of valuers from our sample, base their economic predictions over a rough period of 1-5 years, with only a 19% predicting 10 years or longer.

8.2 If you believe in incorporating economic predictions into your valuation methods, what are the main criteria that you look for ?

1.	Inflation & Interest rates	26%
2.	Economic growth	22%
3.	Current market trends	22%
4.	Political trends	15%
5.	No response	48%

Note: Percentages do not sum to 100% in each column since property professionals may use more than one method.

Graph 11.



From the above statistics one can deduce that inflation & interest rates play the most important role alongside economic growth when it comes to economic predictions, with politics playing the least important role.

Interestingly, these statistics seem to ignore the fact that politics has been the most influential factor effecting property prices over the last decade or so.

The reason for this seeming contradiction, is based on the fact that one can establish with a little more certainty what is likely to happen with inflation, interest rates and economic growth. Whereas the future political climate is so unpredictable that less emphasis is placed on incorporating it into valuations.

Current market trends look at economics on a micro-level for example ; Midrand is enjoying high growth on a local level.

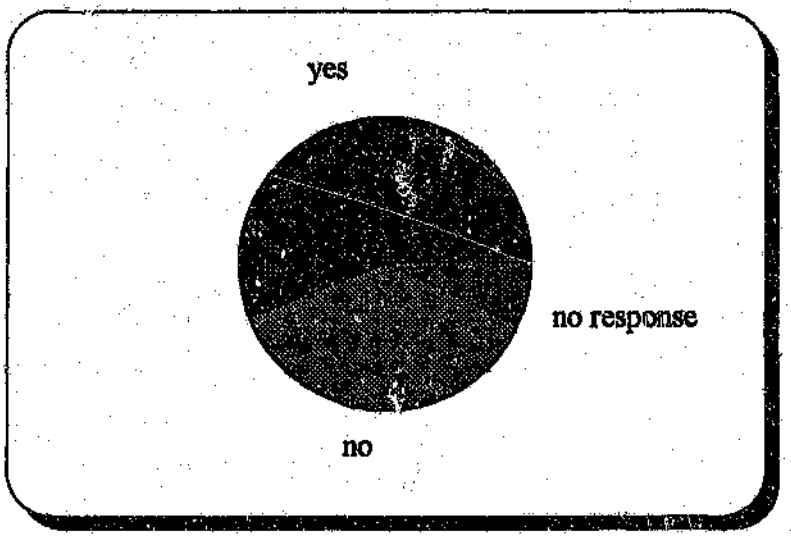
Question 9.

Do you believe that the property professionals in the property industry today are any closer to making more accurate valuations than they were 10 years ago ?

1. Yes 56%
2. No 37%
3. No response 7%

The main reason given was the greater access to information and the speed and accuracy of performing mathematical computations via computers.

Graph 12.



Question 10.

Do you believe that computer aided valuation programs are putting the Valuation Profession at risk ?

The answer to this question was a resounding NO! (89%)
The reason for this answer is, no property is identical and therefore no matter how sophisticated the programme, somebody will have to input certain assumptions surrounding the property.

Question 11.

11.1 *Comparable Sales*

Advantages :

1.) Accurate market indicator.
2.) Potentially the most accurate.
3.) Information is available for residential property in the Deeds office.
4.) Acceptable in court.

Disadvantages:

1.) No two properties are the same.
2.) Too subjective in making allowances for differences.
3.) Deeds office does not make information available on companies and close corporations.
4.) Not suitable for specialised properties.
5.) Many deals do not take place at 'arms length.'e.g. a father may sell a property to his son.

11.2 *Discounted Cash Flow.*

Advantages :

1.) It takes the time value of money into account.
2.) Usually working with factual income streams - via leases.
3.) It is flexible.
4.) The profits and life of an investment can be worked out.

Disadvantages :

1.) Future cash flows can be effected by economic & political factors.
2.) Assumptions made on rentals, expenses, discount rates may be inaccurate.
3.) The subjective choice of the discount rate.
4.) This method can be cumbersome.
5.) Industry has been slow to accept , due to its lack of understanding.
6.) Small mistakes result in big differences.
7.) Rentals may be above or below market norms.

11.3 *Direct Capitalisation*

Advantages :

1.) Accepted and used by Institutions throughout R.S.A.
2.) It's the market bench-mark method for income producing properties.
3.) It is quick and easy to use.
4.) The necessary information is usually available.

Disadvantages :

1.) Most users do not understand the theoretical base and therefore make inaccurate assumptions.
2.) Small variations in Cap Rates cause very large changes in value.
3.) There is a lot of subjectivity in choosing the Cap Rate.
4.) It does not always take market-related rentals into account.
5.) It does not always take into account the physical and other differences in a property.

11.4 *Land Residual*

Advantages :

1.) The best method for undeveloped/vacant land.
2.) Useful for determining the maximum that can be paid for land at a desired return if developed.
3.) The only method available to value land when there are no comparable sales.
4.) Excellent for new developments and redevelopments.
5.) Highest and Best use of property is used.

Disadvantages :

1.) Too many variables , thus making projections difficult.
2.) Very subjective assumptions.
3.) Not readily accepted by the courts.

