

CHAPTER 1

INTRODUCTION

CHAPTER 1

TABLE OF CONTENTS

PAGE NO.

1.0	INTRODUCTION	1
1.1	THE CAPITALISATION OF INCOME METHOD OF VALUATION	2
1.1.1	Principal Elements Of The Capitalisation Of Income Method Of Valuation	4
1.1.2	Concepts Underlying The Capitalisation Of Income Method Of Valuation	5
1.1.3	The Capitalisation Of Income Method Of Valuation As A Model	6
1.1.4	The Capitalisation Of Income Method Of Valuation As A Process	11
1.1.5	Changes To The Capitalisation Of Income Method Of Valuation Over Time	13
1.1.5.1	Pre-Reverse Yield Gap	15
1.1.5.2	Post Reverse Yield Gap	16
1.1.5.3	Summary - Changes To The Capitalisation of Income Method Of Valuation Over Time	23
1.1.6	Summary - The Capitalisation Of Income Method Of Valuation	24
1.2	CURRENT METHODS OF CAPITALISATION RATE SELECTION	25
1.2.1	Analysis Of Comparable Evidence	32
1.2.2	Adjustment Of Comparable Evidence	34
1.2.3	Criticisms Of The Capitalisation Of Income Method Of Valuation	38
1.2.3.1	Criticism Of The Investment Method	39
1.2.3.2	Criticism Of The Capitalisation Rate	40
1.2.3.3	Summary - Criticism Of The Capitalisation Of Income Method Of Valuation	42
1.2.4	Extent Of And Defences Of Permissible Inconsistency	42
1.2.4.1	Extent Of Permissible Inconsistency	43
1.2.4.2	Defences Of Inconsistency	48
1.2.4.2.1	Qualitative Defences	49
1.2.4.2.2	Quantitative Defences	52
1.2.4.3	Summary - Extent Of And Defences Of Permissible Inconsistency	54
1.2.5	Summary - Current Methods Of Capitalisation Rate Selection	54

1.3	ISSUES ARISING FROM THE CURRENT METHOD OF CAPITALISATION	
	RATE SELECTION	57
1.3.1	Principal Issue	57
1.3.2	Subsidiary Issues	59
1.3.3	Rationale For Addressing Issues Raised	62
1.3.4	Summary - Issues Arising From The Current Method Of Capitalisation	
	Rate Selection	63
1.4	THESIS PROBLEM AND APPROACH TO SOLUTION	64
1.4.1	The Thesis Problem	64
1.4.2	Approach To Solving the Thesis Problem	64
1.4.2.1	Proposed Solution	65
1.4.2.2	General Approach To Solution Of Thesis Problem	65
1.4.2.3	Thesis Approach To Solution Of Thesis Problem	66
1.4.2.4	Thesis Scope And Limitations	69
1.4.3	Summary - Thesis Problem And Approach To Solution	72
1.5	OUTLINE OF THESIS	73
1.5.1	Chapter 2 - Review Of Literature	74
1.5.2	Chapter 3 - Algebraic Modelling And Data Collection	75
1.5.3	Chapter 4 - Data Analysis	75
1.5.4	Chapter 5 - Econometric Development Of Model, Testing And Results	75
1.5.5	Chapter 6 - Summary, Areas For Further Research And Conclusions	76
1.5.6	Summary - Outline Of Thesis	76
1.6	SUMMARY, AREAS FOR FURTHER RESEARCH AND CONCLUSIONS	77
1.6.1	Summary	77
1.6.2	Areas For Further Research	78
1.6.3	Conclusions	80

TABLES

1.1	The Valuation Process	11
1.2	Selected World Cities - Relative CBD Office Market Structures	27
1.3	Selected World Cities - Relative Transactional Levels	28
1.4	Selected World Cities - Relative Quality And Availability Of Sales Data	29
1.5	Selected World Cities - Nature Of Valuing Party	30
1.6	Portfolio Valuation - Case Study	43
1.7	Summary Of Comparative Prices And Valuations from BBL	46
1.8	Process For Operation Of The Capitalisation Of Income Method Of Valuation	55

1.0 INTRODUCTION

This Thesis investigates aspects of the selection of the capitalisation rate, for use in the valuation of prime, Central Business District (CBD) office investment property by the capitalisation of income method, focussing on the determination process within the adjustment of capitalisation rate evidence deduced from the analysis of comparable sales transactions.

It will be contended that a more consistent approach to capitalisation rate adjustment, between properties at a point in time, will contribute to a reduction in the variability between valuers in capitalisation rate selection and hence in capital value assessments. Further, it will be proposed that the use of an econometric model will provide an approach of greater consistency than arises from the use of current methods, with an hypothesis that this will be manifest in a lower sample standard deviation.

In the context of static valuation methodologies, the capitalisation of income method (also known as the capitalisation method, income method or investment method) is generally considered to be one of the five principal methods of valuation, which may be summarised (per Britton et al (1980), Millington (1979), Richmond (1975) and Rost and Collins (1990)) as:

- direct capital comparison (also known as the comparative method or the comparison method);
- the residual method or approach or hypothetical development method;
- the profits method or approach (also known as the accounts method);
- the cost of replacement method or approach (also known as the cost, summation or contractors method or approach); and
- the capitalisation method.

The capitalisation of income method provides the basis for a range of alternative approaches, including term and reversion, layer, hardcore, equivalent yield and so forth. Whilst static or point in time valuation methodologies are traditionally distinguished from cash flow based or over time valuation methodologies, such distinction is least relevant in the case of the capitalisation of income method given its relative fundamental conceptual similarity.

This Chapter, therefore, seeks to review issues concerning the capitalisation of income method of valuation, to consider and establish the general problem area, to identify the particular aspect of the problem to be investigated and to propose a solution to the problem, for subsequent consideration in this Thesis, as follows:

- 1.1 The Capitalisation Of Income Method Of Valuation
- 1.2 Current Methods Of Capitalisation Rate Selection
- 1.3 Issues Arising From The Current Method Of Capitalisation Rate Selection
- 1.4 Thesis Problem And Approach To Solution
- 1.5 Outline Of Thesis
- 1.6 Summary, Areas For Further Research And Conclusions

Accordingly, the review of issues concerning the capitalisation of income method of valuation commences in the following Section which outlines the method and its operation.

1.1 THE CAPITALISATION OF INCOME METHOD OF VALUATION

It is proposed to approach the investigation of the capitalisation of income method of valuation principally through a brief literature review of the standard western teaching texts, supplemented by articles from professional journals, which is intended to be indicative rather than exhaustive.

Qualitative definitions of the capitalisation of income method of valuation abound, with Baum and Mackmin (1979) offering:

“the process of converting future income flows to present value capital sums”
(page 50)

which Millington (1979) notes assumes a relationship between income flows and capital value. Ratcliff (1961) in Pyhrr et al (1989) places the definition within a wider, relative investment context:

“Investment value is the present worth to the investor of expected future net returns capitalised at a rate that reflects the perceived investment characteristics of the property” (page 63)

whilst Rost and Collins (1990) suggest a more specific definition:

“ ... the multiplication of the actual or the anticipated annual net or annual gross rental returns from a subject property by an appropriate factor” (page 109)

with such “appropriate factor” or capitalisation rate being the central issue for investigation within this Thesis.

Following qualitative definitions, a range of quantitative definitions of differing levels of sophistication are found within the literature, ranging from:

Net Income x Years Purchase = Capital Value (Britton et al (1980) and Richmond (1975))

to:

$$V = a / y \quad \text{Equation 1.1}$$

where: V = capital value

a = current net income

y = all risks yield (or capitalisation rate) (Fraser (1984))

with Pyhrr et al (1989) and Baum and Mackmin (1979) offering similar expressions.

For a rack rented, prime, CBD office investment property with an annual net income of \$5 million, an assessment of the capital value using the capitalisation of income method would be undertaken as follows, if the appropriate capitalisation rate is assumed to be 8%:

$$V = \$5,000,000 / 0.08 \quad \text{or} \quad V = \$62,500,000$$

Accordingly, the value of the aforementioned rack rented, prime, CBD office investment property would be determined to be \$62.50 million through operation of the capitalisation of income method of valuation.

Having outlined the basic framework of the capitalisation of income method, it is proposed to consider various, relevant aspects, as follows:

- 1.1.1 Principal Elements Of The Capitalisation Of Income Method Of Valuation
- 1.1.2 Concepts Underlying The Capitalisation Of Income Method Of Valuation
- 1.1.3 The Capitalisation Of Income Method Of Valuation As A Model
- 1.1.4 The Capitalisation Of Income Method Of Valuation As A Process
- 1.1.5 Changes To The Capitalisation Of Income Method Of Valuation Over Time
- 1.1.6 Summary - The Capitalisation Of Income Method Of Valuation

Each of the principal elements of the capitalisation of income method of valuation will, therefore be briefly considered in the following Section.

1.1.1 Principal Elements Of The Capitalisation Of Income Method Of Valuation

The definitions of the capitalisation of income method of valuation, noted above, focus attention on the two principal variables being current net rent (which comprises gross income less expenses) and the capitalisation rate, with various authors (see, for example, Baum and Mackmin (1979)) commenting that the assessment of each has a significant effect on the final estimate of value.

The quantification of net income through the assessment of both passing and market levels of gross income and the identification and quantification of expenses and other deductions receives extensive attention by many authors (see, for example, the lengthy discussions in Baum and Crosby (1988), Brown (1992), Cohen (1979), Shepherd (1935), Hughes (1952), Thomas (1964), Rost and Collins (1990), Richmond (1975), Britton et al (1980), Baum and Mackmin (1979) and Cairns (1985)), with Millington (1979) validly noting that:

“The actual assessment of rent is an important process, as any discrepancy at this stage will be multiplied many times once a multiplier is used to convert the rent to capital value.” (page 90)

The considerable and detailed attention attributed to the assessment of the net income stream, for use in the capitalisation of income method of valuation, is starkly contrasted by the level of attention focussed on the assessment of the capitalisation rate within the literature (as will be considered further, below) which is surprising given the relativity of impact on value of changes in each.

The selection of the appropriate capitalisation rate for use within the capitalisation of income method of valuation is a critical input which will be considered, in detail, in Section 1.2 below.

1.1.2 Concepts Underlying The Capitalisation Of Income Method Of Valuation

The literature reviewed identified a range of fundamental underlying assumptions and requisite conditions for the operation of the capitalisation of income method of valuation for rack rented investment property, which may be summarised as follows¹:

- that all cash flows occur at one time (Pyhrr et al (1989)) and that the approach ignores time (Brown (1992));
- that net income is adopted before depreciation, debt service, income taxes (Pyhrr et al (1989)) and capital gains tax (Brown (1992));
- that income is often a "stabilised amount" derived from an assumption of declining or increasing income over the projection period (Pyhrr et al (1989)) without explicit regard for vacancies (Brown (1992));
- that the initial income grows at a constant annual rate being, effectively, an average of all annual growth rates in income in perpetuity (Brown (1991));
- that an inflation expectation and an expectation of the term structure of interest rates are implicitly incorporated (Brown (1991));
- that a risk premium expectation, which will vary from property to property, is implicitly incorporated (Brown (1991));
- that the projection period is for the full useful life of the improvements, with no consideration of the ownership life cycle (Pyhrr et al (1989)) or in perpetuity (Brown (1992));
- that capital is recaptured from income, except for land value, which is assumed to be constant. No explicit consideration is given to resale price changes or transaction costs (Pyhrr et al (1989)) or to appreciation or depreciation in value (Brown (1992));
- that ample market data is available which is easily obtainable and capable of meaningful comparison to the subject property (Brown (1992)) with an active property market (Baum and Mackmin (1979)) and adequate records of information collected (Richmond (1975) and Britton et al (1980));
- that the analysis of transactions is rigorous, comprehensive and consistent (Baum and Mackmin (1979));
- that income is assumed to be received at the end of the period, though analysed evidence is normally based upon income received in the year preceding or in the year of sale (Brown (1992));

¹ It should be noted that each reference to Pyhrr et al (1989) is attributed by those authors to Graaskamp (1972).

- that there is a fundamental, underlying premise of stability (Brown (1992)).

Furthermore, Millington (1985) notes that the following conditions should exist for a perfectly competitive market but are absent for the property market:

- buyers and sellers must have precise knowledge of prices being paid elsewhere;
- the product in the market must be homogenous;
- there must be perfect mobility in the market with both participants and product able to move easily; and
- there must be so many buyers and sellers in the market that no one individual can influence market price.

Such imperfection is further compounded by other factors which also influence the supply/demand for investment property, including changes in:

- the cost of borrowing;
- the availability of credit;
- tax on property; and
- consumer preferences,

which contribute to further fundamental constraints on the effective operation of the capitalisation of income method of valuation (Millington (1985)).

There are, therefore, a range of fundamental underlying assumptions and requisite conditions for the operation of the capitalisation of income method of valuation, for rack rented investment property, which confer a significant illogicality on the method that is compounded by the characteristics of the property market. Regard to such limitations is contended to be relevant when considering the issues arising from the determination process, within the adjustment of the capitalisation rate, below.

1.1.3 The Capitalisation Of Income Method Of Valuation As A Model

The capitalisation of income method, as expressed in Equation 1.1, is essentially one alternative form of valuation model with Elton and Gruber (1987) offering the following definition of such:

“A valuation model can be considered as the black box that converts forecasts of fundamental data about companies and/or the economy into forecasts or evaluation of market price.” (page 423)

The reference to “market price” rather than investment worth, within this definition, is contended to be of particular significance in the context of the capitalisation of income method of valuation as a model.

The distinction between market pricing and appraisal of worth comprises an important area for clarification, prior to a consideration of the capitalisation of income method as a process (Section 1.1.4) and of current methods of capitalisation rate selection (Section 1.2), as it comprises the foundation for a conceptual framework within which the prevalent comparable based determination of capitalisation rates may be considered and distinguished from preferable determination based on logical and rational economic principles.

Baum and Mackmin (1979) note that market value as determined by a valuer is an expression of that price which could be expected under certain, specified market conditions, being the most probable selling price derived from numerous parties with full knowledge who are behaving rationally in normal market conditions. Accordingly, price may only equate with value in perfect market conditions.

Baum and Crosby (1988) distinguish between valuation (exchange value) and analysis (appraisal of worth) as follows:

- valuation is to fix a price for, predict the most likely selling price for or estimate the open market value of an income producing property, being property market based and comprising the conventional UK valuation or US appraisal process; and
- analysis is the estimation of worth to an individual, given that individuals subjective estimates of relevant factors, which may be expressed as a price or as a rate of return and which may not necessarily be property market based,

with extensive discussion found in Mainly For Students (1990), O'Brien (1992), Crosby (1990), Crosby (1991) and Crosby (1992).

On the premise of a rational vendor accepting the highest price offered, exchange value and an appraisal of worth could be expected to both provide the same result. However, the authors comment:

“We see property investment appraisal in crisis. The initial manifestation of this crisis is the apparent divergence of market value and investment worth.”

(page xiii)

The role of the valuation profession is premised on achieving consistency between the prediction of the most likely selling price and the price achieved (the extent of permissible inconsistency being considered further in Section 1.2.4, below), such that any divergence of significance could potentially undermine the role of the valuation profession (Lay (1988)).

To provide the conceptual framework within which to place current methods for the selection of the capitalisation rate by valuers, it is proposed to briefly consider the distinction between analysis and valuation observed by the author in practice.

Analysis (being the estimation of worth to an individual) is entirely dependent upon that individuals particular requirements regarding return, risk, taxation, financing, alternative investment opportunities, economic conditions and so forth. The result of that individuals assessment of each relevant requirement will be a worth or rate of return which, assuming rational conditions, would be the purchase price if it exceeded other bids offered. Hence, the purchaser is impounding a potentially wide range of information, both historic, current and through expectations, into the price paid for a particular investment property. Use of the capitalisation rate may be one approach to impounding such information though the use of a discounted cash flow approach by institutional investors is noted by Heselgrave (1983) and generally observed to be more prevalent in practice.

Accordingly, that capitalisation rate which may be deduced by analysing the successful purchase price represents an expression of the outcome of a deterministic approach by the purchaser based on a rational interpretation of logical criteria. This may result in a price level which differs from that previously prevailing.

Whilst current methods of capitalisation rate selection by valuers in the valuation process are considered in detail in Section 1.2 (below), the concepts of analysing comparable sales transactions and adjusting the capitalisation rate evidence deduced comprise the fundamental parts of the process.

The capitalisation rate deduced, as noted above, may comprise a complex amalgam resulting from a purchasers deterministic approach at that point in time based on a rational interpretation of logical criteria which may be historic, current time or expectational. The valuer may be likely to be unaware of the nature or significance of such historic, current time or expectational logical criteria and so may have only the product of one assessment of worth at one historic point in time to compare with those deduced

from other comparable sales transactions. Thus, the valuer is basing a current time valuation principally upon historic price levels.

Accordingly, the capitalisation rate selected by the valuer is a function of his interpretation of historic evidence of the market pricing process which may lack a relativity to not only those criteria considered by the investor at that time but also the extent to which investors may consider current time criteria to differ. This may result in valuations based on what prices have been rather than what prices are or should be.

Appraisals of worth lead to the identification of the capitalisation rate by a deterministic approach based on a rational interpretation of logical criteria.

Thus, to achieve greater potential consistency between the prediction of the most likely selling price and the price achieved, it is contended that greater regard within the valuation or price fixing process to the analysis or estimation of worth process may be beneficial and contribute to a reduction or elimination of divergence. Such regard may include the identification and consideration of those logical criteria interpreted by the investor in estimating worth for rational consideration by the valuer through a deterministic approach to the identification of the capitalisation rate.

