Part Two
Market Valuation Models

Chapter 4
The Theory and Practice of Conventional Appraisal Techniques

4.1 Introduction

The basis of accepted techniques for the appraisal of property investments evolves from the attitudes and perceptions of those who carry out the appraisals and those who own and occupy the properties being appraised. Their influences range from the concepts and techniques taught to them in the formative years of their careers to the market conditions that apply at the time of the valuation and their perceptions of future changes in those conditions.

They will also be influenced by the role of the appraisal. In the UK, valuation usually requires the assessment of an exchange value or market value. Valuations are used in place of the pricing mechanism present in securities markets; and it is only relatively recently that other types of value – and valuation – have been discussed in detail. Part Two of this book therefore deals exclusively with the assessment of market value and critically reviews the approach that has evolved in the UK over a considerable number of years. Valuation has been the principal focus of the main professional institution dealing with real estate in the UK, the Royal Institution of Chartered Surveyors (RICS). However, for a long time valuation was seen as a technical subject to be learnt and passed on from practitioner to practitioner. Although there were a few full-time educational courses in the UK, it was only from the 1970s onwards that real estate became a mainstream degree subject in a number of universities and more academic principles were brought to bear upon the topic.

The original interest in valuation as a more theoretical discipline was initiated by the property crash of 1973. The more violent falls in value in 1990 gave renewed impetus to the call for valuers to modernise their methods and create a defensible, rational approach. This chapter reviews the evolution of

the conventional valuation technique (examined in greater detail in the first and second editions of this book), sets out the basic approaches currently adopted by practitioners and critically examines their usefulness.

4.2   The evolution of conventional techniques

4.2.1   *The changing perception of investors*

The conventional techniques for assessing market value have evolved over a significant time period and have been adapted and amended as circumstances change. Although Trott (1980: 1) suggested that 'for many decades the conventional methods of investment valuation were accepted as logical, practical and seemingly immutable', this was re-examined and shown to be untrue, in the UK at least, in the years that followed, with our first edition detailing the criticisms in book form for the first time.

Techniques can be seen to bend and change as markets evolve. It is therefore virtually impossible to understand the details of valuation methods without an examination of how these methods evolved, and without considering the context within which the changes took place. In the first edition, a detailed examination of how valuation techniques evolved during the twentieth century was undertaken. This examination was based upon primary research into the behaviour of property values in central Nottingham, a major urban centre in the UK (Crosby, 1985), and a review of the basic textbooks of the era.

The economic context of the model remained virtually unchanged until the 1960s. The key issue explaining this was the absence of inflation and more importantly expectations of inflation (and therefore rental growth) until the late 1950s. In the first edition, we showed that basic economic indicators suggested that there was no or little perception of the damage inflation could cause to investment returns, if it was not specifically included in pricing models; and as a result it was not explicitly included in those models.

Table 4.1 sets out a number of local property market indicators for Nottingham City Centre retail, a provincial city situated in the East Midlands region of the UK. This shows that rental values grew by about 2.5 times between 1910 and 1946 and that inflation was also almost exactly the same, growing by 2.51 times in the same period. This represents an annual growth rate of 3.65%. The average yield on government bonds was 3.8%, giving a real return of virtually zero. At the same time property capitalisation rates for retail properties, which were also growing in value at approximately the inflation rate, averaged 5.8% (a 2% risk premium over gilts). An annual rent review structure would have enabled property investors to obtain returns of over 9%, a risk premium above gilts of 6.5%. But this

Table 4.1 Nottingham City Centre, retail property, rents, inflation and initial yields, 1910–1960.