11.5 *Replacement Cost*

Advantages :

1.) Mostly used for insurance purposes.

2.) It is good to use as a check on other methods.

3.) Accurate estimates can be obtained if an experienced quantity surveyor (Q.S.) is used.

Disadvantages :

1.) Not related to market value.

2.) Only appropriate for a specific purpose.

3.) Determining depreciation is very subjective.

4.) It ignores income generating ability.

5.) It can only be prepared accurately by a Q.S.

CHAPTER 6

CONCLUSION

After reading through this research report, there is one thing the reader can say with certainty. **"There is nothing exact about property valuation !"**

The author believes the objectives of this report have been successfully achieved for the following reason :

- It is believed a lay person with little or no valuation experience can after studying this report, comfortably understand the theoretical background and the practical application of the valuation process.

After being introduced to the terminology and tools that make up the valuation industry the reader is given an insight into the economic factors that affect property values. This is followed by a comprehensive look into the application of the valuation methods, and concluded with the advantages and disadvantages of each method.

With the information obtained from the questionnaire, the reader is able to incorporate the knowledge of experienced property professionals into his/her valuation, and thus tap into the markets practical approach to property valuations.

Based on the data analysis of the questionnaire in Chapter 5 the reader is shown amongst other things, which are the most used methods of valuation for different types of property. This gives the **inexperienced** valuer a launching pad from where to start his/her valuation. The finding's from the questionnaire show the reader how experienced property professionals deal with the subjective elements making up the valuation process e.g. the deriving of the capitalisation rate, factors that affect the risk of a property, etc.(see Chapter5)

Following the set procedure laid out in this report the valuer's chances of achieving an accurate valuation are greatly enhanced, but the accuracy of the valuation cannot be guaranteed due to the subjective nature of the assumptions required in a valuation. The information obtained from the questionnaire will no doubt afford the valuer, with whatever level of experience, the opportunity to make reasonably accurate valuations. However the accuracy of the valuation will depend largely on the valuer's skill at reading the market on both a micro and macro level.

Therefore in conclusion, this research report has **highlighted & explained** the key elements which people with varying degrees of experience and interest in property valuation, can use to make accurate valuations.

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APPENDIX - A

QUESTIONNAIRE

1. Under what category of property professional do you fall ?

	Tick where appropriate
Investors on behalf of Financial Institutions	
Lenders of property finance	
Property developers	
Valuers	
Private investors/speculators	
Property managers	

2. Could you please state your name and the name of the company you work for and the position you hold within that company ? _____

3. Do you specialize in any particular type of property or property type transaction ?_____

4.1. Would you please rank the valuation methods you use most frequently ?

Rank	Method	√ If never use
	Comparable sales	
	Discounted cash flow	
	Direct capitalisation	
	Land residual method	
	Replacement value	

4.2. If you use a variation of one of these methods or you use your own method , please specify and give details .

5. Which valuation methods do you use when valuing the following properties , giving reasons for your answers.

Number	Property type	Method used
5.1	offices	
5.2	shops/shopping centres	
5.3	industrial	
5.4	residential	
5.5	historical buildings	

Please give reasons for choosing a method and where you use a variation of the methods listed in question 4.1 , please give details .

5.1.)

5.2.)

5.3.)

5.4.)

5.5.)

6.1. If your approach requires a CAP Rate , from where do you get this figure ?

6.2. If you compile your own CAP Rate , what criteria do you look for and use to derive this figure?

7.1. If your approach requires a Discount Rate , from where do you get this figure ?

7.2.If you compile your own Discount Rate , what criteria do you look for and use to derive this figure ?

7.3. How many cash flows do you use with the Discounted Cash Flow method or do you limit it to the length of your lease ?

8. What do you think the advantages and disadvantages of the following methods are :

8.1.

COMPARABLE SALES

ADVANTAGES	DISADVANTAGES

8.2.

DISCOUNTED CASH FLOW

ADVANTAGES	DISADVANTAGES

8.3.

DIRECT CAPITALIZATION

ADVANTAGES	DISADVANTAGES

8.4.

LAND RESIDUAL METHOD

ADVANTAGES	DISADVANTAGES

8.5.

REPLACEMENT VALUE.

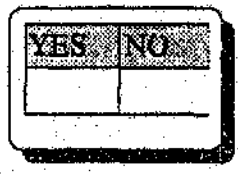
ADVANTAGES	DISADVANTAGES

9. If you believe in incorporating economic predictions into your valuation methods ,what are the main criteria that you look for and how far into the future do you predict ?_____

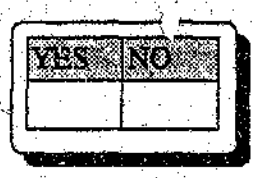
10. Do you believe that the property professionals in the property industry today are any closer to making more accurate valuations than they were 10 years ago ?_____