Baum and Crosby (1988) comment that it is generally concluded that the conventional method of valuing investment properties is irrational and illogical and advocate the adoption of rational techniques:

“Rational analysis does not necessarily imply a questioning of market price, but instead allows changes in observed prices to be reflected in changes in meaningful variables, permitting the accurate revaluation of other assets.”
(page 6)

It is proposed, hereunder, to endeavour to identify those “meaningful variables” for the estimation of worth and to seek to combine these in a deterministic approach which is based on a rational interpretation of logical criteria to identify the capitalisation rate and so contribute a refining development to the currently prevalent capitalisation of income method of valuation, as a step towards the reconciliation of market pricing and appraisal of worth.

Such an approach may then provide a foundation for further research into the reduction or elimination of reliance on the interpretation of comparable sales in a transition from refined market pricing to wholly appraisal of worth based approaches, offering not only greater potential clarity but also greater potential synergy between property and other asset classes. As Baum and Crosby (1988) comment:

“The clear need is for valuers to adopt a market valuation model which lends itself to explicit analysis.

Such a model should not be totally reliant on available comparable evidence, and should function when no comparables are available.

The model should be more explicit than the conventional model which hides important issues such as growth potential and risk factors within a single capitalisation rate.”

“This approach would need to be market based but would be more specific regarding perceptions of investors.” (page 94)

It is interesting that Elton and Gruber (1987) also provide some guidance as to the nature of “meaningful variables” in their definition of a valuation model, above. The identification of both subject specific and general economic data as fundamental inputs to a model offers an interesting starting point.

Furthermore, the authors note that a model comprises the formalisation of relationships expected to exist between corporate and economic factors and the markets valuation of these factors, with no valuation model able to perform well if the forecasts upon which it is based are of a poor quality.

Brown (1991) also notes that the role of valuation models is to define economic relationships between relevant variables in order to arrive at values which would establish a market in equilibrium. It may then be determined if properties offered for sale are under or overpriced relative to that market equilibrium value.

The potential complexity of such relationships between relevant variables is eluded to by Elton and Gruber (1987), above, in their description of a valuation model as a “black box” which Allen (1990) defines as a “complex piece of equipment, ... with contents that are mysterious to the user.”

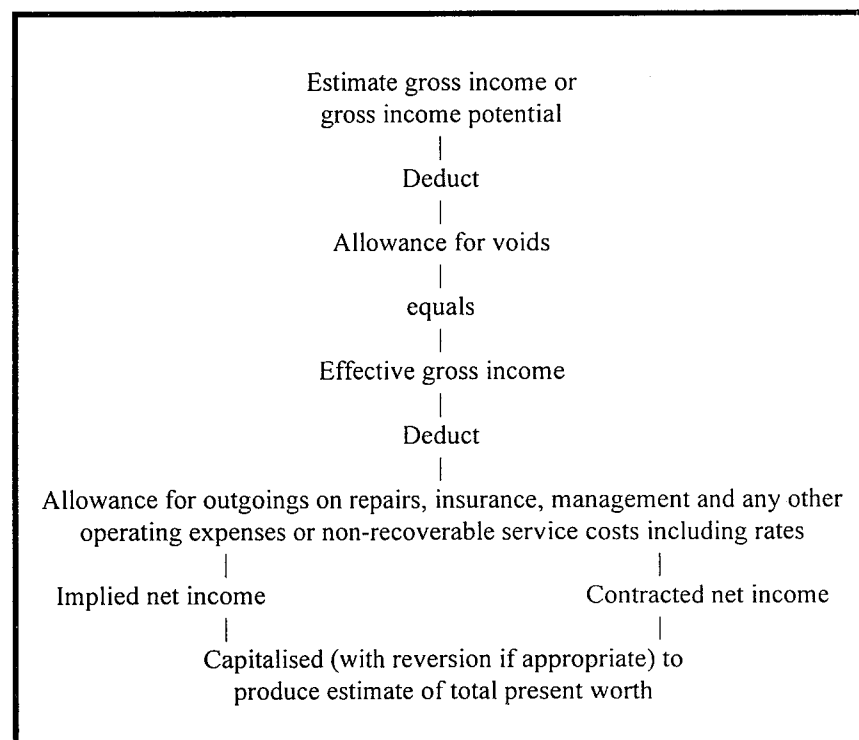
The capitalisation of income method of valuation for investment property described in Equation 1.1 is, therefore, contended to be a startlingly simplistic and apparently inadequate expression for such a potentially complex set of relationships.

1.1.4 The Capitalisation Of Income Method Of Valuation As A Process

In order to apply the capitalisation of income method as a valuation model, various authors consider the basis from which the application of the method should be approached, but then rapidly move on to outline the process which should be undertaken by the practising valuer.

Amongst the references to the basis from which the application of the method should be approached, several authors cite regard to general investment issues as relevant including the return which an investor may seek from such a property (Richmond (1975)) and the return which an investor may require to adequately reflect the risk involved and to reflect the quality of the property in comparison with other property investments and other investments generally (Millington (1979)).

A more specific approach is advocated in Baum and Mackmin (1979), where the authors list a range of data as necessary for collection to provide the valuer with the necessary "precise knowledge of the market and the property" (page 53) in order to effectively implement the process outlined in Table 1.1.



The Valuation Process
 (Source: Baum and Mackmin (1979) (page 57))
 Table 1.1

A significant number of issues, relevant to the valuation process, are noted within the literature as capable of being addressed by either adjustments to the income stream prior to capitalising or by capital deductions. Such issues include shortfalls in recovery of operating expenses, vacancies (both existing and potential), non-standard lease clauses, refurbishment costs, leasing fees, incentives and so forth. By explicit regard within the assessment of the income stream or by capital deduction, consideration of such issues within the determination of the capitalisation rate may be obviated.

Accordingly, the process potentially resolves to the assessment of the net income stream and the selection of the capitalisation rate as inputs and to the mathematical manipulation of such inputs to derive, allegedly, value. Such mathematical manipulation and the dominant focus of the capitalisation of income method on comparable sales (which will be considered further, in detail, in Section 1.2.2 below) has been criticised by numerous authors including Baum and Crosby (1988) who comment that the:

“ ... student or practitioner is taught to ignore the concepts and wider implications of yield construction or choice and to reduce it to a comparison with similar properties” (page 67)

and further quote Whites (1977) well known condemnation of the focus on mechanics:

“Concepts of value are not seen to be important, methods of valuation are reduced to ‘cook book’ routines, and arithmetical anomalies are accommodated as practical approximations.”

In its current form, the optimal operation of the capitalisation of income method is dependent upon the optimal completion of the process which provides the two principal inputs to the model. This, in turn, is dependent upon the practitioner who undertakes the process as noted by Baum and Mackmin (1979):

“Any assessment of present worth or market value can only be as good as the data input allows and that factor is dependent upon the education, skill and experience of the valuer.” (page 53)

Thus, as the authors note, the personal characteristics of the practitioner undertaking the process, which provides the inputs to the model, may have a significant effect on the veracity of the result.

It is contended, therefore, that the valuation of income producing property by the capitalisation of income method provides a single, holistic output from a sequential exercise which is dependent for its

efficacy upon the validity of the three principal components, being the practitioner, the process and the model itself.

1.1.5 Changes To The Capitalisation Of Income Method Of Valuation Over Time

It is worthwhile briefly considering the evolution of the capitalisation of income method during this century, to provide an appreciation of the role of the capitalisation rate within the context of the method. As will be considered in Section 1.1.5.1, below, from the turn of the century to World War II the method changed little with Colliver (1946) whimsically noting:

“It is thought that in some mystical way there has been since earliest recorded historical times some affinity between rent and capital value, but it seems impossible to find an illustration in these early times.” (page 57)

Mainly For Students (1990) notes that the use of the capitalisation method can be traced back to the end of the last century with Baum and Crosby (1988) confirming:

“For the first 60 years of this century, the use of the investment method of valuation for freehold and leasehold interests has seen minor amendments in application. These amendments have started from a theoretical discussion in textbooks leading relatively slowly to change in practice. The contention that no changes have taken place is incorrect but the extent and effect of these changes is small.

The changes which did take place were based on sound conceptual arguments at the time, put forward innumerable times prior to a slow acceptance.” (page 62)

The survival of the method has not, however, been without periodic challenges during the course of the century including during the Great Depression:

“Perhaps no more difficult time has existed than the present in which to declare, without fear of contradiction, and even within comparatively wide limits, the interest basis upon which property let at rack rents is likely to change hands” (Shepherd (1935) - originally noted in 1933, page 296)

after the Second World War:

“Actually the present times are quite impropitious for inaugurating the practical application of the capitalisation of rent theory, and, in fact, those valuers who have proved the theory to be workable in relatively normal times, are finding the utmost difficulty in the present chaotic conditions of the building trade, rents and the property market” (Colliver (1946) page 58)

and during a cyclical boom in the Australian property market:

“The valuers task in this age and generation is made complex because of the many influences at work in the real estate market to-day affecting demand and each in its own way creating a special reaction, sometimes reasonable and at other times unreasonable, on the property market” (Litchfield (1958), page 115)

formalised, amplified and detailed, more recently within the controversial Greenwell Report of 1976 and Trott Report of 1986 (Greenwell (1976) and Trott (1986)) which will be considered further in Section 1.1.5.2, below.

Interestingly and indicative of community attitudes towards the valuation of income producing property, Glover (1985) notes that it was not until the 1960s that the mere provision of an opinion was usurped by the requirement for a more scientific approach and further explanation:

“ ... the voice of experience always sounded reliable in financial circles. A valuer need only quote a blameless professional career and an informed opinion to be believed.” (page 139)

The capitalisation of income method was, therefore, initially developed in an era when investment approaches were less sophisticated, property markets less complex and the regulatory environment less comprehensive than today.

A detailed review of that literature concerning the evolution of the capitalisation of income method of valuation during the twentieth century is contained in Excursus I, annexed hereto, which draws principally upon the seminal, comprehensive and incisive work of Crosby (1985) and that of Baum and Crosby (1988). The following seeks to briefly summarise the two key development periods proposed within Excursus I, annexed hereto, within which the contributions of the various respective authors are individually credited, as follows:

1.1.5.1 Pre-Reverse Yield Gap

1.1.5.2 Post Reverse Yield Gap

each of which will be briefly considered hereunder.

1.1.5.1 Pre-Reverse Yield Gap

Spanning from the advent of the twentieth century to approximately 1960, this period may be divided into before and after World War II.

Before World War II, both the property market and the capitalisation of income method of valuation appear to have been both clear and simple. Investment property transacted at a slight margin over consols to reflect a risk premium and the absence (or, as is argued, very limited level) of growth permitting the discount rate and the capitalisation rate to fulfil the same function. Whilst the term and reversion approach using two rates was advocated by the theorists, it does not appear to have been adopted by the practitioners who are found to use only one rate.

With the advent of town and country planning after World War II, a significant constraint was placed upon the historically free supply and demand equation for property. Accordingly, it is contended, significant rental growth was manifest from 1945 to 1960 contributing to the property market starting to become more complicated. As noted in Excursus I, annexed hereto, the market responded to such rental growth by the inclusion of rent reviews which became progressively closer together and valuers started to adopt two rates within the term and reversion valuation structure which, it is contended, may have been a response to the term income becoming demonstrably smaller and so more secure than the much higher and riskier growth influenced reversionary income.

However, it is also arguable that the simple investment method of valuation process was insufficiently sophisticated to cope with the emergence of rental growth (manifest both as growing income streams giving larger reversionary components and greater risk attaching to the likelihood of receiving such larger reversionary components) and that a simple response by practitioners to cope with such complex issues as these as well as differing review periods and differing security of tenant covenants in

comparable evidence may have been a propensity to make a simple, slight adjustment in the capitalisation rate for the subject compared to the evidence.

As larger reversionary rental streams realisable earlier became the principal reflection of growth and the use of the two rate convention the principal reflection of risk, the conceptual difference between the capitalisation rate and the discount rate increased and their inter-changeability within the valuation process became more blurred. Thus, by the late 1950s, the investment method of valuation was beginning to operate on the basis of its own conventions rather than being the simple discounting approach with a direct nexus to other asset classes that prevailed at the turn of the century.

The reverse yield gap, where the initial yield on UK equities was lower than that of UK gilts, is suggested by Ratcliffe (1978) to have been first manifest briefly towards the end of 1960 following continued inflation in the UK during the 1950s. For property, Ratcliffe (1978) notes a reverse yield gap by the late 1960s of 1%-3%, generally, which widened to 3%-8% by the late 1970s as property was perceived to possess growth prospects.

This is contended to have had a profound significance for the theoretical basis of the investment method of valuation. Prior to the reverse yield gap, a premium was added to the bond rate for risk such that the capitalisation rate exceeded the bond rate. Post-reverse yield gap, the bond rate exceeded the capitalisation rate as a major change in the pricing of capital market asset classes occurred to reflect their respective growth characteristics. Thus, by 1960, the majority of investors were prepared to pay less for certain property income than they were for growth potential.

1.1.5.2 Post Reverse Yield Gap

In the period immediately following the advent of the reverse yield gap, the property market responded with changes in rents, lease terms and yields. However, as the authors observe in Excursus I, annexed hereto, the impetus of rental increases conflicted with the speed at which rent review frequency changes could be implemented through expiring leases such that ability to participate in rental growth potential was a major factor in the upward shift in yields in the mid to late 1960s.

It is contended that, during the 1970s, as rent review periods declined, rentals increased and capital market participants attributed new levels of value to property assets in the market, the capitalisation rate and differential adopted within the term and reversion valuation approach took on different roles.

The token allowance for risk manifest in the two rate convention was maintained, but the capitalisation rate also became a medium to recognise both income and capital growth potential, together with the

reversionary income stream. The complexity of the review pattern overlay obfuscated the price-income relationship bestowing a further, new role on the relating multiplier.

By insisting upon a reliance on capitalisation rates devalued from comparable sale transactions, valuers effectively had only one medium through which to reflect both risk and growth, its importance albeit slightly diluted by the maintenance of the two rate convention and the assessment of the reversionary income stream.

Thus, it is contended, the capitalisation rate and the discount rate ceased totally to be inter-changeable and valuers failed to appreciate the capitalisation rate as the difference between the discount rate and the growth rate. Accordingly, valuers had to find some way of reflecting growth and risk in the valuation process. The only mechanism available to valuers to do this was the further subjective adjustment of the capitalisation rate.

It is contended that a combination of compounding change and unsophisticated practitioners (lacking both access to computing power and an understanding of the methodologies by which to treat growth explicitly (French (1991))) lead to the acceptability of unsubstantiable adjustments to the capitalisation rate.

As noted in Excursus 1, annexed hereto, during the 1970s a variety of factors impacted upon investment property including a rise in inflation, growth in values, an increase in the involvement of professional investors and managers in property, a greater availability of information, analytical resources and skills amongst the new wave investors and their non-property industry advisers and a growing interest in and criticism of valuation methods by such parties.

As the simplicity of valuation methods relative to the complexity of the market became more noticeable, there was a growing view by the users of property valuations that the traditional investment method of valuation was inadequate. One of the most significant criticisms of valuation methodology came not from the property profession but from the stockbrokers, Greenwell & Co. The Greenwell Report (Greenwell & Co (1976)) contained a critique of property investment appraisals and found them to be lacking, a display of "remarkable temerity" in the view of the valuation profession (Baum and Crosby (1988)), with Greenwells promoting equated yield and cash flow methodologies as preferable alternatives.

Baum and Crosby (1988) attribute the Greenwell Report with being a catalyst for the RICS sponsored major investigation into property appraisal methods (Trott (1980) and Trott (1986)) which repeated the appeal for the adoption of cash flow based and equated yield valuation techniques (Baum and Crosby (1988)).

However, rather than enthusiastically embrace such recommendations, practitioners and academics devoted much of the period from the mid 1970s to the late 1980s defending, refining and developing “techniques and applications which (had) lost a logical base” (Baum and Crosby (1988)), as summarised below.

Defending:

Apart from the significant volume of debate concerning mystique, judgement, professional experience and other qualitative inputs, the valuation profession offered little in the defence of its methods.

Britton et al (1980) note that scrutiny of the investment method of valuation itself focused principally on the valuation lore or conventions concerning rent payment frequency, in arrears/in advance, taxation and the role of inflation as well as upon the nature and function of the yield. The early and seminal theses of Greaves (1972) and Wood (1972) addressed such issues in considerable detail and raised fundamental questions concerning same.

Such valuation lore was perpetuated by the manner in which valuers are educated and trained as “(e)ach generation of real estate analysts educates its own successor” contributing to “intellectual inbreeding” and the use of “...methods and techniques which represent the state of the art in other fields a generation ago.” (Greer (1979) in Baum and Crosby (1988))

Thus, valuation lore became well established, entrenched and perpetuated through each generation of students. The concept of fundamental change was simply not on the practitioners agenda for so long as existing methods could be protected by the defences of mystique and judgement.

Addressing complex issues through generally adopted conventions reduced the need to analytically focus on the relationship of the capitalisation rate to relevant determining factors or influences, further enhancing its artificiality and isolation as well as diminishing its relevance and applicability as an intra-asset class measure of return.