Years	Prime rent		Average rent index (2)		Retail prices index (RPI) (3)	Prime initial	
	1910 = 100	1946 = 100	1910 = 100	1946 = 100	1913 = 100	yields (4)	Gilts (5)
1910	100.0	43.3	100.0	38.2	94	5.0	3.1
1911	96.9		96.0		95	5.0	3.2
1912	95.4		92.9		98	5.0	3.3
1913	95.4		91.6		100	4.5	3.4
1914	95.4		91.6		101	6.5	3.3
1915	95.4		91.6		121	—	3.8
1916	95.4		91.6		143	—	4.3
1917	96.9		94.6		173	—	4.6
1918	99.2		99.3		199	6.75	4.4
1919	101.5		104.4		211	5.0	4.6
1920	104.6		109.8		244	5.0	5.3
1921	106.9		114.8		222	4.5	5.2
1922	109.2		120.5		179	5.5	4.4
1923	111.5		125.6		171	6.0	4.3
1924	118.5		132.5		172	6.25	4.4
1925	123.1		138.7		173	6.0	4.4
1926	127.7		148.8		169	5.5	4.6
1927	133.8		157.6		164	5.0	4.6
1928	140.0		168.4		163	4.0	4.5
1929	147.7		180.1		161	5.0	4.6
1930	153.8		198.7		155	6.0	4.5
1931	135.4		159.9		145	9.0	4.4
1932	135.4		158.9		141	8.0	3.7
1933	135.4		158.2		137	6.5	3.4
1934	135.4		160.3		138	6.5	3.1
1935	135.4		161.9		140	6.0	2.9
1936	135.4		166.7		144	6.0	2.9
1937	143.8		177.8		152	5.5	3.3
1938	152.3		187.2		153	5.0	3.4
1939	146.2		181.5		158	5.0	3.7
1940	140.0		172.1		179	7.5	3.4
1941	140.0		170.0		197	—	3.1
1942	140.0		170.0		210	—	3.0
1943	140.0		170.0		217	—	3.1
1944	140.0		170.4		222	7.0	3.1
1945	161.5		192.8		226	6.0	2.9
1946	230.8	100	262.0	100	236	5.0	2.6

Continued

Table 4.1   (Continued)

Years	Prime rent		Average rent index (2)		Retail prices index (RPI) (3)	Prime initial yields (4)	Gilts (5)
	1910 = 100	1946 = 100	1910 = 100	1946 = 100	1913 = 100		
1947		105.6	108.9	249		4.5	2.8
1948		110.2	116.0	268		4.4	3.2
1949		111.9	124.1	275		4.5	3.3
1950		114.1	131.4	283		4.5	3.5
1951		116.7	138.0	311		4.5	3.8
1952		123.3	146.3	338		5.0	3.2
1953		139.8	160.9	349		5.5	4.1
1954		158.6	170.0	355		5.25	3.8
1955		179.8	198.3	371		5.0	4.2
1956		200.0	224.5	389		5.5	4.7
1957		212.0	253.7	404		5.5	5.0
1958		222.6	276.5	416		5.5	5.0
1959		233.4	293.3	418		6.0	4.8
1960		242.7	308.3	422		6.0	6.4

Part Two

opportunity was spurned by property investors, whose fixation with security of income appeared to override their desire for return, as they attempted to tie tenants to very long leases without rent revision. Leases of 21, 42 and 63 years with no or very infrequent rent reviews were not uncommon for good-quality retail tenants in good locations, and this practice turned property into a fixed-income bond investment with a 2% risk premium over gilts.

The obvious question to ask is: why, in the face of such basic evidence, did investors still invest in bonds, which were giving no real returns, and turn property investments – an opportunity to hedge against inflation – into another form of fixed-income bond?

Crosby (1985) concluded that investors had not recognised the harmful effects of inflation on fixed incomes because of the cyclical nature of the inflation and the numerous shocks that had occurred in the first half of the twentieth century. These shocks may have been seen as the only cause of inflation, and investors assumed that it was not the 'natural' state of affairs. The great war of 1914–1918 had seen prices double, while in the 1920s they fell by well over one-third. During World War II prices again rose by over a third. So inflation appeared to be shock-related.