11. Do you believe that computer aided valuation programs are putting the Valuation Profession at risk ?_____

12. Would you like a copy of the completed Research Report mailed to you ?



13. Would you like your answers to the questionnaire to remain confidential ?



APPENDIX - B

Question 2					
Number		AREAS OF SPECIALITY			
	Commercial	Industrial	Residential	Retail	Specialised
1	1	1		1	
2	1	1	1	1	
3	1	1			
4	1	1	1	1	
5	1	1	1	1	
6	1				
7	1	1			
8	1	1			
9	1			1	
10	1	1	1	1	
11	1	1		1	
12		1	1		1
13	1		1		
14	1	1			
15	1	1		1	
16	1			1	
17				1	
18	1			1	
19	1	1		1	
20	1	1	1	1	1
21	1			1	
22	1	1	1	1	
23	1	1		1	
24	1	1	1	1	
25	1	1		1	
26	1	1			
27	1	1	1	1	1
TOTAL	25	20	10	19	3
%	93%	74%	37%	70%	11%
Note: Percentages do not sum to 100% in each column since companies may be specialise in more than one category.					

Question 3

Figure 10

Rank	Direct Capitalisation	DCF	Comparable Sales	Land Residual	Replacement Cost
1	18	5	4	2	1
2	7	4	9	2	4
3	2	7	4	7	2
4		4	4	2	6
5				3	9
Sum	25	20	21	16	22
Average rank	1.44	2.60	2.38	3.13	3.82
Standard deviation	0.84	1.07	1.00	1.22	1.27

Figure 11 **Students T-test**

To test whether the Direct Capitalisation method has a significantly higher rank than method X:

X	DCF	Comparable Sales	Land Residual	Replacement Cost
Sample size: X	20	21	16	22
Pooled sample variance	0.735	0.668	0.883	0.935
Pooled sample std devn	0.857	0.817	0.940	0.967
t statistic	*-4.121*	*-3.890*	*-5.602*	*-3.412*
Degrees of freedom	43	44	39	45

Each of the above t statistics are significant at the 0.05% level. Hence, the Direct Capitalisation method has a significantly higher rank than each of the other methods, and can be seen as the most frequently used method on the whole.

	Offices	Shops/Shopping Centres	Industrial	Residential	Historical Buildings
Direct capitalisation	20	19	19	1	1
%	74%	70%	70%	4%	4%
DCF	11	11	12	0	1
%	41%	41%	44%	0%	4%
Comparable sales	7	5	7	15	2
%	26%	19%	26%	56%	7%
Land residual	0	0	1	2	0
%	0%	0%	4%	7%	0%
Replacement cost	1	1	3	3	12
%	4%	4%	11%	11%	44%

Note: Percentages do not sum to 100% in each column since professionals may use more than one method.

QUESTION 6.1

Number	Rade Report	Market Info	Experience	Required Return	No response
1	1		1		
2					1
3	1	1			
4		1	1		
5	1	1			
6					1
7	1	1			
8		1	1		
9		1			
10		1	1		
11		1			
12	1	1			
13		1	1		
14		1			
15	1	1			
16	1	1			
17	1	1		1	
18		1			
19		1			
20		1		1	
21		1			
22		1			
23	1	1			
24		1	1		
25		1	1		
26					1
27		1	1		
TOTAL	9	23	8	4	3
%	33%	85%	30%	15%	11%

Note: Percentages do not sum to 100% in each column since professionals may use more than one method.

QUESTION 6.2

Number	Growth based on S & D	Location	Type of prop & quality	Lease covenant	Current rentals	Purpose of valuation	Int rates & inflation	No response
1	1	1	1					
2								1
3			1					
4		1	1	1	1			
5		1	1	1	1			
6	1			1	1		1	
7						1		
8							1	
9								1
10	1	1	1	1				
11	1	1						
12	1	1		1	1		1	
13	1	1	1	1				
14								1
15							1	
16	1	1	1	1				
17								1
18							1	
19								1
20		1	1				1	
21		1	1				1	
22		1	1					
23								1
24								1
25	1	1	1	1				
26								1
27								1
TOTAL	8	12	11	8	4	1	7	9
%	30%	44%	41%	30%	15%	4%	26%	33%

Note: Percentages do not sum to 100% in each column since professionals may use more than one method.

QUESTION 7.1

	Self-compiled	Market info	No response
Total	13	7	7
%	48%	26%	26%

QUESTION 7.2

	Risk free rate	IRR	Inflation prospects	Cost of capital	Required return	No response
Total	5	5	1	4	2	14
%	19%	19%	4%	15%	7%	52%

Note: Percentages do not sum to 100% since professionals may use more than one criterion.

QUESTION 8.1

	1 year	3 years	5 years	> 10 years	No response
Total	9	3	9	5	6
%	33%	11%	33%	19%	22%

Note: Percentages do not sum to 100% since professionals may use a number of approaches.

QUESTION 8.2

	Economic growth	Inflation & interest rates	Political climate	Current trends	No response
Total	6	7	4	6	13
%	22%	25%	15%	22%	48%

Note: Percentages do not sum to 100% since professionals may use more than one criterion.

Question 9				
	Yes	No	No response	
Total	15	10	2	
%	56%	37%	7%	
Question 10				
	Yes	No	No response	
Total	1	24	2	
%	4%	89%	7%	

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