Refining:

The literature reviewed in Excursus 1, annexed hereto, is found to devote extensive attention to refining existing, alternative methods such as the Layer/Hardcore Method, Equivalent Yield Method, the Rational Valuation Model, Ellwood Model, Equity Method With Sinking Fund and Equity Method Without Sinking Fund, reflecting the momentum within the valuation profession and academia to amend existing methods used in practice to better suit rather than develop new methods or review the theoretical principles underlying same.

Significantly, none of the refined capitalisation methods appear to have enjoyed enduring usage by practitioners. The debate within the literature is heavy on mathematics and formulae but light on the role of the underlying economic principles. Whilst the various methods do not, *prima facie*, assist the average practitioner to better understand and apply the capitalisation rate within the investment method, they do illustrate the relevance of the discount rate/growth/risk/capitalisation rate relationship, albeit submerged beneath the user-unfriendly web of apparently complex equations.

Significantly, the simultaneous development and promotion of discounted cash flow methodologies provided the practitioner with an alternative approach based on the same discount/growth/risk/capitalisation rate relationship but in a more user-friendly format.

Developing:

Such development of valuation methodology as there was found to be, focussed on equated yield and cash flow valuation approaches, reflecting the recommendations of both Greenwell (1976) and Trott (1986), which is ironic given that the return to cash flow methodologies and the use of the discount rate in principle is effectively a return to the methodology prevailing at the turn of the century. Furthermore, the literature clearly indicates a more significant emphasis on defending and refining variations on existing methods rather than on developing alternative methods.

Effectively, the capitalisation rate had lost its economic rationale, so contributing to the economic invalidity of both the capitalisation of income model and various attempts to revive the model through mathematical manipulation. As Brown (1991) notes, a mathematically correct model can be derived if the economic principles are correctly specified, but it does not follow that the reverse is true.

Whilst the above review of defending, refining and developing methods is both lengthy and diversionary, it serves to draw attention to the same effect of the fifteen year post-Greenwell/Trott era on the evolution of valuation methodologies. It would appear that the persistent proposition of new formulae and extensive debate on technical deficiencies, which then ensued each time, neither contributed to a better understanding of the role of the capitalisation rate within the capitalisation process nor increased the sophistication of application for the practitioner.

In Section 1.1.3 it was contended that the capitalisation rate currently being selected by the valuer is a function of his interpretation of the historic evidence of the market pricing process that may lack a relativity to those criteria considered by the investor at that time and which may result in valuations based on what prices have been rather than what prices are or should be. This approach to

capitalisation rate selection was contrasted to the deterministic approach to selection, based on a rational interpretation of logical criteria, adopted by the investor in an appraisal of worth.

Conversely, the evolution of capitalisation rate selection in the USA exhibited a greater emphasis on the rational interpretation of logical criteria by endeavouring to incorporate factors considered by the investor in an appraisal of worth.

The US approach to capitalisation rate formulation is extensively addressed within the literature (see, for example, McCoy (1990)), particularly within the "Appraisal Journal", the "Real Estate Appraiser and Analyst" and "Real Estate Issues", to which there are over eighty references in the Bibliography attached hereto. For the purpose of this Thesis, however, it is proposed to briefly consider three approaches comprising the Band Of Investment Method, the Ellwood Method and the equity method without sinking fund.

The Band Of Investment Method combines the cost of debt and required return on equity to derive an overall capitalisation rate for property investments and is recorded in the work of numerous US authors (see, for example, Peterson (1981)). The concept is developed farthest in the Ellwood Method (considered below) but is simply expressed by Gibbons (1980) as the weighted average of the annual mortgage requirement per dollar of mortgage and an equity dividend rate, such as:

75% mortgage	@	0.07	=	0.0525	
25% equity	@	0.08	=	<u>0.0200</u>	
Overall capitalisation rate			=	0.0725	or 7.25%

If it is assumed that all market participants are using 75% borrowed funds, then either the equity rate can be found from a known overall capitalisation rate or vice-versa. Thus, the overall capitalisation rate from comparable sales can be devalued further than just a single number which contributes to an appreciation of capitalisation rate construction from an alternative basis to that found in the UK and Australian literature. However, the method merely replaces the single, overall capitalisation rate with the equity rate of return as the critical, all embracing factor to be determined. Whilst this might be easily selected by investors, identification may be more problematical for the valuer. Three out of the four variables are, however, capable of easy quantification in the absence of comparable sales which, if the equity return were capable of consistently accurate assessment, would make the method potentially less variable than traditional capitalisation rate selection methods.

Hanford (1976) considers an example with a primary mortgage, secondary mortgage and equity component, which suggests that all market participants may not adopt the same funding structure. This highlights a fundamental problem with the Band Of Investment Method as it is founded, for consistency

in application, on all investors using the same mortgage structure. However, even the assumption of a specific mortgage structure, borrowing rate and equity rate may not provide the optimal approach for the valuation of a property. If the mortgage structure or borrowing rate change, the value of the property would change under the Band Of Investment Method, but this may not actually occur in the market where the value may remain the same with the equity return changing in the short term. If the capitalisation rate for a property changes over time with the borrowing rate and mortgage structure remaining constant, then the only variable that will change to reflect all factors is the equity rate of return.

A variant on the above Band Of Investment Method is considered by Sanders and Sirmans (1980), which comprises a combination of the equity dividend rate and a mortgage constant. The authors investigate both Band Of Investment Methods and reconcile them through algebraic manipulation to the Ellwood Method, noting that considerable confusion results from the various measures of equity return and the treatment and computation of the differing components of the capitalisation rate.

Thus the Band Of Investment Method merely parallels the capitalisation rate with the equity rate as a composite expression or multiplier for determination, on the assumption of given and constant borrowing terms. Growth, risk and every other facet of the property investment is expressed within either the equity rate or capitalisation rate. Effectively, the equity rate is merely an expression of the capitalisation rate after allowance for debt and vice-versa such that those problems inherent in the selection of the capitalisation rate may be equally applicable to the equity rate.

It is contended that the Band Of Investment Method provides an analytical tool to derive the expected equity return from an investment for a series of given funding parameters and a given value but does not provide a method of valuation - unless every market participant adopts an identical funding approach, which may be unlikely to be the case in practice.

Other shortcomings of the Band Of Investment Method for American appraisers, identified within the literature, include the inability of the method to account for either the return of capital (Smith (1986)) or the appreciation / depreciation in the value of the investment. These limitations were addressed in American valuation theory and practice by the development of the better known and much more widely used Ellwood Method.

Proposed by Ellwood (1957) (reprinted as Ellwood (1959) and Ellwood (1977)) to reflect the fundamental change in the US market from being characterised by the pure equity investor ("cash and carry" market) to commonly featuring the debt-equity investor ("instalment market"), the method sought to replicate the then markets use of a combination of mortgage debt funds and equity funds in order to determine the return or overall capitalisation rate of a given property investment under certain

specified assumptions. This provision formed the foundation for the Ellwood Method and marked a major turning point in US valuation theory. Significantly, subsequent developments of the model were the incorporation of J (with Fisher (1979) and Gibson (1986)) and G (Fisher (1979)) factors to facilitate the reflection of rental growth.

The incorporation of a debt variable fundamentally questions the use of the model as a generic valuation method (Gibbons (1978), Troxel (1975), Boykin and Hoesli (1990)). Mackmin (1979) notes that the use of floating rate mortgages which are redeemed prior to sale, the widespread use of equity funding only by institutions and the lack of interest in depreciation/return of capital concepts meant that the Ellwood Method was inappropriate for use in the UK and, accordingly, never adopted.

Despite this, Gettel (1978) proposes a mortgage/mortgage model to derive the overall capitalisation rate based solely on mortgage loan factors. Whilst the Gettel Model is simple, brief and removes the need for the subjective assessment of certain variables inherent in the Ellwood Method, it is totally divorced from property investment fundamentals and principally reliant on the structure of the mortgage backed lending market, with any changes in same translating directly and probably erroneously into purported value changes.

It is, however, interesting that the model adopts concepts of total return and growth explicitly. Gibson (1986) compares the Ellwood Method to a conventional discounted cash flow valuation and shows that, if tax is disregarded, the IRR from the discounted cash flow is equal to the equity yield rate of the Ellwood analysis if a J factor is used. Peterson (1981) also compares the two approaches, arguing that the discounted cash flow is inferior as it relies on presumptions about future events over a longer time frame which are, inherently, more speculative.

Interestingly, Peterson (1981) notes that the similarities of purpose of the two approaches confirm that Ellwood is effectively an algebraic predecessor of computer based cash flow methodologies. Despite the incorporation of debt, the economic relationship between the discount rate and growth rate remains central to and a significant feature of the Ellwood Method.

Furthermore, the selection of the capitalisation rate through a more deterministic approach based on the rational interpretation of logical criteria, which is manifest within the Ellwood Method, potentially more closely mirrors the investors approach to an appraisal of worth and the assessment of what prices should be.

A further alternative approach found within the American literature comprises the equity method without sinking fund, as promoted by Blackadar (1984, 1986, 1989).

Despite three major expositions on the model in the “Appraisal Journal”, Blackadar's Model does not appear to have become widely used. The incredible complexity of the underlying equation may have been prohibitive to the practitioner, though its incorporation of yield, inflation, lease review basis and depreciation in order to derive a multiplier (the inverse of which is the capitalisation rate) offers an interesting combination.

The Blackadar Model does, however, comprise a deterministic approach based on a rational interpretation of logical criteria, which may or may not mirror an investor's approach to an appraisal of worth and the assessment of what prices should be, though shrouded in an horrendously complex and practitioner unfriendly equation.

Whilst the US methods involve a greater range of objectively derived inputs, the reliance within the Band Of Investment and Ellwood Methods upon an assumed funding structure limits their usefulness as deterministic approaches to capitalisation rate selection. Any change in funding structures undermines the relevance of the result from the Ellwood Method with Gibbons (1980) noting its demise by 1977 as the result no longer matched the prices being paid for property in the market. Accordingly, whilst indicative of a deterministic model based on an investor's approach to an appraisal of worth, the US methods of capitalisation rate formulation do not include a sufficiently broad range of rational, logical criteria to achieve perpetual relevance.

1.1.5.3 Summary - Changes To The Capitalisation Of Income Method Of Valuation Over Time

Before World War II, both the property market and the capitalisation of income method were simple constructions and clearly understood. The increasing role of growth and risk in both the market and the method after World War II contributed to a more complex market and a change in the application of the capitalisation of income method. It is contended that World War II approximated that point at which the capitalisation of income method started to become inadequate for the market in which it was being applied and the propensity to make a simple, slight adjustment to the capitalisation rate became the mechanism to reflect that which could not otherwise be explicitly addressed.

Following the reverse yield gap, the increasingly significant role of growth, with complementary implications for the role of risk, rendered subjective adjustment of the capitalisation rate hopelessly inadequate. Despite this being acknowledged by Greenwell (1976) and Trott (1986), practitioners and academics chose to focus principally on defending and refining varieties of the capitalisation of income method rather than developing explicit, discount rate based, cash flow valuation methodologies.

It may be contended that, whilst the capitalisation of income method of valuation has evolved during the twentieth century, the role of the capitalisation rate has evolved to a far greater and more dramatic extent having gone from being a clear, simple discount rate application to becoming "a complex amalgam of the advantages and disadvantages of an investment" (Baum (1984)), dependent upon the judgement of the valuer, in only ninety years.

Having considered the evolution of the capitalisation rate and the capitalisation of income method of valuation in the UK, Australia and the USA over the twentieth century, the following briefly summarises this Section prior to an investigation of the current methods of capitalisation rate selection.

1.1.6 Summary - The Capitalisation Of Income Method Of Valuation

The above Section reviewed a range of issues concerning the capitalisation of income method of valuation, providing an explanation of the methods construction and the identification of its principal elements and its fundamental underlying assumptions.

The capitalisation of income method of valuation as a model was briefly considered and found to be reliant upon the execution of a process, so widely accepted that it was contended to have masked an appreciation of the context of the end product through an intensive focus on the way in which the end product is ascertained.

Furthermore, the capitalisation of income method of valuation was found to have evolved over the century through practice, rather than developing in accordance with finance, commerce and economic theory, with an approach of comparable based determination of capitalisation rates currently prevailing over the preferred approach based on logical and rational economic principles.

Whilst the capitalisation of income method was found to have evolved over the century, the role of the capitalisation rate was found to have changed dramatically from the simple and explicit to the complex and implicit.

Accordingly, the capitalisation rate was contended to be a key variable within the capitalisation of income method of valuation, the correct selection of which is vital to the integrity of the resulting valuation.

The following Section, therefore, seeks to ascertain the current method or methods of capitalisation rate selection adopted by valuers and to investigate issues arising therefrom.

1.2 CURRENT METHODS OF CAPITALISATION RATE SELECTION

Adopting a similar approach to that in Section 1.1, above, it is proposed to consider the investigation and identification of current methods of capitalisation rate selection principally through a brief literature review of the standard western teaching texts, supplemented by articles from professional journals, which is intended to be indicative rather than exhaustive.

As noted in Section 1.1.1, above, various authors have commented on the significance of the assessment of both the net income and the capitalisation rate for the final estimate of value. Whilst considerable attention has been given by authors to the assessment of net income, relatively little attention has been focussed on the selection of the capitalisation rate though it is generally acknowledged, by various authors, to be a complex and challenging task, with Baum and Mackmin (1979) commenting:

“The most difficult aspect in an income capitalisation exercise is the determination of the correct capitalisation rate” (page 55)

and Millington (1979) referring to the task as “the only problem the valuer faces” (page 69).

Though selection of the capitalisation rate is acknowledged to be difficult, the process by which the capitalisation rate, to be used in the valuation of a given prime, CBD office investment property, is to be selected was not found to be clearly enunciated within the literature reviewed. Ironically, more comprehensive qualitative descriptions of the selection of the capitalisation rate may be found in the Court reports of valuers professional negligence cases (see, for example, *Singer and Friedlander v. John D. Wood & Co*, (1977) 243 EG 212 or *Trade Credits Ltd v. Baillieu Knight Frank (NSW) Limited*, (1985) Aust. Torts Reports 80-757 [Court Decision No. 18]) than in the valuation texts.

Numerous authors (see, for example, Rost and Collins (1990) and Britton et al (1980)) devote many pages to the capitalisation of income method but little if anything to the selection of the capitalisation rate and do not afford the reader clear guidance as to how this should be undertaken. For example, Britton et al (1980) succinctly advise the valuer that he is to:

“... draw from market transactions the appropriate yield to apply.” (page 102)

This brief but comprehensive advice combines the two principal concepts identified from the literature concerning the selection of an appropriate capitalisation rate, being the use of market transactions or comparable sales evidence and the process of adjustment of that evidence for application in the valuation of the subject property.

The importance of reliance upon market transactions or comparable sales evidence is further reinforced by “Student” (1959):

“When Market Value is required the Rate of Capitalisation is best determined from analyses of sales, at or about the relevant date, of comparable properties” (page 158)

being echoed by Richmond (1975) and Thomas (1964) and including the important distinction between current time and previous period sales evidence.

The process of adjustment generally receives little attention in the literature with only the broadest general advice offered, as typified by Mainly For Students (1987A):

“If the subject property differs in any way, then the valuer endeavours to overcome the differences by adjusting the ARY in whole or partially in respect of a particular tranche of income. Such adjustments may well be superficial and largely meaningless but can, if misapplied, produce erroneous valuations.” (page 807)

As was noted within the consideration of the principal variables comprising the capitalisation of income method, the practitioner is suggested by the literature to have a significant role in the selection of the capitalisation rate which Cairns (1985) notes “can be deduced from market investigation by an experienced valuer.” (page 698).

Accordingly, the current method of capitalisation rate selection is contended to comprise the adjustment of capitalisation rate evidence, derived from the analysis of identified comparable sales transactions, to accord with the subject property being valued. The two principal components for consideration, therefore, are contended to be the analysis of identified comparable sales transactions to derive evidence and the adjustment of such capitalisation rate evidence, each of which will be considered further, below.

Given the fundamental acceptance of the role of comparable sales transactions within the current method of selecting the capitalisation rate, it may be contended that the ready availability of high quality comparable sales transaction evidence perpetuates the market pricing approach by providing integrity to the current method and precluding valuers from needing to adopt those rational and logical approaches considered in Section 1.1.3.

Accordingly, a trend towards an appraisal of worth approach with the identification of the capitalisation rate by a deterministic approach based on the rational interpretation of logical criteria may be deferred by the continuing ready availability of high quality comparable sales transaction evidence.

There is, however, a dearth of information concerning the availability and quality of comparable sales transaction evidence, both in Sydney itself and relative to other world markets, from which it may be determined whether Sydney is more or less focussed on market pricing approaches than other world cities.

To relate the Sydney CBD office market to those of other major world cities, empirical evidence was collected with the assistance of JLW Advisory. A short, simple questionnaire was constructed by the author for completion by the JLW Advisory office in the relevant city, based on their extensive data bases and local market knowledge. The respective questions and a summary of responses are included in Tables 1.2 to 1.5 with analytical commentary thereafter.

	Sydney	Melbourne	Auckland	London (City)	New York (Mid Town)
CBD Office Density ²	2.61x	1.97x	0.40x	1.17x	2.47x
Proportion of CBD Office Buildings:					
4+ Levels	95%	80%	90%	97%	99%
Occupied By Single Tenant	<10%	10%	<10%	15%	<5%
Owned By Institutions	55%	60%	N/A	55%	20%

Selected World Cities - Relative CBD Office Market Structures

Table 1.2

² CBD Office Density = Approximate Total Occupiable Area of CBD Office Accommodation/Approximate Site Area of CBD.