It was only towards the end of the 1950s that bond yields started to increase above their long-term average, and more significantly above the

yields on equities, reaching levels of around 5% in the late 1950s and 6.4% by 1960. This suggests that the effects of inflation were beginning to be taken seriously. Ironically, inflation, having peaked in 1951 at 9.9%, fell back through the 1960s and in 1959 and 1960 price rises were as weak as 0.5% and 1%, respectively. But the key point, as always in investment, was to do with expectations. If investors had begun to think that inflation (and rental and dividend growth) was the norm, then they would pay less for fixed-interest investments like bonds and more for property and equities – and they did with the introduction of the reverse yield gap in 1960. In property markets, yields remained close to long-term averages and fluctuated between 4.4% and 6% in the period 1946–1960. However, retail rents in Nottingham rose by between 2.5 and 3 times in the same period. In hindsight, 1960 may be seen as a watershed in the perception of investors in the UK. After 1960, yields in bond and equity markets and other interest rates, as well as lease structures in property, started to reflect anticipated inflation. From Table 4.1 we can see that prime property yields fell below gilt yields for the first time in 1960, and from other empirical evidence we can observe the shortening of the period between rent reviews from 21 to 14 years, then to 7 years, and finally to 5 years in the early 1970s, where (despite being subjected to occasional pressure to move to 3 years) it has remained to the present day (Crosby, 1985).

Between 1960 and 1990, bond yields and short-term fixed-interest rates continued to rise as a result of inflation. Nonetheless, apart from a number of years in the 1970s when inflation peaked at 25% in 1974 and rose again to above 15% in 1979 and 1980, interest rates and bond yields have been above inflation, reflecting (as they should) an expected real return.

In addition to the reduction in the rent-review patterns indicated earlier, the post-1960 era saw the development of the institutional lease in the UK. This lease comprised a 20–25 year term with no breaks, imposed the liability for all repairs and insurance upon the tenant, had periodic rent reviews to market rent every 5 years and reviews were upwards only. This created a secure long-term cash flow, but also gave the landlord the ability to participate in any market increases and protect the income against falls in real value caused by inflation. Despite increasing flexibility in leases since 1990 with shortening lease terms and the introduction of tenant breaks, UK leases are still some of the longest in the world (Crosby *et al.*, 2005).

As property investments could now allow participation in growth while fixed-income investments such as bonds could not, interest rates and bond yields rose above property yields in 1960, and this reversal of the yield gap between fixed income and property's equity-type cash flows (those which can participate in value change) became a fixture of interest rate structures during the high inflationary period of the 1970s and 1980s, and continued into the 1990s.

Part Two

To summarise, in the post-1960 era the pricing of investment assets appeared to reflect the impact of inflation, and the initial yields of investments which could adjust their cash flow remained fairly constant, while those that could not (fixed-income assets) rose significantly to counter the inflation rate. Unfortunately, valuation techniques did not change, and the approaches that had served valuers in the pre-1960 era continued to be used – and are still used – in practice.

The next section of this chapter sets out the conventional model and critically examines it in the light of modern economic conditions.

4.2.2 Historical application of the basic valuation model

We now consider the valuation of three main property 'types': a freehold interest let at its market ('rack') rental value; a freehold interest let at a rent which is below market rental value (a 'reversionary freehold'); and a leasehold interest. The approach to these standard types can be identified from historical texts and cases as follows.

Example 4.1 Rack-rented freehold

We assume a long gilt redemption yield of 4.25%. The net rent passing and estimated rental value (ERV) is £21,000 p.a.; the 'all-risks yield' (capitalisation rate) is estimated to be 6.25% from comparable property sales and reflects a 2% risk premium above bonds.

ERV	£21,000	
YP perp. @ 6.25%	16.0000	
Valuation		£336,000

Example 4.2 Reversionary freehold

As Example 4.1, but the rent passing is £10,000 p.a. and there are 2 years to go to the end of the lease.

Rent passing	£10,000		
YP 2 years @ 6.25%	1.8270		
		£18,270	
Reversion to ERV	£21,000		
YP perp. @ 6.25%	16.0000		
PV 2 years @ 6.25%	0.8858		
		£297,633	
Valuation			£315,903

Example 4.3   Leasehold

This is the leasehold interest that derives from Example 4.2.

Rent received or rental value	£21,000	
Less rent paid	£10,000	
Profit rent	£11 000	
YP 2 years @ 6.25%	1.8270	
Valuation		£20,097

This represents the simplest forms of the approach. Norris (1884) suggests that (as in the preceding examples) the value of the reversionary freehold and lease-hold interests are 'such that the sum of the two is always equal to the total value of the freehold in perpetuity'. In this case £336,000 = £315,903 + £20,907.