Relative to other selected world cities, Sydney has a high density of office development with a high proportion of buildings over four levels and a broadly comparable level of single tenant occupancy and institutional ownership.

Accordingly, the structure of the Sydney CBD is generally similar to those of the other world cities considered with no significant differences in the proportion of low rise/high rise development or single/multiple tenancy occupation.

In broad terms, therefore, the general principles of the findings of this Thesis may have some applicability to the other world markets cited.

Having considered the structure of the Sydney CBD office market relative to other, selected world cities, the questionnaire went on to investigate the relative volume of sales and leasing activity as an indicator of the relative volume of comparable evidence potentially available to valuers for analysis.

	Sydney	Melbourne	Auckland	London (City)	New York (Mid Town)
Volume of CBD Office Sales - 1995 - A\$m	475	175	106	1,198	1,086
Proportion of Total Sales ³	58%	21%	66%	48%	63%
CBD Office Leases:					
Typical Duration	6 yrs	8-10 yrs	9 yrs	15 yrs	10 yrs
Typical Rent Review Frequency	2 yrs	2 yrs	3 yrs	5 yrs	N/A
Type	Market and fixed rises	Fixed then market	Base rent and ratchet	Market	N/A

Selected World Cities - Relative Transactional Levels

Table 1.3

Though the volume of CBD office sales in Sydney was far in excess of that for Melbourne or Auckland, it was less than half that of London (City) and New York (Mid-Town). As a proportion of total sales, in Sydney, Auckland and New York (Mid-Town) the majority comprises office sales whilst in London (City) the proportion is almost half and in Melbourne it is less than one quarter.

³ Proportion Of Total Sales = Volume of CBD Office Sales - 1995 / Volume of Total Sales Activity in City - 1995.

Accordingly, the quantity of comparable investment sales transaction evidence available is potentially absolutely greatest in London (City), New York (Mid-Town) and Sydney though proportionately greatest in Auckland.

Interestingly, though not of direct relevance to this Thesis, the volume of comparable rental evidence may be greater in Sydney than in those other cities considered as the typical lease duration is shorter, the rent review frequency greater and the use of market rent reviews more prevalent.

Thus, though Sydney may have the relatively greatest quantity of potentially available comparable rental evidence and a similar proportion of available comparable investment sales transaction evidence to the other cities considered (except Melbourne), the absolute quantity of comparable investment sales transaction evidence potentially available to valuers in Sydney is far more than that of Auckland but less than that in London (City) and New York (Mid-Town).

Having considered the relative quantity of comparable investment sales transaction evidence potentially available to valuers for analysis, the questionnaire went on to investigate the relative quality and availability of such information to valuers.

	Sydney	Melbourne	Auckland	London (City)	New York (Mid Town)
Principal Source of Sales Data	Agency	Agency	Investors	Agency	Real estate and business publications
Centralised Data Bank Available					
From Public Sector	Yes	Yes	No	No	No
From Private Sector	Yes	Yes	No	No	No
Ease of Finding Sales Data ⁴	Varies	Varies	N/A	Usually easy	Usually easy
Quality/Completeness of Such Data ⁵	Poor	Adequate	N/A	Good	Good

Selected World Cities - Relative Quality And Availability Of Sales Data

Table 1.4

The differences found between the cities considered concerning the relative availability of information proved to be very interesting. Whilst Sydney, Melbourne and London (City) relied on agents for sales data, Auckland appeared to rely principally on investors and New York (Mid-Town) on published data. Though centralised data banks were available in Sydney and Melbourne, these were not evident in

⁴ Range Of Responses: Very Easy; Usually Easy; Varies; Usually Hard; Very Hard

⁵ Range Of Responses: Very Poor; Poor; Adequate; Good; Very Good

Auckland, London (City) or New York (Mid-Town) which contrasted with the ease of finding sales data. Unexpectedly, *prima facie*, sales data would appear easier to find and be of a better quality where there is no centralised data bank available.

Whilst the existence of a centralised data bank may have been expected to be beneficial, the quality of comparable investment sales data would appear to be inferior in Sydney to those other world cities considered.

Accordingly, though Sydney enjoys the highest volume of available comparable sales transaction evidence in Australasia, the quantity is modest compared to the northern hemisphere cities cited and the quality potentially poor in comparison to each of the other world cities considered.

In Section 1.2.4.2.2, below, it is noted that Baum and Crosby (1988) challenge the findings of quantitative analysis concerning the level of property market efficiency, arguing that, in larger UK practices, valuations are often carried out by a marketing agent such that the confluence of roles could be expected to contribute to a closer proximity between price and value. The questionnaire concluded by seeking information concerning this issue within the respective world markets sampled.

	Sydney	Melbourne	Auckland	London (City)	New York (Mid Town)
Likelihood Of Most Valuations Of CBD Office Properties Being Prepared By Somebody Who Also Undertakes Agency Activities.	Very unlikely	Very unlikely	Very likely	Very likely	Unlikely

Selected World Cities - Nature Of Valuing Party

Table 1.5

Whilst the results of the questionnaire potentially support the contention of Baum and Crosby (1988) for the UK, Auckland is the only other city apparently exhibiting this characteristic. In New York (Mid-Town), Melbourne and Sydney it would appear that valuations are conducted by parties not involved in agency activities such that neither the level of property market efficiency nor the proximity of price and value should be affected by a confluence of roles.

Whilst London (City) and New York (Mid-Town) enjoyed the availability of both high quantity and high quality comparable sales transaction evidence to facilitate the use of market pricing approaches for

determining capitalisation rates, Sydney appears to benefit from quantity but not from quality. Accordingly, whilst there may be a focus on market pricing approaches to the identification of the capitalisation rate in Sydney, due to the ready availability of comparable sales transaction evidence, the questionable quality of such evidence provides pressure to support a trend away from a comparable based approach to identification towards a deterministic approach based on first principles and the rational interpretation of logical criteria.

The Sydney valuation profession may be, therefore, more vulnerable to those problems which characterise market pricing approaches and whilst less likely to be amenable to a total conversion to deterministic approaches based on the rational interpretation of logical criteria to identify the capitalisation rate, are probably most in need of it.

Accordingly, it may be worthwhile to consider the development of a refined or deterministic market pricing approach, for use by valuers, as part of a transition to the appraisal of worth based approach preferred in that literature considered in Section 1.1.3.

Whilst acknowledged to be short and simple with findings that are, at best, indicative rather than conclusive, the questionnaire served to provide basic empirical evidence with which to identify some of the similarities and differences distinguishing the structure and operation of the CBD office markets in the respective world cities. As such, the questionnaire provides a wider focus than that found in the limited literature on financial and appraisal theory and practice considered.

As noted above, the current method of capitalisation rate selection is contended to comprise the adjustment of capitalisation rate evidence, derived from the analysis of identified comparable sales transactions, to accord with the subject property being valued. The two principal components for consideration, therefore, are contended to be the analysis of identified comparable sales transactions to derive evidence and the adjustment of such capitalisation rate evidence.

Whilst there is considerable attention in the literature to the issue of comparability within the valuation process generally, there is relatively little attention within the context of the capitalisation rate and similarly little attention to the adjustment process. Whilst not comprehensive, the following seeks to provide an indicative expression of the approach found within the literature to the two concepts of the use of market transactions or comparable evidence and the process of adjustment of that evidence for application in the valuation of the subject property.

For simplicity, the literature will be approached below as follows:

- 1.2.1 Analysis Of Comparable Evidence
- 1.2.2 Adjustment Of Comparable Evidence
- 1.2.3 Criticisms Of The Capitalisation Of Income Method Of Valuation
- 1.2.4 Extent Of And Defences Of Permissible Inconsistency

in order to ascertain how the selection process operates and the nature of the problems inherent therein.

1.2.1 Analysis Of Comparable Evidence

Britton et al (1980) summarise the process of analysing comparable sales evidence as follows:

“assess what is now or has recently been available in the market place and make comparisons between them” (page 11)

which, as Millington (1979) comments:

“Although this sounds simple and straightforward, there may be many pitfalls to trap the unwary.” (page 63)

Whilst Britton et al (1980) note that the principle of comparison underlies each of the five traditional methods of valuation, the capitalisation method is fundamentally dependent upon comparable sales evidence. The method is, therefore, dependent upon an active property market, easily obtainable details of transactions, rigorous, comprehensive and consistent analysis of such transactions (Baum and Mackmin (1979)) and adequate records of information collected (Richmond (1975), Britton et al (1980)), as considered above.

However, as Baum and Mackmin (1979) note, a full knowledge of all aspects of each transaction rarely exists in the market for investment property, with Millington (1979) lamenting:

“Unfortunately, in the real world actual market evidence is often most evident for its absence ...” (page 99)

The use of comparable sales presupposes that such sales were optimal and not impacted by unusual factors or influences. If, for some reason, a particular transaction was atypical, reliance upon it as

comparable evidence would possibly be erroneous and the effect thereof potentially perpetual (Millington (1979)).

The dependence upon comparable sales as a flaw in the method is suggested in the literature with Millington (1985) questioning the “almost blind faith in the power of the comparable as an indication of current market value” and the product of such blindness being exemplified by Glover (1985) who erroneously suggests:

“ ... the more the evidence which can be collected and assessed, the more accurate a valuation must be.” (page 138)

Given the “quintessential importance of comparability” (Powley-Baker (1991) page 1), Millington (1979) notes that a comparison must be with a similar property, situated in the same area and which has transacted in the recent past with how recent being dependent upon the stability or volatility of the market at the time. Rost and Collins (1990) summarise this with the unsophisticated but succinctly familiar adage of “like must be compared with like” (page 94).

By definition, the analysis of sales evidence is a retrospective investigation with, at best, a probably limited amount of sales evidence as at or very close to the date of valuation. The literature does not appear to focus on the retrospective and current time characteristics of the comparable evidence relative to the current time and expectational characteristics required of the data when applied within the context of a valuation.

Whilst various authors advocate careful analysis (see, for example, Baum and Mackmin (1979), Hanford (1976), Rost and Collins (1990), Fraser (1984)), an absence of instruction as to how to analyse transactions was evident excepting references to analysis being valuation in reverse and the need to maintain consistency in the assumptions and deductions made in both analysis and valuation. (see, for example, Millington (1979) and Britton et al (1980)). Rost and Collins (1990), however, refer to the need for a detailed knowledge of “all relevant sales” (page 86) and advocate that the valuer inspect and analyse sale properties, investigate the circumstances under which sales took place and interview the parties concerned. The authors do not, however, provide guidance as to how to undertake such analysis.

Though comparable evidence is fundamental to the optimal operation of the capitalisation of income method of valuation, Millington (1979) cautions:

“It is consequently dangerous to suggest that the results of analysis necessarily prove anything; at best they suggest what probably happened in a given situation” (page 97)

though that which a valuer should do during sustained periods of no transactional activity does not appear to be considered in the literature, excepting through the application of that approach argued to be “conventional dogma” within the instructional “Mainly For Students” section of the “Estates Gazette” for cases where directly comparable evidence cannot be found:

“ ... in the absence of direct comparables it is impossible to support this opinion, other than on the basis of the valuers experience. Thus every valuer reading this article will be able to argue for different rates” (“Mainly for Students, (1987) page 335)

Accordingly, if a directly comparable (or, absolutely identical in every respect) transaction cannot be identified for analysis, the literature suggests that the identification of the capitalisation rate for use in a valuation appears to be solely a function of the opinion of a particular valuer at that particular point in time. Given the frequent absence of market evidence per se and the limitation on the flow of full and complete information, which characterises the property market, it is contended that directly comparable evidence would be very rare and the requirement for the valuer to express an opinion very frequent. This reiterates, yet again, the pivotal role of the practitioner within the implementation of the capitalisation of income method of valuation (Millington (1979)).

The following Section will review the literature concerning the process to be followed by the valuer in then adjusting available, analysed indirectly comparable evidence to distil an opinion of that capitalisation rate to be adopted in a given valuation.

1.2.2 Adjustment Of Comparable Evidence

Thus, having identified and analysed relevant market transactions for use as comparable evidence, the literature suggests that such evidence be adjusted for application in the valuation of the subject property.

Healey and Baker (1985) comment (from Baum and Crosby (1988)):

“The prudent valuer is active in the investment market and is well aware that exactly comparable investment transactions are rarely available at the time of valuation, and the skill of valuation lies in interpreting the evidence available in the market place.” (page 166)

The requirement to adjust is almost automatically assumed within the literature for both differences between properties at a point in time (Britton et al (1980), Rost and Collins (1990) and see, also, *Brewarrana Pty Ltd v Commissioner Of Highways, SA* (1973), 25 *The Valuer* No 4, Wells J) and for the passage of time (Mainly For Students (1985)). Significantly, it is contended, the literature does not appear to focus on the adjustment of historic comparable evidence for use in the expectational context of a current time valuation.

Even if sufficient information is available, Ratcliffe (1978) still notes a need to “amend” to be “truly comparable”, adding that “... some adjustment is always necessary ...” (page 79). Whilst adjustment is generally advocated, Baum and Mackmin (1979) counsel that:

“ ... if the available data on sales is insufficiently comparable then it may become difficult to justify the use of a selected rate” (page 55)

and Rost and Collins (1990) note that the fewer the adjustments, the more reliable will be the sale as a guide to value. Accordingly, a level of inconsistency in the application of the capitalisation rate within the valuation process appears to be both generally anticipated and accepted within the literature.

The literature provides little guidance as to that which the valuer should consider when adjusting the capitalisation rate provided by the analysis of comparable sales. Specifics are rare with general advice prevalent, including adjustment to reflect:

“everything of concern to the investor except the amount of rent” (Fraser (1984) page 493)

or

“all the general and particular circumstances affecting the property under review” (Hughes (1952) page 72)

Student (1959) advocates that the valuer understand “... the factors affecting rates of capitalisation so that, when applying the rates he has deduced from comparable sales, he will be able to make proper allowance for the differences which exist in the nature of the incomes flowing from the respective properties” but does not go on to enunciate what such factors are, though a nexus with income flows is apparent.

Recent authors provide greater guidance as to the determining issues to which the valuer should have regard when undertaking the adjustment, including:

- location of property
- age of improvements
- tenancy structure
- tenancy quality
- length of lease
- remaining term certain on leases
- potential for extensions, refurbishment, etc
- condition of improvements (need for short-term maintenance/repair outlays)
- inherent tax benefits which may be available to purchaser
- areas of non-compliance with current building regulations (Brown (1992))
- vendor
- purchaser
- rent review cycles
- level of outgoings
- terms of sale
- provision of rental guarantees
- vacancies

and

- the state of the economy
- the general level of interest rates
- location of the property
- future rental growth prospects
- security of income
- age of the building
- lease terms
- size of the property (Brown (1984))

Accordingly, the approach to the identification and specification of those determinants, for consideration by the valuer when adjusting the capitalisation rate, found within the literature is very informal and there is considerable ambiguity as to that which the valuer should consider when adjusting the capitalisation rate deduced from comparable sales evidence and why, necessitating the application of heuristic approaches.

It is contended that the application of heuristic approaches renders the adjustment process subjective and informal, which creates inconsistency that contributes to variability between valuers in capitalisation rate selection.

It would appear, however, that adjustment to reflect the differences between two properties at a point in time and also to reflect the passage of time (being, effectively a reflection of changes in the economic environment and the property market in the interim) are anticipated within the literature.

Further, the literature provides little guidance as to how such adjustment should be quantified or made with qualitative, generalised advice abounding, for example:

“Under the present method habitually adopted, ... such adjustments are again made in a very arbitrary fashion by amendments to the yield.” (Ratcliffe (1978), page 79)

“The approach therefore is to weigh up the situation and make whatever adjustment appears to be appropriate - the valuer must make a subjective judgement” (Britton et al, (1980), page 104)

and

“Adjustments, when deemed necessary, must often be based on valuers opinion, supported by his knowledge and market experience.” (Rost and Collins (1990), page 226)

It is contended to be surprising that the literature only rarely appears to advocate the use of simple but more objective or formal techniques such as sensitivity or probability analysis during capitalisation rate selection (see, for example, Baum and Crosby (1988)), with the apparent sole prescription within the literature of a process of subjective mental adjustment, based upon the comparable evidence available, for the identification of the appropriate capitalisation rate.

Peterson (1981) specifically acknowledges such subjectivity, with Ratcliffe (1978) referring to “a mere matter of hunch or intuition” (page 78), Crosby to “valuers intuition” (Crosby (1990)) and Rost and Collins (1990) to whatever is “considered appropriate” (page 111). Britton et al (1980) develop the concept of the practitioners role in the capitalisation of income method of valuation yet further by noting that adjustments will:

“ ... depend on his knowledge of the changes and his skill in quantifying their effect”(page 3)

with Rost and Collins (1990) adding:

“The valuer, in making the adjustments for differences, relies on experience gained in the market place. He does not measure the variations between properties by using mathematical formulae or pricing these variables.” (page 111)

The role of heuristics within the capitalisation rate adjustment and selection process is, accordingly, clearly evident within the literature reviewed. Disconcertingly, the literature is brief, insular and generally unhelpful concerning the adjustment process, but serves to confirm the totally subjective and

informal basis upon which adjustments are prescribed, suggesting the potential for considerable inconsistency.

Significantly, the teaching texts reviewed suggest that the process of quantifying the adjustment to be made is taught in practice rather than in academia, with Britton et al (1980) stressing that examples are illustrative only and “... not intended to indicate either levels for any specified factor or the relationship between factors ...”. Further, both Baum and Mackmin (1979), who quote an RICS Part II Examination on “Principles Of Valuation” and Britton et al (1980) in a worked example, refer to a specific capitalisation rate for use rather than citing comparable transactions and leading the reader through the adjustment process.

It is also contended to be significant that examples of the capitalisation of income method of valuation found in teaching texts generally quote comparable evidence devalued to multiples of 0.25% or 0.50% (see, for example, Britton et al (1980)), though it is anticipated that the analysis of comparable sales transactions may be unlikely to always result in evidence of a capitalisation rate of the same increment.

It is, therefore, apparent that the availability of full information concerning directly comparable sales is likely to be rare and that the valuer is likely to be required to adjust indirectly comparable evidence for both the passage of time and differences to the subject property being valued.

Though the role of the valuer as the adjustment mechanism is clear within the literature, little guidance is provided as to the range and nature of relevant influences for which an adjustment should be made or the process by which the adjustment should be made. Accordingly, such adjustments are contended to be found to be subjectively and informally made on the basis of an heuristic approach, so creating the potential for considerable inconsistency in the capitalisation rate adjustment process.

With such potential inconsistency inherent in the adjustment and selection of the capitalisation rate and given the capitalisation rates central role in the capitalisation of income method of valuation, it is not surprising that significant criticism of both the method and the rate has arisen, which will be briefly considered below.

1.2.3 Criticisms Of The Capitalisation of Income Method of Valuation

Though the capitalisation of income method been in continuous use during this century, the literature suggests that it has been subject to sustained criticism. Such criticism has been levelled at not only the

philosophical basis of the method but also its practical operation, including specific criticism of the capitalisation rate itself and its selection which may be summarised as follows:

1.2.3.1 Criticism Of The Investment Method

1.2.3.2 Criticism Of The Capitalisation Rate

1.2.3.1 Criticism Of The Investment Method

On a philosophical plane, Baum and Crosby (1988) note that the theoretical base of comparative investment appraisal is generally well defined but lost in the practical application of investment valuation techniques, with the detailed application of the method concentrating “almost exclusively on the analysis of comparable property investments to determine yields” (page 66). Hence the nexus with the investment markets generally and the relativity of pricing of asset classes in the capital markets is hidden beneath an overwhelming focus on comparable sales evidence.

It is contended that the distance between the theoretical foundation of the method and its practical application is significant. The literature suggests that the capitalisation of income method has principally become a form of comparative analysis and that the recognition of its functional role within the framework of property, finance, commerce and economic theory has become suppressed or lost.

This was briefly considered in Section 1.1.3, above, with the distinction between market pricing and appraisal of worth contended to comprise an important foundation for the conceptual framework within which the prevalent comparable based determination of capitalisation rates may be distinguished from the preferable determination based on logical and rational economic criteria developed from first principles.

On a practical plane, Baum and Crosby (1988) go on to note that the deficiencies in the capitalisation of income method of valuation came under close scrutiny by Greenwell (1976) and Trott (1986) such that:

“Techniques used in appraising the value of investment properties, seemingly beyond debate, have all come under the scrutiny of many observers and commentators, not all of them property valuers.” (Preface)

Acknowledging the integral role of the practitioner within the capitalisation of income method of valuation, Baum and Crosby (1988) advocate accuracy and defensibility through rationality, noting:

“The valuers reputation is endangered particularly by a belief that his methods are incorrect, illogical and, by deduction, capable of leading to inaccurate appraisals.” (page 18)

Significantly, Pyhrr et al (1989) devote very little attention to the capitalisation of income method of valuation in their seminal US teaching text, castigating that which “usually produces a quick-and-dirty ballpark estimate of investment value” (page 64). Brown (1992) is less dismissive, commenting that:

“Many of us are well aware of the shortcomings of the traditional capitalisation approach which, in my opinion, will always serve as an approach to value but, with rapidly changing markets, requires manipulation and a more sophisticated approach to take account of the many factors which influence the level of income and the rate of return. I am not suggesting that this technique no longer has application. Its use in valuing smaller investment properties will remain so long as users bear in mind the limitations of the approach.” (page 56)

The capitalisation of income method of valuation is, therefore, contended to be a startlingly simplistic and inadequate expression for a potentially complex relationship of issues.

In addition to criticism of the capitalisation of income method of valuation within the literature, the capitalisation rate itself and the adjustment process are also subject to regular criticism.

1.2.3.2 Criticism Of The Capitalisation Rate

Of the various inputs into the capitalisation of income method of valuation, the capitalisation rate and its selection have arguably faced the greatest criticism with Baum (1984) identifying the

“... closed implicit nature of practice which currently prevails, and which is epitomised by the use of the ‘all-risks yield’ as a single gauge of the complex relationships of advantages and disadvantages within a particular investment.” (page 229)

The black-box nature of the capitalisation rate (see Section 1.1.3, above) is regularly criticised with Jones Lang Wootton (1992) claiming that the property market is too complex to use a single variable adjustment to reflect everything and Baum and Crosby (1988) proclaiming the growth implicit all risks yield to be “riddled” “with unforeseen errors, irrationalities and difficulties, but made seemingly innocuous by its familiar appearance.” (page 252)

Hanford (1976) cites a common criticism of the capitalisation rate as the impossibility of reflecting the many nuances between two similar properties, which are too numerous and too subjective for the adjustment process to generate a dependable resultant number. Many authors have called for the implicit factors within the capitalisation rate to be made more explicit to aid decision making and enhance the defensibility of valuations under criticism (see, for example, Baum (1984)).

Similarly, various authors have dwelt on the limitations of reliance upon the analysis of comparable sales evidence for the identification of capitalisation rates for use within the capitalisation of income method of valuation. Mainly For Students (1987A) comments:

“The problem is one of insufficient comparable data, and inaccurate valuations can arise if reliance is placed on subjective adjustments made to the incomparable in an effort to make it comparable” (page 807)

adding that the Trott Report (Trott (1986)) found the process of selecting rates “to be lacking rational explanation”. Baum (1984) adds that “(m)ost property textbooks give little guidance on the assessment of the yield figure, ...” with Cohen (1979) devoting considerable attention to the pitfalls and problems of analysis to derive the capitalisation rate.

Furthermore, should any of the concepts underlying or requisite conditions for the operation of the capitalisation of income method of valuation (as considered in Section 1.1.2, above) be substantially abrogated, the applicability of the method will be limited accordingly.

Arguably, the key criticism of the derivation of the capitalisation rate is attributed by Mainly For Students (1990) to Trott (1986):

“the derivation of the all risks yield and also the adjustments which are made thereto are usually intuitive, imprecise and subjective. But, above all else, they are implicit” (page 86)

with Baum and Crosby (1988) summarising that such adjustments to the capitalisation rate are “at best intuitive and at worst guesswork” (page 114).

Accordingly, the limitations of both the capitalisation rate itself and the adjustment process are each both generally acknowledged and frequently criticised within the literature.

1.2.3.3 Summary - Criticism Of The Capitalisation Of Income Method Of Valuation

The subjective, informal and heuristic manner in which the capitalisation rate is selected for use within the capitalisation of income method of valuation and the application of the method itself are both subject to direct and regular criticism within the literature. Despite the potential for inconsistency in the derivation of the capitalisation rate inherent in such selection and application, the basic approach does not appear to have been subject to much amendment despite the criticisms made.

Given the manner in which the capitalisation rate is selected, a level of inconsistency is suggested to be both expected and acceptable. This would further suggest that there is a point at which the level of inconsistency in capitalisation rate selection becomes unacceptable and this, together with the response to such inconsistency found within the literature, will be briefly considered in the following Section.

1.2.4 Extent Of And Defences Of Permissible Inconsistency

There is a wide array of literature concerning the debate on valuation accuracy, which appears to have been ongoing for many years, but relatively limited attention appears to have been given to valuation consistency which is of greater relevance here.

It was suggested, above, that the manner in which the capitalisation rate is selected contributes to a level of inconsistency which is both expected and acceptable. Accordingly, it may be contended that it is only when the level of inconsistency is unexpectedly great that it may become unacceptable.

The point at which the level of inconsistency ceases to be permissible or becomes unacceptable and the defences of such continuous inconsistency will be reviewed through a consideration of aspects of inconsistency in the following sections:

1.2.4.1 Extent Of Permissible Inconsistency

1.2.4.2 Defences Of Inconsistency

It is, however, contended that even though a level of inconsistency in valuation may be unacceptable, it may not necessarily render the valuation inaccurate.

1.2.4.1 Extent Of Permissible Inconsistency

Whilst the literature explicitly condones inconsistency in capitalisation rate selection, the point at which such inconsistency ceases to be acceptable is contended to be potentially likely to be below the point of inaccuracy.

Baum and Crosby (1988) distinguish the charge of irrationality against conventional methods of valuation from that of inaccuracy, though the authors caution that a lack of evidence of inaccuracy does not necessarily prove accuracy.

Furthermore, the authors note that valuations may rarely be found to be inaccurate as they are generally hedged upon a series of assumptions which may be violated (a view echoed by Brett (1990)) and require prices to be revealed by a same point in time sale.

Table 1.6 summarises the results of a case study of a portfolio valuation and tender sale conducted as at the same date. Each valuer was instructed to prepare a valuation on the standard open market value basis prescribed by the Australian Institute of Valuers and Land Economists as at the date of the close of tender. Each of the properties within the portfolio were offered for sale separately and comprised relatively straightforward investments with no unusual characteristics. Accordingly, though none of the prescribed assumptions were violated and price was revealed as at the date of valuation, the level of consistency by valuers in their valuations ranged from 14% above price to 10% below price which was considered by the client (an institutional investor vendor) to be unacceptably wide and to be likely to produce sub-optimal decisions if based on valuation alone.

Price Relative To Valuation	
Office A	-7%
Office B	+14%
Retail A	-7%
Retail B	+2%
Industrial A	-9%
Industrial B	-9%
Industrial C	-10%

Portfolio Valuation - Case Study

Table 1.6

Miles (1986) found inconsistency in the valuation of both usual and unusual investment property by a small sample of valuers, with Hager and Lord (1985) anticipating a range of “about 5%” difference in valuations from a sample of valuers around a central control valuation and expressing surprise when the survey sample results ranged from -26% to +8.2%. Further, Baum and Crosby (1988) comment that “it is even common to quote an acceptable margin of error of 15% in valuations.”

Significantly, whilst Bornand (1985) notes “.... that one *can* expect a good degree of accuracy in valuation” and Glover (1985) quotes Michael Mallinson, then Chief Surveyor at the Prudential, as commenting that 10% was the outer limit of an acceptable margin of difference, there is considerable comment within the literature by both academics and practitioners refuting the expectation of accuracy in valuation.

For example, Millington (1985) dwells on the improbability of accuracy, curiously citing such an expectation as “foolish” and akin to an aspiration to predict the winner of the Grand National which, if achieved, would remove risk and the prospect of gains and losses from property investment. Similarly, Mainly For Students (1985) expresses frustration at “the frequency with which the valuation profession is challenged by others on the accuracy of valuation” (page 295).

The fundamental characteristics of property as an asset class, the imperfect nature of the property market, the lack of a central register of sales and confidentiality of information are all cited as precluding such accuracy (see, for example, Mainly For Students (1985) and Millington (1985)).

Millington (1985) further notes that the conditions of full information of prices, homogeneity of product, ease of mobility of participant and product and competition between numerous active participants should exist for a perfectly competitive market but are absent for the property market with such imperfection being compounded by other factors which also influence supply/demand for investment property, including the cost and availability of credit, tax changes and changes in consumer preferences which create an investment framework within which the author contends “great” and “regular accuracy” are “impossible”.

The author also comments that the property market is effectively an amalgam of distinct local markets with localised buyers and sellers, which considers market values as the aggregate behaviour of individual investors, prior to advocating the use of a range and a most probable estimate of value as optimal, amplifying this aspect with the overlay of expectations and the roles of the respective participants:

“ ... trying to predict the valuations of a number of different people all with different circumstances and different expectations of the future. Add to these

variables the different expectations of a number of valuers and it is hardly surprising ... that they arrive at different valuations” (page 264)

with Glover (1985) adding that, given such characteristics, a valuation is only accurate on the day that it is made.

Mainly For Students (1985) concludes:

“This unfortunately means that buyers and sellers of property will win some and lose some. The property investor can, however, be reasonably confident that two or more experienced valuers are unlikely to be more than 10% out in their valuation of a portfolio.” (page 295)

with such a qualified statement clearly inferring that the prospect of a difference greater than 10% remains possible though not, necessarily, probable.

The implications of discrepancies in commercial valuations for investors, managers, auditors and regulators are considered by Locke and Langfield Smith (1989) and contended to be potentially both significant and serious.

Despite the arguments against an expectation of accuracy, the Courts have considered the issue in various professional negligence cases and established certain bounds of acceptable inaccuracy.

Interestingly, there have been few cases where the Courts have had to consider issues of alleged negligence in the context of the valuation of office investment property. Norris and Joyce (1994) note that the Courts favour an approach known as the “acceptable margin of error” or “bracket” which was first stated in *Singer and Friedlander v. John D. Wood & Co. (Supra)* (a case concerning a rural property for residential development) in which the Judge held there to be a “permissible margin of error of 10% either side of the ‘correct’ figure”, extended to 15% “in exceptional circumstances”. The authors further note that in *Trade Credits Limited v. Baillieu Knight Frank (NSW) Limited (Supra)* (a case concerning a rodeo property), expert evidence indicated a margin of “up to 15%” and that, in *Private Bank & Trust Co. Limited v S (UK) Limited*, [1983] EG 112 (a case concerning the redevelopment of an office property), Rice J accepted the broader concept of a “permissible margin of error of 15% either side of (a) bracket of value”.

One of the few cases found within the literature which concerned the valuation of prime, CBD office investment property was that of *Banque Bruxelles Lambert SA v Eagle Star Insurance Co Ltd and Others* [1994] 31 EG 68 and [1994] 32 EG 89 (BBL). The case considered three substantial properties

which were each held to have been negligently valued, with each having being valued by the capitalisation of income method (as summarised in Table 1.7) and with the extent of inconsistency ranging from 37% to 61%. Whilst Phillips J expressed an opinion that such inconsistency was unacceptable, he did not express an opinion of the extent of inconsistency which might be acceptable, apart from citing the above authorities and noting, interestingly, that BBL assumed “valuations would be within 10% of the true market values” (page 92).

Property	Trevelyan House	Crusader House	Cambridge Circus
Area - sq ft	60,000	107,000	145,000
Sale Agreed	9/3/89	30/5/89	13/4/89
Sale Price	£25.5m	£59m	£73m
Valuation	£44.35m	£83.95m / 82m	£103m
Valuation Date	11/4/89	30/6/89 & 3/7/89	20/6/89
Expert Witness			
Valuation	£27.5m	£60m	£75m
Maximum	£30m	£63.5m	£80m
Overvaluation	61%	40% / 37%	37%

Summary Of Comparative Prices And Valuations From BBL
Source: BBL [1994] 31 EG 68 at page 71

Table 1.7

In discussion, the authors contended that 10% may be a minimum with their experience suggesting that, at the other end of the spectrum, for unique properties and valuations undertaken at a time of uncertainty, the margin could extend to beyond 15% with their having known expert opinions to differ by “up to and in excess of 20%” (page 67 and 68).

Whilst some academics have suggested that a philosophical change is nascent in the attitude of the Courts that will manifest in a reducing reliance being placed upon the margin of error principle in valuation negligence cases, the authors were unaware (in further discussion) of any support for such a suggestion, contending that the margin of error principle was still fundamental in valuation negligence cases currently before the Australian Courts.

In addition to the qualitative approach to the valuation accuracy debate, considered above, a quantitative approach was also identified within the literature reviewed.

Brown (1991) and (1985) investigates whether valuers and other market participants use the same information subset in the same way by considering if valuations are a proxy for price. The author acknowledges that value and price do not have to coincide on a one-to-one correspondence, arguing that, on average, no significant bias should exist. Based on quantitative analysis, Brown suggests that there is a close relationship between valuations and prices. Given that the whole basis of professional property advice rests on the assumption that valuations are a good proxy for prices, on average, this finding is comforting though it implicitly acknowledges and supports the existence of a level of variation.

This finding was, however, challenged by Matysiak and Wang (1995) who comparatively analysed valuations within three to six months prior to sale, finding the following probabilities of achieving a selling price relative to valuation:

Selling Price Within +/-% Of Valuation	Probability Of Achievement
10%	30%
15%	55%
20%	70%

By contrast, Newell and Barrett (1990) found, by a survey of the users of valuation reports, that only 70-75% of such valuation reports were considered as “giving reliable estimates of market value” (page 97) and Locke and Langfield-Smith (1989) refer to the findings of Cole, Guilkey and Miles (1986):

“The overall result is a mean absolute difference between sales price and appraisal, of 9.5%. Cole et al conclude that such an outcome does “not indicate a high degree of reliability in the individual commercial appraisal product” ”. (page 272 and 273)

Whilst Court reports provide extensive information upon the acceptable margin which distinguishes an alternative view from a negligent valuation, the literature offers few indications of the extent of the margin acceptable to recipients of valuation advice in normal practice. The authors own experience as an institutional property investment operative suggests that the Australian professional property investment industry generally considers a valuers opinion which is within 5% of actual value to be satisfactory and within 10% to remain acceptable.

It is contended that, having regard to the above, for a freestanding, prime, CBD office investment property, the extent of permissible inaccuracy may be considered to be in the order of 10% without the allegation of negligence appearing likely to be founded. Accordingly, for the purposes of this Thesis, a difference of up to 10% will be considered to be an acceptable margin of inconsistency.