This basic model was adapted and refined during the first part of the twentieth century. The development that took place was fully set out in the first and second editions of this text, and we do not propose to repeat that material here. However, we illustrated that at a particular point valuers started to apply different yields or capitalisation rates within the two parts of the basic reversionary model (known as 'term' and 'reversion') because of notions of different levels of risk. Where the rent was contracted under the lease, valuers assumed it had less risk attached, and this was often on account of the rent being below rental value due to growth since the last rent revision date. With over 3% average inflation and long terms between rent revisions, these gaps could become substantial, and valuers applied lower rates to the secure term income than to the fuller reversionary income, which was based on the full or rack rental value. As further justification, the rental value was an estimate that could prove to be inaccurate, while rent was a known and contracted figure with no variations or uncertainties apart from the possibility of default.

From the 1970s onwards, with the virtually universal introduction of upward-only rent reviews within long leases, valuers also began to consider the difference in security of the contracted rent over the entire lease period and the expected uplift at rent review. This resulted in valuers slicing up the reversionary property cash flow horizontally rather than vertically, and applying lower capitalisation rates to the hardcore, layer or bottom slice than were applied to the top slice of income. This practice was also the product of government intervention in the property market in the early 1970s when, as an anti-inflationary measure, a rent freeze was imposed upon commercial property owners, with the result that rent increases could not be applied. The right to receive the existing rent became much less risky than any potential value from future increases, even if those expected increases were based on existing rather than future rental values.

Part Two

The introduction of horizontal as well as vertical slicing of cash flows and the use of different yields within the different parts of the valuation introduces a number of variations within the general conventional theme set out in the preceding text, and these will be examined later in this chapter.

Leaseholds were subject to greater changes in the techniques applied. Leasehold interests are perceived as wasting assets, as all value is normally extinguished at the end of the lease. To take account of this, valuers quite reasonably felt the need to down-value leaseholds relative to freeholds. The discounting process includes an element for replacement of capital, and so simple capitalisation of a finite cash flow is enough to reflect the wasting nature of the leasehold asset (Baum *et al.*, 2006), but valuation practice evolved to go further than this, first by adding an additional risk premium to the capitalisation rate and second by introducing the concept of a sinking fund invested at rates of interest available from banks to replace the asset value, thereby producing a 'dual-rate' approach. As this theory and practice progressed, the sinking-fund element was assumed to be paid for out of taxed income, and so profit rents were valued assuming that a chunk of the profit rent would have to be invested in a risk-free investment out of taxed income. The dual-rate approach, using capitalisation rates at 1% or 2% above those applied to freeholds of the same property type and in similar locations, became the mainstay of leasehold valuations throughout the twentieth century, and in the 1960s tax adjustment also became the norm.

Example 4.3 would therefore be amended to the following:

Rent received or rental value	£21,000	
Less rent paid	£10,000	
Profit rent	£11,000	
YP 2 years @ 7.25/2.5% tax at 40%	1.1166	
Valuation		£12,283

The valuation is reduced from £20,097 to £12,283, instantly creating a gap between the value of the freehold in possession and the sum of the values of the freehold subject to the lease and the leasehold interest, or marriage values. Whether marriage values actually do or should exist on this basis is open to debate, but there is no doubt that shrewd property investors of the 1980s and 1990s exploited this poor application of technique to their advantage.

4.3   Rationale of the pre-1960 appraisal approach

Before 1960, valuers could be excused for assuming that commercial property was fundamentally a bond investment offering security of income. Negotiations for new leases with tenants were focused on securing their

occupation at the market rent for as long as possible with no reviews and tenants were even offered options to renew at the same rent. There appeared to be little concern that a fixed income would decline in real value in an inflationary environment.

If we consider the valuation of three main property 'types', the logical approach in the pre-inflation perception era would be to assume no value changes in value in the future. Therefore, any increases in cash flow in the future would be caused by differences between the rent passing and current market rental values with no consideration given to whether rental values might change in the future. The discount rate would be based on the risk-free rate of return, given by yields on UK government gilt-edged bonds, plus a risk premium for the additional default risk of tenants compared with the government, plus any perceived generic property risks. In the period up to 1960 a positive yield gap between gilt yields and property existed, in the order of 1.5–2%. It was this comparison that led to 2% being widely and misleadingly quoted as the property risk premium in the 1980s and 1990s, despite the nature (relative risk) of the two investments having changed as soon as property capitalisation rates moved below those of gilts in the 1960s.