Given the entrenched acceptability of inconsistency within both the selection of the capitalisation rate and the capitalisation of income method of valuation, a significant body of valuation lore has developed to rationalise and defend the outcome of such inconsistency.

1.2.4.2 Defences Of Inconsistency

Argument defending and rationalising such inconsistency receives extensive attention within the valuation literature in what might be termed the lore of approximations. It is contended that there are two principal groups of defences under such lore being capable of classification as qualitative and quantitative (which will be considered as Sections 1.2.4.2.1 and 1.2.4.2.2, respectively, below).

Some authors during that earlier part of the century when the ‘professional’ approach to valuation prevailed, actively discouraged too much quantitative analysis:

“ ... pedantic accuracy in arithmetic, it must be remembered, is neither useful nor desirable and, in fact, if revealed by a valuer in course of negotiations may well discredit him in the eyes of an opponent.” (Shepherd (1935))

More recently, whilst the literature appears almost resigned to such rationalisation and defences, various authors still aspire to a greater level of consistency. Millington (1985) advocates that valuers should seek improved performance through:

- greater use of technology;
- emergence and establishment of research departments within major firms;
- viewing comparables critically rather than unquestioningly accepting them as evidence of what the market will pay;
- continuously educating themselves and so seeking to improve their own technical ability; and
- improving “their attitudes and their methods” (page 262).

Whilst calling for greater accuracy in the valuation process (“ ... valuers should aim for the highest degree of accuracy possible ...” (page 260)), the author does not specify what level of accuracy would

be acceptable and also fails to distinguish accuracy from consistency, the former being a separate but related area of valuation theory beyond the scope of this Thesis for detailed consideration.

1.2.4.2.1 Qualitative Defences

The qualitative defences of inconsistency and approximation have evolved over the century, to the extent that they have been accepted in litigation within the higher Courts and include both general defences (attributable principally to the underlying characteristics of the property market and considered above) and a range of specific defences (comprising recurrent, rationalising concepts).

The extensive role of the practitioner in the selection of the capitalisation rate and implementation of the capitalisation of income method of valuation was noted above and provides the basis for a range of specific defences, comprising recurrent, rationalising concepts in support of the lore of approximations, that have developed during a century of practice and which may be summarised into the following groups:

The 'art vs science' defence:

Whilst Baum and Mackmin (1979) proffer the following definition:

"Valuation is the art or science of estimating the value of interests in property"
(page 50)

the authors go on to add:

"Valuation has been likened to a science, not because of any precision that may or may not exist ... but because the question 'How much?' poses a problem that requires a solution." (page 53)

Millington (1985) interestingly relates this to the issue of consistency:

"Valuation involves both art and science: the art is that of forming judgements, and as subjectivity inevitably enters them, complete consistency between valuers is impossible; the science is the mathematical conversion of these judgements into a valuation, and here precision is possible" (page 260)

with numerous authors debating whether valuation is an art or a science (see for example, McIntosh and Sykes (1985), Glover (1985), Cairns (1985) and Litchfield (1958)).

Joyce and Norris (1994) review cases relevant to the issue of professional negligence by valuers and the 'art vs science' defence is regularly found to have been accepted by the judiciary in various high profile cases, including:

"valuation is an art not a science. Pinpoint accuracy in the result is not therefore to be expected by he who requests the valuation." (Singer and Friedlander v. John D. Wood & Co. (Supra))

"Forming this opinion on the basis of comparables is not a precise science." (BBL (Supra))

"Valuation is not a science. It is an imprecise, opinionative activity ..."
(Electricity Commission Of NSW (trading as Pacific Power) vs Arrow, NSW Court Of Appeal, (1994) 85 LGERA 418 at 419 per Kirby, P)

"Valuation is, after all, not a precise science." (Mount Banking Corporation Ltd v Brian Cooper & Co., [1992] 35 EG 123 - Mr Stewart QC sitting as a Deputy Judge of the High Court Of England)

"art rather than an inexact science" (Gibbs & Anor v Arnold Son & Hockley, [1989] 2 EGLR 154)

By definition, precedent has perpetuated the 'art v science' defence through the decades and may, arguably, be expected to continue to do so given its inherent usefulness in the defence of allegedly negligent valuers. Through longevity, such defences gain credibility though become glaringly anachronistic in an electronic age.

The 'Gut Feel' and 'Intuition' defence:

An extension of the 'art' defence, Hughes (1952) refers to those "who can value almost by instinct" with McIntosh and Sykes (1985) considering the role of intuition in the era of the use of the computer. The role of intuition in sourcing the capitalisation rate is succinctly summarised by Mainly For Students (1985) which notes that it:

"... has to come from very limited real sales evidence and a lot of market 'feel'." (page 295)

Conversely, Glover (1985) validly argues that such defences render valuation little more than educated guesswork.

The veil of mystique:

The notion that property is a special asset class and that valuation of property requires skills quite distinct from those of valuers of other asset classes has contributed to a mystique surrounding the valuation process, which various authors argue to be unsubstantiable (see, for example, McIntosh and Sykes (1985)).

Appraisal, analysis and valuation, worth, price and value:

The vitally important conceptual distinction between the prevalent comparable based determination of capitalisation rates and the preferable determination based on logical and rational economic criteria from first principles (considered in Section 1.1.3, above) is found to be submerged within the literature reviewed beneath extensive discourse on the definitions of and differences between appraisal, analysis and valuation and between worth, price and value, respectively, much of which is semantic rather than contributory.

The vast attention within the literature to discussion of the distinction between each (see, for example, Baum and Crosby (1988), Heselgrave (1983) Millington (1979), Ratcliffe (1978), Pyhrr et al (1989) Parker (1993E), Mackmin (1987), Fraser (1984), Decker (1985), White (1988)) has provided a significant, protracted and highly effective distraction for the majority of practitioners and commentators from the fundamental deficiencies within the capitalisation of income valuation process for over a decade.

Conventions of convenience:

As the simplicity of the capitalisation of income method of valuation became progressively challenged by a more complex emerging property market, a range of conventions evolved which endeavoured to enhance the level of consistency in the analysis of comparable sales and subsequent use of that data in the capitalisation of income valuation process through convenient assumptions.

Such conventions of convenience as assuming annually in arrears income flows, disregarding taxation and costs, assumption of a 1% differential between term and reversion income streams and so forth have been widely criticised for over twenty years (see, for example Greaves (1972), Baum and Mackmin (1979), Baum and Crosby (1988)) but continue to remain popular in practice and deflect attention from the fundamental deficiencies of the capitalisation of income method of valuation.

The convention of assuming total equity funding (or the disregard of the role of debt) found in the UK and Australian approaches may be distinguished from the debt/equity funding assumption common to those US methods which were prevalent for several decades.

Accordingly, the development within the UK of practice based on the convention of an assessment of price with equity funding is clearly distinguishable from the US practice, which was more akin to an appraisal of worth based on a combination of debt/equity funding so offering a more rational and logical, though flawed, approach to capitalisation rate identification (as considered in Section 1.1.5.2, above).

Rounding:

The separate derivation of the net income (which is composed of a series of contributory elements) and of the capitalisation rate within the capitalisation of income valuation process and their combination within the method affords numerous stages at which source data may be rounded. This, of course, provides a major potential source of inconsistency and as Millington (1979) points out:

“Where a series of figures are all “rounded off” there is always the possibility of cumulative errors being unacceptably large.” (page 107)

Through decades of criticism, the valuation profession has developed a body of qualitative defences to inconsistency which, despite being criticised themselves, have both comprised a significant part of the evolution of the capitalisation of income method of valuation and served to insulate the method within a developing body of property theory, simultaneously. The apparently almost universal acceptance of such qualitative defences or rationales for inconsistency, however, merely serves to perpetuate the inconsistencies inherent in the capitalisation of income valuation process.

More recent research has, however, provided an alternative insight into the inconsistency debate from a more rigorous viewpoint, affording the practitioner further capital markets based rationales and quantitative defences of inconsistency for his already extensive armoury.

1.2.4.2.2 Quantitative Defences

Brown (1991) and (1985) considers concepts from finance and capital market theory in the context of property and reviews their applicability.

Consistent with finance theory, the author argues that the value of a property is dependent upon the quality and quantity of available information in the relevant information sub-set. The role of the valuer is contended to be to ensure that the information set is clearly defined and to interpret only that information which is relevant to the valuation, though it is acknowledged that the distinction may not always be clear cut. Furthermore, differences will arise in the type of information incorporated and the

reliance placed upon each piece of information by different valuers, manifesting in differences in assessed values.

The reflection of all known information in prices or market efficiency is considered in the context of the property market, with the author distinguishing between 'operational efficiency' (high transaction costs, lumpiness, etc) and 'allocational efficiency' (where valuations reflect what is happening in the market place and can be used as the correct method for allocating investment funds), concluding that the property market may be imperfect but is not necessarily inefficient. Following quantitative research, the author concludes that at the weak form of market efficiency, the property market responds well and so infers that investors may earn excess returns from trading rules based on publicly available information.

As referred to in Section 1.2, above, this conclusion is challenged by Baum and Crosby (1988) who argue that, in larger UK practices, valuations are often carried out by a marketing agent, such that the confluence of roles could be expected to contribute to a closer proximity between price and value.

Brown drafts the valuation model as a reflection of the valuers expectation and assessment of each of initial rent, long term required rate of return and long term growth rate in rent noting that the valuers role is to assess each, independently, having regard to the type of property, its condition and location together with the economic prospects of the area. If valuers, therefore, have differing expectations, a variation in value may arise.

The valuation model is contended to merely draw upon useful information available in the market place and define the economic relationship between the critical variables. As such, the valuation model is contended to be of use in establishing equilibrium market value which can then be used to determine if a property is over or under priced and so identify opportunities to earn abnormal returns. The quality of the estimate of equilibrium value is dependent upon the quality of information available.

This may be contrasted with valuation by comparison to similar properties which, the author contends, provides a guide to the best value that can be obtained in the market place but does not determine if the property is over or under priced in an economic sense as it has no economic reference of market equilibrium. Variation may, therefore, also be expected for a range of market place values arising through the use of current methods around an estimate of equilibrium value determined by Browns expectational model.

It is contended that the concept of impounding all knowable information into prices to allow a market to function efficiently is particularly interesting in the context of property and the role of the valuer, providing a significantly more objective rationale for variability than the qualitative defences considered above.

1.2.4.3 Summary - Extent Of And Defences Of Permissible Inconsistency

It is contended to be significant that, despite sustained criticism of the subjective, informal and heuristic determination process by which the capitalisation rate is adjusted and selected for application within the capitalisation of income method of valuation and of the method itself, the valuation profession has not sought to embrace more objective and formal approaches. Instead, a resignation to both expect and accept inconsistency is apparent within the literature reviewed.

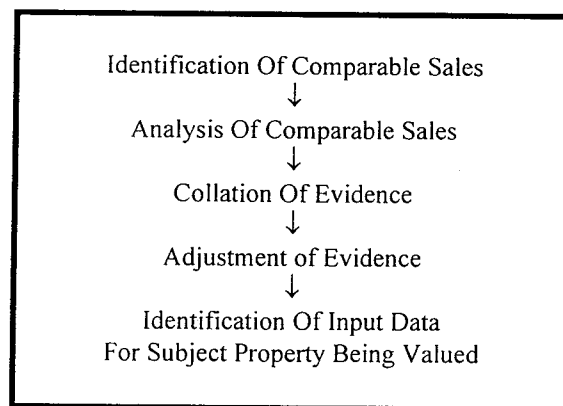
Such resignation has contributed to a whole body of law and of lore concerning the extent to which and the defensible rationale by which such inconsistency may be acceptable. It is contended, however, that such defences lack credibility and merely principally serve to protect techniques and applications which have lost a logical base (Baum and Crosby (1988)).

A more credible argument for inconsistency may arise from the more recent, rigorous, quantifiable analysis as it is further researched and developed. Whilst such research may contribute a more logical rationale for such inconsistency, whether it leads to the adoption of more objective and formal approaches remains to be seen.

1.2.5 Summary - Current Methods Of Capitalisation Rate Selection

From the literature reviewed, the current method of capitalisation rate selection, for the subject property being valued, was found to comprise the adjustment by the valuer of evidence of capitalisation rates found from analysis of comparable property sales transactions as summarised in Table 1.8.

Those determinants to be considered by the valuer when adjusting the capitalisation rate were not found to be clearly enunciated within the literature reviewed and the adoption of subjective, heuristic and informal approaches to determination and adjustment were found to be advocated. Such approaches to adjustment are contended to contribute to variability between valuers in capitalisation rate selection.



**Process For Operation Of The
Capitalisation Of Income Method Of Valuation**

Table 1.8

It is contended to be significant that a simple, step by step, composite guide to the process of selecting the capitalisation rate for use in the capitalisation of income method for the valuation of an income producing office property was not identified within the teaching texts and related literature reviewed, though various aspects were found to be addressed individually but to significantly differing levels ranging from superficial to deep and incisive.

The adjustment process was found to be subjective, informal and heuristic, to have been extensively criticised within the literature over a protracted period and to lead to a significant but expected and apparently acceptable level of inconsistency in outcomes.

Rather than address such criticisms and inconsistency by fundamental changes to the method, a range of rationalising defences for inconsistency were identified with the contention that inconsistency of up to 10% may be acceptable for prime, CBD office investment property.

It is also contended to be significant that the capitalisation of income method of valuation is heavily dependent upon the input of the individual practitioner and contains such a large number of related problem areas. For example, in endeavouring to undertake a valuation of a rack rented, office investment property by the capitalisation of income method, it appears to be generally accepted that:

- few if any directly comparable sales will exist for use as evidence;
- the information regarding such sales may be incomplete and may be dependent upon the individual valuers access to market participants for identification;

- there are no defined approaches to analysis, excepting the principle of compatibility of approach with that of the valuation, with total dependence upon the individual valuer for accuracy and consistency;
- adjustment will almost certainly be required;
- there are no defined approaches to adjustment with total dependence upon the individual valuer for implementation; and
- the selection of the capitalisation rate for use in the valuation of the subject property is, ultimately, totally dependent upon the individual valuer.

Accordingly, it is contended that the input of the individual practitioner in the selection of the capitalisation rate for use in the valuation of an office investment property is both very significant and potentially unique to that particular valuer.

Further, the range and nature of relevant determining issues to which the valuer should have regard when undertaking the adjustment are not clearly enunciated.

Acknowledging this and given the number of problem areas in the capitalisation of income valuation process, it would be remarkable if two valuers achieved the same result when valuing an office investment property.

It is further contended that the current approach to capitalisation rate selection adopted by the valuer comprises a market pricing approach based on comparable evidence, so being a current time or retrospective assessment and producing estimates of where prices have been.

Conversely, the investor is contended to select a capitalisation rate through an appraisal of worth, based on first principles through a deterministic approach using logical and rational criteria being a current time or prospective assessment and producing estimates of where prices are or should be.

Accordingly, it may be contended that the investor sets the market which the valuer then seeks to simulate, with the gulf between the respective approaches being manifest in one respect through inconsistency in valuations observed.

This Section has, therefore, identified the current method of capitalisation rate selection by the valuer, through adjustment of evidence between properties at a point in time, establishing the general problem area as being the inconsistency in outcomes attributable to the subjective, informal and heuristic approach to determination within the current method adopted by valuers, which has evolved through practice thus being independent of and so unlikely to accord with theory.

Having identified and established the general problem area, it is now proposed to consider some of the issues arising from the current method of capitalisation rate selection and thereby focus upon a specific, defined problem for investigation in this Thesis.

1.3 ISSUES ARISING FROM THE CURRENT METHOD OF CAPITALISATION RATE SELECTION

A range of issues arise from the general problem area of the inconsistency in outcomes from the valuers current method of capitalisation rate selection between properties at a point in time. Such inconsistency is contended to be attributable to the subjective, informal and heuristic method of determination and adjustment currently adopted, which has evolved over time through practice rather than developing from a sound basis of theory.

Within the context of prime, CBD office investment property, the range of issues arising will be grouped below as the principal issue for consideration in this Thesis (Section 1.3.1, below) and a range of related but subsidiary issues (Section 1.3.2, below), with the rationale for addressing same then being considered (Section 1.3.3, below).

By focussing upon the principal issue and by having regard to the subsidiary issues, it is contended that the specific problem, for investigation in this Thesis, may then be defined.

1.3.1 Principal Issue

It is clear from the literature reviewed that the subjective, informal and heuristic approach to capitalisation rate determination and adjustment currently adopted by valuers could result in the following scenario arising:

- two valuers are seeking to value the same prime, CBD office investment property on the same basis at the same time;
- each are equally qualified, skilled and experienced;

- each are given the same evidence of capitalisation rates deduced from comparable sales transactions;
- each adjusts that evidence;
- each arrives at a different conclusion of the appropriate capitalisation rate for application to the subject property being valued;
- the conclusion of each is equally defensible on the findings of the literature reviewed;
- the property has two different but equally defensible values at a point in time.

Whether or not either valuation is correct is a matter beyond the scope of this Thesis, but the principle of achieving two equally valid answers to the same question is contended to be illogical.

Given the same task, the same information from which to derive the answer and the same method of derivation at the same point in time, the only logical basis for such inconsistency in outcomes may be attributed to a different application of the method of adjustment by the two individual valuers to the relevant determinants for consideration, or more specifically, to the subjective, informal and heuristic approach required for the application of the method of adjustment currently adopted.

Accordingly, the principal issue arising from the current method of adjustment is contended to be the level of variability in capitalisation rates selected by the valuer through the application of the current method.

It is contended that a formal, deterministic model based on first principles, that is logical, rational and economically grounded and which more closely mirrors the appraisal of worth undertaken by the investor, would offer a rigorous approach to adjustment by addressing and combining the relevant determinants and would produce the same result given the same task, the same information from which to derive the answer and the same method of adjustment at the same point in time. Accordingly, the level of variability arising from the application of the current method by valuers is contended to be unacceptably high under such conditions.

Any breach of the conditions of similarity specified above could be contended, from the literature reviewed, to provide justification for the two valuers achieving different answers which not only remain equally valid but confer upon the property two logically defensible and different values.

It is contended that, in addition to the principal issue for consideration in this Thesis, being the unacceptable level of variability arising from the current method of adjustment adopted by valuers, a range of subsidiary issues also arise which will be considered further below.

1.3.2 Subsidiary Issues

The derivation of differing but equally defensible or inconsistent capitalisation rates may potentially contribute to differing or inconsistent valuations of investment property. Accordingly, a range of sub-optimal decisions may then be made upon the basis of such valuations which is of significance to decision makers as it undermines the validity of the decision made.

Further, such sub-optimal decisions may have an economic impact including purchase, sale, borrowing, lending and so forth contributing to a sub-optimal allocation of resources. This may become manifest as an incorrect balance sheet, erroneous statement of returns, over extension on loan facilities on an unworthy project, accentuation of development booms and busts, the under or over provision of the right or wrong types of property at given times so undermining economic growth and a range of related outcomes.

Each issue may then have a further, consequential effect such as the allocation of resources to a particular sub-optimal project which diverts resources from an optimal project, the investment of funds in property as an asset class which might otherwise have been invested in another asset class and so forth.

The adjustment of the capitalisation rate has also been considered as an information impounding exercise, where the user seeks to incorporate a wide range of information into a single expression. Consistency in the impounding of information by users may be challenging to achieve and maintain, rendered more difficult by the numerous information processing steps in the capitalisation of income method of valuation.

The informality of each step of the capitalisation of income method further contributes to problems of efficiency in information processing and increases the potential for inconsistency. Given the issues of timeliness, the confidential nature and often limited availability of full information concerning a given property transaction, information processing is rendered even more challenging.

Further, if the vendor/purchaser and valuer are impounding information inconsistently, questions may be raised concerning the validity of valuations as a proxy for price and the efficiency of the property market. Whether or not the user effectively impounds such information is a significant issue in the pricing of property as an asset class and may lead to under or overpricing of not only individual properties but also property sectors and property as an asset class, relatively, together with having a potential impact upon the ability to earn abnormal returns.

The ability to have two different but equally valid valuations also raises the issue of how different can the two valuations be? Whilst the Courts have expressed a very sympathetic view to the valuer seeking to practise such an “inexact science” (Gibbs & Anor v. Arnold Son & Hockley [1989]), the literature suggests a lower level of tolerance by the users of valuation services. As contended above, a valuation which is within 5% of the sale or purchase price might be considered satisfactory and within 10% to remain acceptable for the valuation of a prime, CBD office investment property.

This effectively, contributes to an issue of confidence in both the valuer and his valuation by users of his services who may include private individuals, corporates and the investment community. Through such users, both the community and the capital markets in general develop a level of confidence in valuations which may be eroded by the incidence of significant differences between valuers.

For example, the valuation of Grosvenor Place in Sydney by two equally eminent practitioners was reported (Australian Financial Review, 3rd December, 1991) to have resulted in a difference of \$120 million or 16.6% in valuations at the same point in time and gained the attention of the financial press and the business community for an extended period after its initial report with damaging effects on community confidence in both the valuer and the valuation process.

It is contended that confidence in the valuer is an essential prerequisite for the valuation profession to achieve and maintain credibility, with any contributor to an erosion in confidence being potentially a contributor to the erosion of the credibility of both the valuer and the foundations upon which the valuation profession has been built. Whilst this is an issue for current practitioners, it is also of significance to those considering joining the valuation profession for whom a career in an industry in terminal decline may be anticipated to be relatively unattractive. If unaddressed and uncontrolled, such a trend could ultimately lead to the potential demise of the valuation profession.

Given that the investors in prime, CBD office investment property include a significant number of institutions who invest the superannuation and savings of the community at large and the investments of their shareholders and policy holders, such an erosion of confidence in valuers and valuations may potentially lead to the community at large being disadvantaged.

Similarly, whilst the inconsistency of capitalisation rate adjustment has a direct impact upon those institutions who invest in prime, CBD office investment property, such as through the level of returns achieved, validity of asset allocation decisions made and so forth, there is also an indirect impact upon the superannuants, savers, shareholders or beneficiaries who ultimately receive or are deprived of the benefits of the investment which provides a further impact upon the community at large.

Such issues were canvassed by the "Courier Mail" on 6th November, 1991 in an article entitled "Qld valuation standards fall to 'world low' ", which referred to investors being disadvantaged and development hampered by inadequate property valuations and called for valuations to be more forward thinking and analytical.

A positive issue arising from the current approach to capitalisation rate adjustment is contended to be the range of significant and important issues which it raises for debate and for further research, so keeping not only academia but also certain sections of the valuation profession gainfully employed in both qualitative discourse and quantitative analysis. However, whilst a significant section of the valuation profession may benefit from having its principal business as the provision of expert advice in litigation over this issue, this is not contended to be a benefit for the valuation profession as a whole.

The subjective, inconsistent, informal and heuristic approach to the adjustment of the capitalisation rate combines with the current methods of teaching practitioners to create a self perpetuating problem. Continued adoption by practice also perpetuates the defences for the method (as considered in Section 1.2.4, above) and contributes not only to sustaining the myth of property as a special asset class but also to insularity. Such insularity is contended to be manifest in such areas as the distinction between the valuer of property and the valuer of other asset classes, the distinction between property and the other asset classes and the discord currently prevailing between property valuation practice and the principles of finance, commerce and economic theory.

In summary, the inconsistency in the adjustment of the capitalisation rate not only provides an unacceptable level of variability but also contributes to uncertainty concerning the property asset class and a lack of confidence in it, compounds both positive and negative growth in property, constrains the smooth operation of the property market itself and impinges upon the assessment of its risk and return relativity to other asset classes, each of which are fundamental to the role of property as an investment medium.

Given the potential effects of such inconsistency and variability, the requirement for accountability by the valuer becomes heightened with the prospect of being called upon to justify their advice and the use of a method illogical in today's market becoming increasingly likely (Brown (1991)).

Having distilled, from the general problem area, the principal issue and identified a range of related, subsidiary issues, it is now proposed to briefly consider the rationale for addressing the issues raised.

1.3.3 Rationale For Addressing Issues Raised

The rationale for addressing inconsistency in the adjustment of the capitalisation rate is contended to be the benefits that may arise from the provision of objectively determined and consistent assessments of the capitalisation rate. Such benefits may include a reduction in the variability of capital value assessments and the production of more rigorous, defensible valuations. As such, two valuers with the same task and the same information at the same point in time may then be capable of selecting the same capitalisation rate.

Such consistency or reduction in variability would contribute to optimal decisions being made, the optimal allocation of resources occurring and the efficient impounding or processing of information which would render valuations a more effective proxy for prices. A more efficient and smoothly operating property market would result, though this may contribute to fewer opportunities for an investor to earn abnormal returns.

Greater objectivity and consistency and reduced variability would potentially be very beneficial for the valuer and the valuation profession, including the provision of better quality advice, the elimination of the need for defences, reduced litigation, reduced professional indemnity premiums, reductions in disadvantage to the community and an increase in the confidence of clients, the investment community and the community at large in both valuers and the valuation process, rendering the valuation profession more attractive as a career and conferring upon it a brighter future.

Furthermore, an increase in consistency and objectivity and decrease in variability would move property conceptually closer to the other asset classes and contribute to a realignment and reconciliation between valuation practice and finance, commerce and economic theory.

A closer and greater relativity between property and the other asset classes would contribute to an increased understanding of the risk and return characteristics and relativities of investment property as an asset class and the various sectors, sub-sectors and individual properties that will assist in investment strategy, asset allocation, portfolio management and stock/asset selection and so enhance performance. A better appreciation of the value of an asset would assist the investor to identify mis-priced assets and so earn abnormal returns more consistently.

Significantly, such a contribution to the better understanding of property in a capital markets context and upon capital markets terms would contribute to a better appreciation by non-property investors of the implications of illiquidity, heterogeneity and other property asset class characteristics, such that each may not necessarily then always be viewed negatively.

Ultimately, greater objectivity and consistency and lower variability will be an advance in the basis of valuation, rendering both the capitalisation of income method and the advice provided by the valuer more defensible such that the valuer becomes more accountable.

Given the widespread use of the capitalisation of income method of valuation, such an advance is contended to be essential to address the issues considered above. McIntosh (1993), Kishore (1995) and Newell and Barrett (1990) each note the extent of use of the method which, together with the role of the capitalisation rate to determine the terminal value within discounted cash flow valuation methodologies, renders the selection process likely to be of importance well into the future.

It is contended, therefore, that a clear rationale exists for addressing the principal issue of the level of variability in capitalisation rates arising from the operation of the current method of selection, with a range of identifiable benefits likely to arise therefrom.

1.3.4 Summary - Issues Arising From The Current Method Of Capitalisation Rate Selection

Having identified and established the general problem area, a range of issues arising from the current method of capitalisation rate selection were addressed in this Section.

The principal issue, for attention in this Thesis, was contended to be the level of variability in capitalisation rates arising from the operation of the current method of capitalisation rate adjustment adopted by valuers. Such variability was further contended to be attributable to the inconsistency arising from the subjective, informal and heuristic nature of addressing the determinants of the capitalisation rate within the current method adopted by valuers.

The extent of subsidiary issues related to the principal issue suggests the general problem area to be of significance and worthy of further attention. Having considered the rationale for and potential benefits of addressing the issues raised, it was concluded that the prospective continued use of the capitalisation of income method of valuation rendered attention to such issues both desirable and worthwhile.

Accordingly, having identified the principal issue for consideration from the general problem area and having regard to the subsidiary issues, it is proposed to now define the specific problem for investigation in this Thesis and consider the approach to be adopted to solve the nominated problem.

1.4 THESIS PROBLEM AND APPROACH TO SOLUTION

The following Section seeks to define the specific problem for investigation in this Thesis and outline the proposed approach to be adopted to the solution of the problem, as follows:

1.4.1 The Thesis Problem

1.4.2 Approach To Solving The Thesis Problem

prior to briefly summarising the contribution of the following Thesis Chapters to the solution of the problem.

1.4.1 The Thesis Problem

Having regard to the current method of capitalisation rate selection adopted by valuers (summarised in Section 1.2.5), the general problem area, the principal issue identified for consideration and consistent with the subsidiary issues considered above, the specific aspect of the general problem area for investigation in this Thesis may be defined as follows:

That the current method of capitalisation rate determination is subjectively based, informal, heuristic and lacks a framework which accords with property, finance, commerce and economic theory, so contributing to an unacceptably high level of variability in capitalisation rate adjustment between properties at a point in time.

Having articulated the specific problem to be considered within this Thesis (the “Thesis Problem”), the following Section outlines the proposed solution and the approach to be adopted to solving the Thesis Problem.

1.4.2 Approach To Solving The Thesis Problem

The approach to the solution of the Thesis Problem will be considered in four sections, being:

- 1.4.2.1 Proposed Solution
- 1.4.2.2 General Approach To Solution Of Thesis Problem
- 1.4.2.3 Thesis Approach To Solution Of Thesis Problem
- 1.4.2.4 Thesis Scope And Limitations

This is proposed to establish the basic framework of the Thesis, place the solution of the Thesis Problem in an academic context and identify the focus of the study.

1.4.2.1 Proposed Solution

It was contended in Section 1.3, above, that the variability in capitalisation rate selection could be attributed to the subjective, informal and heuristic approach to the determination of the capitalisation rate required for the application of the current method of adjustment by the valuer.

Accordingly, it is proposed that the replacement of a comparable evidence based, subjective, informal and heuristic approach to capitalisation rate determination by an objective and measured deterministic approach (based on rational and logical criteria which more closely simulate the approach adopted by investors to an appraisal of worth) would reduce or eliminate the reliance upon the interpretation of comparables and diminish the role of the valuer in adjustment and so contribute to a reduction in the level of variability in capitalisation rate adjustment between properties at a point in time.

Therefore, it is necessary to identify an objective and measured approach to capitalisation rate determination which, in order to solve the Thesis Problem, must also accord with property, finance, commerce and economic theory.

It is contended that the use of an econometric model, which is based on and so accords with property, finance, commerce and economic theory, would meet the criteria of objectivity and measurement required in that approach proposed to problem solution. Furthermore, an econometric model would achieve consistency and formality and so address the balance of the aspects identified in the Thesis Problem.

1.4.2.2 General Approach To Solution Of Thesis Problem

It is proposed to adopt a three step approach to identifying an objective and measured approach to capitalisation rate determination, which accords with property, finance, commerce and economic theory, as follows:

Step 1 The Review Of Literature Step

To review the relevant literature to identify existing econometric models for the determination of the capitalisation rate, between properties at a point in time, which accord with property, finance, commerce and economic theory and to investigate and collate those issues relevant to such determination in property, finance, commerce and economic theory;

Step 2 The Modelling Step

To model the determination of the capitalisation rate between properties at a point in time, based on and consistent with the findings of the review of literature, in three parts comprising:

- Part 1 The establishment of the data requiring collection and its collection;
- Part 2 The analysis of the data collected; and
- Part 3 The development of an econometric model for the determination of the capitalisation rate,

with an application of such a model to the Thesis Problem; and

Step 3 The Testing Step

To assess whether such a model solves the Thesis Problem, identify areas for further research and summarise that which may be concluded therefrom.

Having proposed the general approach to the solution of the Thesis Problem, this will be undertaken within a conventional academic framework which is outlined in the following Section.

1.4.2.3 Thesis Approach To Solution Of Thesis Problem

Consistent with a conventional academic framework, this study is founded upon a stated aim and stated objectives with a defined proposition and hypothesis, being undertaken with a specified focus and scope, acknowledging specified limitations and in accordance with a series of enunciated principles, each of which are detailed hereunder.

Having regard to the Thesis Problem and the general approach to its solution, proposed above, the aim of this Thesis (the “Thesis Aim”) may be summarised as:

To model those issues which contribute to capitalisation rate determination.

It is contended that the stated Thesis Aim may be achieved through the fulfilment of the following objectives (the “Thesis Objectives”):

To identify, analyse and evaluate existing econometric models for the determination of the capitalisation rate;

To identify, analyse the role and evaluate the significance of each of the issues that contribute to the current method of capitalisation rate determination;

To review property, finance, commerce and economic theory relevant to capitalisation rate determination;

To develop an econometric model for capitalisation rate determination which combines the current method and existing econometric models with property, finance, commerce and economic theory and the identified issues which contribute to capitalisation rate determination;

To examine the variability in the current method of capitalisation rate determination for prime, CBD office investment property in Sydney; and

To ascertain if such variability is reduced through the application of the developed econometric model,

each of which are consistent with the Thesis Aim.

In order to provide both an academic and practical focus to the Thesis, the Thesis Objectives need to be placed within the context of a proposition which is capable of investigation, an hypothesis which is able to be tested and an appropriately focussed area of investigation.

Having regard to the Proposed Solution (Section 1.4.2.1), the following proposition (the “Thesis Proposition”) is, therefore, proposed for investigation:

That the use of an econometric model will reduce the variability in capitalisation rate adjustment.

To determine the validity of the Thesis Proposition, the following hypothesis (the “Thesis Hypothesis”) is proposed for testing:

That the standard deviation of a sample of capitalisation rates calculated by an econometric model will be below that of a sample selected by property valuers using the current method of capitalisation rate determination.

In order to limit extraneous influences and so improve the quality of the test of the Thesis Hypothesis, it is proposed to focus the investigation upon institutionally owned, prime, CBD office investment property in Sydney only. Such a specific focus is conditional upon the following premises:

- that the office sector is generally the principal investment sub-sector, comprising a higher proportion of a balanced property fund than retail, industrial, residential, agricultural, leisure and other property sub-sectors;
- that prime, CBD office properties are generally of individually high values, comprise an acceptably large sub-sector by number of properties for analysis and are sufficiently distinct to contribute to a significantly greater potential variability in capitalisation rates between properties than may be found in the secondary CBD, suburban or metropolitan sub-sectors;
- that landmark, CBD office properties are few in number and the sub-sector would generally be likely to be valued using discounted cash flow methodologies with the capitalisation rate of lesser relevance; and
- that within the prime, CBD office sub-sector, investors will predominate as owners rather than owner occupiers, developers or other groups, providing an investment focus with an emphasis on institutional investors rather than corporate, charitable or other groups of investors.

Finally, it is also proposed that the Thesis seek to accord with each of the following enunciated principles (the “Thesis Principles”):

- to make a distinct contribution to knowledge of the subject, based on original investigation, research, review and criticism towards the study of property investment, the extension of the bounds of knowledge and addition to the body of knowledge;
- to demonstrate a capacity for independent research; and
- to maintain a practical application and industry relevance for the study's findings.

It is, therefore, contended that through the statement of the Thesis Aim and Thesis Objectives, definition of the Thesis Proposition and the Thesis Hypothesis, specification of the Thesis focus and enunciation of the Thesis Principles, the foundations for rigorous academic research have been laid upon which the following Chapters may build.