To illustrate, the valuation of a rack-rented freehold shop property in (for example) 1950 would have been undertaken on the basis of a capitalisation of the rent at the appropriate yield. For example, the prime shop yield in Nottingham was estimated to be 4.5% at that time (Table 4.1). Assuming a rent of £4,000 p.a., the calculation based on direct comparable analysis would be as shown in Example 4.4.

Part Two

Example 4.4   Fully let freehold

ERV	£4,000
YP perp. at 4.5%	22.2222
Valuation	£88,889

The landlord would expect the rent to be fixed for 21 years at least, possibly 35 or 42 years, if the tenant represented a very good covenant. The valuation has a logical basis if viewed in the light of the following propositions:

a. Property is more risky and less liquid than fixed-interest government securities (2.5% Consols), which yielded around 3.5% to redemption at that time.

b. There is no assumption of an upward trend in rents. The likelihood of a fall in rents is just as possible as an increase, and therefore the objective of fixing a rent for as long as possible is seen as a positive advantage to minimise the risk of a fall in income. An increase in rent is not necessary, as the initial yield is already 1% above the yield on fixed-interest stock.

Example 4.4   (Continued)

These assumptions are consistent with the previous analysis of investors' perceptions prior to the movement towards the reverse yield gap which took place later in the decade. The valuation is a simple discounted-cash-flow (DCF) valuation (albeit conveniently presented) as developed in Chapter 3.

To make this comparison clearer, the prospective explicit cash flow can be constructed. Assume that the rent is fixed for 21 years (and that the market would expect another 21-year lease to be granted at the end of the current lease) and that rental values are not expected to show a long-term upward or downward trend. Gilts yields are at 3.5%. A DCF valuation with a 1% risk premium would be as shown in Table 4.2.

Table 4.2   Fully let freehold cash flow.

Years	Rent (£)	YP 21 years @ 4.5%	PV @ 4.5%	Present value (£)
1–21	4,000	13.4047	1.0000	53,619
22–42	4,000	13.4047	0.3968	21,275
43–63	4,000	13.4047	0.1574	8,442
64–84	4,000	13.4047	0.0625	3,350
85–105	4,000	13.4047	0.0248	1,329
106–126	4,000	13.4047	0.0098	527
127–147	4,000	13.4047	0.0039	209
148–168	4,000	13.4047	0.0015	83
169–189	4,000	13.4047	0.0006	33
190–perpetuity	4,000	22.222[a]	0.0002	22
				88,889

[a]YP perp. @ 4.5%.

Note that the result is the same, but the three-line valuation is somewhat easier to produce, especially in the absence of valuation software, spreadsheets or even pocket calculators. A reversionary valuation would be as follows.

Example 4.5   Reversionary freehold

A shop property was let on a 21-year lease, with 6 years unexpired in 1950. The rent under the lease fixed in 1935 would be in the region of 50% of the rental value in 1950 (Nottingham average index 1910 = 100, 1935 = 161.9, 1950 = 344.3). Assuming the rental value of £4,000 p.a. in 1950, the rent under the lease is £2,000 p.a.

The approach at that time would be a capitalisation of the reversion at a yield higher than the term. Adopting a deduction for the additional security of the term income of, say, 1%, the term yield would be at 3.5% with the reversion capitalised at 4.5%.