1.4.2.4 Thesis Scope And Limitations

A significant proportion of the limitations of this Thesis (the “Thesis Limitations”) are contended to be attributable to the focus of the Thesis (“Thesis Scope”), which may be defined as comprising the following:

- the capitalisation rate
- adjustment process
- at a point in time
- between a limited number of properties
- which are institutionally owned
- prime
- CBD
- office
- investments in
- Sydney.

Additionally, such a capitalisation rate is a function of an interpretation of a past market pricing process, such that it comprises an expression of what prices were rather than what prices are or should be.

Within the Thesis Scope, therefore, it is proposed to endeavour to develop a deterministic approach based on logical and rational criteria to permit the valuer to simulate that approach which may be adopted by the generic investor in the selection of a capitalisation rate through the appraisal of worth from first principles, so potentially contributing to a reduction in inconsistency.

The Thesis Limitations, therefore, result in the following aspects of the capitalisation rate selection process not being considered:

- the assessment of gross and net income;
- the analysis of comparable sales;
- over-time issues;
- adjustment between large numbers of properties in a sub-sector or between sub-sectors;
- application to corporate, charitable or other non-institutional owner groups;
- application to landmark or secondary office property;
- application to suburban or metropolitan office property;
- application to retail, industrial, residential, agricultural, leisure and other property sub-sectors;
- application to owner-occupier, developer and other groups;
- application to cities other than Sydney.

Given that the Thesis Scope focus is upon prime, CBD office investments and comparative pricing between individual properties, it is not proposed to consider the related issues of whether such property is correctly priced relative to other types of property nor whether property is correctly priced relative to other asset classes. Similarly, the relativity of a valuation of such property to an estimation of worth to a specific investor and the respective capitalisation rates arising therefrom will not be further considered, specifically, herein.

Furthermore, the focus on a point in time limits the applicability of the findings to that state of the market prevailing at that time only.

Finally, whilst not seeking to provide an exhaustive list, the following Thesis Limitations are also acknowledged:

Limitations Of Statistics

Given the Thesis Scope, the size of the sample may be limiting with only 46 Grade A, CBD office investment properties in Sydney and only 39 valuers regularly involved in such a specialism.

The limitations of property market efficiency may also prove challenging with limited, publicly available information, few sales at a point in time, the confidential nature of property valuations at a point in time and the dearth of available, objective, quantitative historic and time series data on property which is rigorously based and reliable.

The statistical analysis of property data is generally problematical and statistical limitations commonly encountered.

Limitations Of Time

The general problem area of inconsistency in the outcomes from the current method of capitalisation rate selection, between properties at a point in time, may be expected to contribute an inherent limitation in data analysis and the achievement of accurate and defensible findings.

Further, the wide range of concepts underlying the capitalisation of income method of valuation (as considered in Section 1.1.2) may prove challenging to overcome and so may adversely impact the quality of the analysis and resultant findings. Such a limitation may be addressed by the adoption of a range of assumptions for data collection but such an approach may then contribute a further limitation in itself.

Limitations Of Findings

As is often the case for an approach to academic research such as is adopted herein, the constraints on the econometric model limit its direct applicability to that point in time and that particular sub-sub-sector upon which it is based. Whilst the general principles of the findings remain of significance across sub-sub-sectors and over time, the specific applicability of the model is limited.

Limitations Of Previous Research

It is contended that the possible absence of a formal, deep and developed body of property theory and literature may be a limitation for this Thesis. Compared to the finance, commerce and economic disciplines, property is a relatively new field for advanced research which has only recently begun to be investigated. Accordingly, though numerous property texts, journals and contributions by practitioners to property theory exist, the body of advanced academic and quantitative research is expected to be relatively limited.

Furthermore, given the limitations of property literature generally, it is anticipated that a significant limitation may comprise an absence of previous research into the capitalisation rate and the capitalisation of income method of valuation.

Such property theory and property literature as may be found may also be anticipated to be potentially limited by a high level of independence, possibly having been developed in isolation of research into finance, commerce and economic theory and practice.

Limitations Of Practitioner Dependence

As is apparent from the literature considered above, the role of practitioner opinion intuition and experience in the capitalisation of income method of valuation is potentially very

significant. Accordingly, the importance of and dependence upon the perceptual nuances of individual practitioners may be found to be a challenging Thesis Limitation.

Having established the Thesis Scope, it will be interesting to observe if the Thesis investigation and research, below, verifies the validity of those Thesis Limitations identified above.

1.4.3 Summary - Thesis Problem And Approach To Solution

With regard to the general problem area, the principal issue identified for consideration and consistent with the subsidiary issues considered, the specific aspect of the general problem area for investigation in this Thesis was defined as the Thesis Problem. This Section then sought to outline the proposed solution and the approach to be adopted to solving the Thesis Problem, as defined.

Through analysis of the Thesis Problem, the proposed Thesis solution was identified as the use of an econometric model, which is based on and so accords with property, finance, commerce and economic theory, to contribute to a reduction in the variability of capitalisation rate selection between properties at a point in time. Having identified the Thesis Problem and proposed solution, the focus of the research was specified to be institutionally owned, prime, CBD office investment property in Sydney.

A three step general approach to solution was then proposed comprising:

- Step 1 The Review Of Literature Step;
- Step 2 The Modelling Step, comprising:
 - Part 1 The establishment of the data requiring collection and its collection;
 - Part 2 The analysis of the data collected; and
 - Part 3 The development of an econometric model for the determination of the capitalisation rate.
- Step 3 The Testing Step,

to assess whether the proposed solution to the Thesis Problem is effective.

The general approach was then framed within the context of a conventional academic approach comprising a six chapter Thesis with the Thesis Aim and Thesis Objectives stated, which may be summarised as follows:

Thesis Aim

To model those issues which contribute to capitalisation rate determination.

Thesis Objectives

To identify, analyse and evaluate existing econometric models for the determination of the capitalisation rate;

To identify, analyse the role and evaluate the significance of each of the issues that contribute to the current method of capitalisation rate determination;

To review property, finance, commerce and economic theory relevant to capitalisation rate determination;

To develop an econometric model for capitalisation rate determination which combines the current method and existing econometric models with property, finance, commerce and economic theory and the identified issues which contribute to capitalisation rate determination;

To examine the variability in the current method of capitalisation rate determination for prime, CBD office investment property in Sydney; and

To ascertain if such variability is reduced through the application of the developed econometric model,

being consistent with each other and with the Thesis Proposition and Thesis Hypothesis as defined. The focus of the Thesis was identified, the Thesis Principles enunciated, the Thesis Scope defined and the Thesis Limitations acknowledged as the foundations for rigorous academic research.

Accordingly, the above Section establishes the conventional framework of the Thesis and places both the defined Thesis Problem and the proposed solution firmly and clearly within a rigorous, academic context. The following Section seeks to outline each of the Chapters of the Thesis which, respectively, clad the framework of the Thesis and contribute towards the solution of the Thesis Problem.

1.5 OUTLINE OF THESIS

Having established the Thesis Problem, it is proposed to consider the approach to solution through investigation of the Thesis Proposition and testing of the Thesis Hypothesis in the following Chapters:

Chapter 2	Review Of Literature
Chapter 3	Algebraic Modelling And Data Collection
Chapter 4	Data Analysis
Chapter 5	Econometric Development Of Model, Testing And Results
Chapter 6	Summary, Areas For Further Research, Conclusions And Policy Recommendations

each of which will be briefly outlined, sequentially, below.

1.5.1 Chapter 2 - Review Of Literature

Chapter 2 comprises the first step in the proposed three step sequential approach to addressing the Thesis Problem, being the review of literature step.

The Chapter seeks to review the wide range of literature relevant to this Thesis with a particular focus upon the determination of the capitalisation rate, including the identification of precisely that which is to be adjusted for and exactly how to make an adjustment for it.

It is proposed to endeavour to ascertain whether a model of capitalisation rate determination, between properties at a point in time, has already been developed that accords with property, finance, commerce and economic theory and which may be used to solve the identified problem, though it is anticipated that a robust model is unlikely to be found.

If such an existing model cannot be identified, it is proposed to seek to investigate and collate, from property theory, those issues or determinants to which the valuer has or should have regard when undertaking the adjustment of a capitalisation rate from analysed sales evidence and to then endeavour to place these within a framework of finance, commerce and economic theory.

Having identified the relevant issues or determinants from both property theory and from finance, commerce and economic theory, it is then proposed to endeavour to combine the respective issues or determinants to derive and propose theoretically defensible, potentially explanatory equations for the determination of the capitalisation rate for further consideration in subsequent Chapters.

1.5.2 Chapter 3 - Algebraic Modelling And Data Collection

The second step in the proposed three step sequential approach to addressing the Thesis Problem comprises the modelling step which will be undertaken in three parts.

Taking the theoretically defensible, potentially explanatory equations for the determination of the capitalisation rate derived from property theory and from finance, commerce and economic theory, it is then proposed to endeavour to combine these into a single, potentially explanatory equation which reconciles with all bodies of theory and with all principal aspects of the literature.

Having established a single, potentially explanatory equation, the first part of the modelling step seeks to establish the data required to be collected to quantify such an explanatory equation and to consider the use of a Practitioner Survey to source the principal data so required. Such a Practitioner Survey may also be used to objectively investigate, identify and possibly confirm the method of capitalisation rate selection currently in use in practice together with various aspects of the capitalisation rate adjustment process.

1.5.3 Chapter 4 - Data Analysis

Following the conduct of the Practitioner Survey, the second part of the modelling step proposes to analyse the data collected to ascertain the current method of capitalisation rate selection and adjustment for comparison to the findings of the review of literature in Chapter 1. The data will also be analysed to verify the validity of each of the assumed theoretical principles underlying the explanatory equation, to specify the variables for the explanatory equation and to optimise the data set for use in econometric model development.

1.5.4 Chapter 5 - Econometric Development Of Model, Testing And Results

Principally using the data collected from the Practitioner Survey, the third and final part of the modelling process seeks to endeavour to develop an econometric model, through cross sectional multiple regression analysis, based on the single, potentially explanatory equation for the determination of the capitalisation rate.

This will then complete the modelling process, which comprised the second step in the proposed three step sequential approach to addressing the Thesis Problem. The third and final step comprises the testing step.

Having developed and quantified such a model, it is then proposed to use the model to investigate the Thesis Proposition through testing of the Thesis Hypothesis to determine if the model solves the Thesis Problem and then to report the findings therefrom.

1.5.5 Chapter 6 - Summary, Areas For Further Research And Conclusions

Having determined if the model solves the Thesis Problem, the findings of the entire Thesis will then be summarised, areas for further research beyond the scope of this Thesis proposed and conclusions drawn therefrom.

1.5.6 Summary - Outline Of Thesis

Having identified the development and application of an econometric model as the solution to the Thesis Problem, the respective Chapters are contended to comprise a logical and sequential approach to the investigation of the validity of the proposed solution which is consistent with a conventional academic framework.

The investigation of the Thesis Proposition through testing of the Thesis Hypothesis is contended to be a rigorous and formal approach to the solution of the Thesis Problem which includes the collection of original data, subsequent statistical analysis and econometric modelling, so conferring defensibility upon the findings thereof.

Through the approach proposed in the above Chapters, it is contended that the Thesis Aim may be achieved and the Thesis Objectives fulfilled with each being in accordance with the Thesis Principles enunciated.

1.6 SUMMARY, AREAS FOR FURTHER RESEARCH, CONCLUSIONS AND POLICY RECOMMENDATIONS

The following comprises a brief summary of the findings of this introductory Chapter, the identification of those areas worthy of further research and the conclusions that may be drawn therefrom.

1.6.1 Summary

Having placed the capitalisation of income method of valuation within the context of static valuation methodologies, this Chapter outlined the construction of the method and its operation in practice. It was contended that the capitalisation rate was a key variable within the capitalisation of income method of valuation. The current method adopted by valuers for its selection was identified as being comparable based market pricing and comprising the adjustment of capitalisation rate evidence, derived from the analysis of identified comparable sales transactions, to accord with the subject property being valued, but with little apparent guidance as to the criteria or determinants upon which such determination or adjustment should be based.

Literature concerning the adjustment and determination process was reviewed and found to be qualitative, limited and lacking in analytical depth. The adjustment process was contended to be a subjective, informal and heuristic determination process, having evolved through practice and so being independent of and unlikely to accord with theory, thus contributing to inconsistency in the selection of capitalisation rates by valuers. The general problem area was, therefore, identified and established.

The limitations of the method and the rate were found to have been regularly criticised within the literature and a range of defences raised by valuers to rationalise each were catalogued. A level of inconsistency of outcomes was found to be both expected and acceptable, with a body of law and lore contended to support a permissible margin of inconsistency of upto 10% for the valuation of a freestanding, rack rented, prime, CBD office investment property.

Accordingly, the principal issue arising from the general problem area was contended to be the level of variability in capitalisation rates selected by the application of the current method. A range of subsidiary issues arising were also considered and a rationale for addressing the issues raised was proposed together with a consideration of the benefits which may arise therefrom.

With regard to the general problem area, the subsidiary issues and the principal issue identified, a specific Thesis Problem was defined and an approach to its solution within a conventional, rigorous academic thesis framework outlined. Having proposed that the adoption of an objective and measured approach to capitalisation rate determination (based on rational and logical criteria which more closely simulate the approach adopted by investors to an appraisal of worth), between properties at a point in time, would contribute to a reduction in the level of variability, it was contended that the use of an econometric model which is based on and so accords with property, finance, commerce and economic theory would facilitate such an approach and so solve the Thesis Problem.

A three step approach to the solution of the Thesis Problem was proposed, comprising, firstly, a review of the relevant literature, secondly, an application of the findings to the modelling of the determination of the capitalisation rate between properties at a point in time and thirdly, an assessment of whether such a model solves the Thesis Problem.

With the specification of a consistent Thesis Proposition and Thesis Hypothesis together with a Thesis Aim, Thesis Objectives, Thesis Principles and statement of Thesis Scope and Thesis Limitations, the proposed approach was placed within a conventional academic framework to ensure rigour. Finally, the cladding to such a framework was outlined through a brief overview of each of the respective Chapters of the Thesis which were contended to provide a rigorous academic approach to the solution of the Thesis Problem.

1.6.2 Areas For Further Research

In addition to the three step approach proposed to solve the Thesis Problem, a variety of other aspects of the determination of the capitalisation rate are worthy of further research.

The literature suggests that the determination of the capitalisation rate is a process of mentally juggling a vast range of different considerations, but does not provide any objective research findings to confirm or refute this.

Further, the source of comparable evidence for the valuation of office property would appear to be suggested by the literature to be only other office property, though the literature offers little guidance as to the extent of differences permissible between the various classifications of office property before each cease to be relevant for use as comparable evidence. Similarly, are sales of other types of property relevant for consideration?, should the views of investors or agents active in the market also be

considered? and should activity in other asset classes such as bonds and equities be considered? - the literature suggests not.

Whilst reliance on comparable sales evidence is paramount within the literature, attention does not appear to be given to how the valuer can be sure that the evidence adopted is completely correct, that the sale has been accurately reported and that it has been correctly and consistently analysed. A slight error in this process could result in a compounding error in the selection of the capitalisation rate. The traditional teaching texts attribute surprisingly little attention to issues of information processing in the context of the valuation of investment property.

The literature also appears to suggest that the adjustment of evidence process is either retrospective or current time with no indication of how this might be reconciled with a current time or expectational valuation. It is contended that regard to future conditions should be a relevant consideration in the selection of a capitalisation rate for the valuation of a property in current time, as sales evidence merely reflects what has already happened in the market rather than what may happen, which is more likely to be the principal interest of investors when pricing property.

The selection of the capitalisation rate by the subjective mental adjustment of data derived from comparable sales evidence is generally accepted within the literature, with few references to the use of sensitivity or probability analysis and an apparent level of rounding to the nearest 0.25% increment prevailing for capitalisation rates. The literature does not, however, appear to comment on whether such approaches are actually adopted in current practice.

It is contended that the literature reveals two very significant flaws in the process advocated for the selection of the capitalisation rate for use in the valuation of a prime, CBD office investment property. Firstly, the literature does not address what the valuer should do during periods of sustained inactivity in the market (as have regularly occurred during the last five years in the Sydney market) and, secondly, a detailed consideration of the operation of the adjustment process was not identified in the literature reviewed, though the requirement to adjust was almost mandatory. Exactly which determinants to adjust for and exactly how to make the adjustment did not appear to be considered within the literature reviewed but are contended to be absolutely fundamental to the selection of the capitalisation rate using current methodology.

1.6.3 Conclusions

This Chapter reviewed issues concerning the capitalisation of income method of valuation, considered and established the general problem area, identified the particular aspect of the problem to be investigated and proposed a solution to the problem for subsequent consideration in this Thesis.

The current method for the determination of the capitalisation rate adopted by valuers was found to be sub-optimal, being subjective, informal, heuristic and lacking an accord with theory. This was found to contribute to an inconsistency or variability in capitalisation rate adjustment and selection that may exceed an acceptable level, being an issue contended to be of significance for which the solution is worthy of pursuit.

Having stated the issue within the framework of an academic thesis, a three step approach to the solution of the Thesis Problem was proposed. Accordingly, the following Chapter forms the first of the three nominated steps and comprises a review of relevant literature to identify existing econometric models for and to investigate and collate those issues relevant to the determination of the capitalisation rate, between properties at a point in time, which accord with property, finance, commerce and economic theory.

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