Current rent	£ 2,000	
YP 6 years at 3.5%	5.3286	
		£ 10,657
Reversion to ERV	£ 4,000 p.a.	
YP perp. at 4.5%	22.2222	
PV 6 years at 4.5%	0.7679	
		£68,257
Valuation		£78,914

Comments:

a. The term yield is now level with the yield on gilt-edged stock. The term rent is seen as secure, the tenant occupying property worth twice as much as the rent payment. The income is fixed under a contract and the risk of default or fluctuation is minimal. Whether the term is as risk free as a gilt is open to question – and generic property risks such as illiquidity are ignored – but a yield of 3.5% is arguably the correct yield for the very best property, which would additionally presume a letting to an impeccable tenant.

b. The rent on reversion is estimated to be the rental value at the time of the valuation. Considering the perceptions of investors, this would have represented a valuer's best estimate of what the current market rental value would be. There is no implication of growth within the capitalisation rate, and the valuer had no reason to expect an increase in values being any more likely than the review taking place in a trough, such as what happened after 1930. The reversion would have taken place in 1956, 11 years after the war ended, and a sustained period of rental growth had only been evidenced longer than 11 years once since 1910 (in 1918–1930). The more recent history of depression, recovery, war, recovery, was a shorter-term cycle (3 years down, 6 years up, 6 years depressed, 6 years up) up to 1950.

c. The rent on reversion would have been assumed to be fixed on a long lease of either 21, 35 or 42 years in order to stabilise any possibility of fluctuating returns.

d. The yield for the capitalisation of the reversion would have been selected on the basis of comparisons with similar or fully let property investments and represented a level of return that would be sufficient if it was the internal rate of return (IRR) from the investment. Again, this is a DCF valuation. The margin above gilts represented the extra risks attached to property and had no inherent growth implied within it. The investor's willingness to accept a lease with no rent reviews is a testimony to that fact.

Part Two

Example 4.5 (Continued)

Given these assumptions and perceptions, the approach represents a logical, defensible technique to both the capitalisation and prediction of income flow. The valuation assumes a fixed rent to reversion, a reversion to a rental level consistent with the valuer's estimate of future rental level and a sustaining of this level into the distant future.

The income profile shown in Figure 4.1 is consistent with expectations.

The full-cash-flow version would be as shown in Table 4.3, adopting the same assumptions of a succession of 21-year leases at the expiry of the existing lease in 6 years' time.
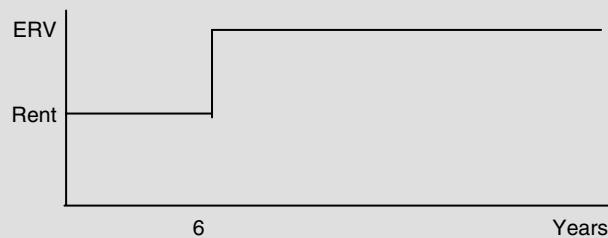
Figure 4.1   Reversionary income profile.

Table 4.3   Reversionary cash flow.

Years	Rent £	YP 21 @ 3.5%/4.5%	PV @ 4.5%	Present value (£)
0–6	2,000	5.3286	1	10,657
7–27	4,000	13.4047	0.7679	41,173
28–48	4,000	13.4047	0.3047	16,337
49–69	4,000	13.4047	0.1209	6,482
70–90	4,000	13.4047	0.0480	2,572
91–111	4,000	13.4047	0.0190	1,020
112–132	4,000	13.4047	0.0076	404
133–153	4,000	13.4047	0.0030	160
154–174	4,000	13.4047	0.0012	63
175–perp	4,000	22.2221	0.0005	41
				78,914

The approach to leasehold investment valuation is based on the same expectations regarding maintenance of rental values and the fixing of rents on long review patterns.

By 1950 the use of dual-rate tables was accepted. The development of the tax adjustment is well documented, and would become the normal approach after 1960.

Example 4.6   Leasehold

The valuation of the leasehold interest in the previous property (rental value £4,000 p.a., rent paid £2,000 p.a.; unexpired term 6 years) illustrates the process.

ERV	£ 4,000 p.a.
Rent paid	£ 2,000 p.a.
Profit rent	£ 2,000 p.a.
YP 6 years at 5.5% and 2½% adj. tax at 40%	3.1654
Valuation	£6,331

Comments:

a. The profit rent remains at the same level for the whole term and expires in 6 years' time. Because the pre-reverse yield gap perception is that rental values fluctuate rather than continually rise or fall, the leaseholder could be expected to sublet the property for the whole of the remaining term with no reviews. The net income would therefore remain constant.

b. The interest expires in 6 years' time, and upon expiry the lessee has no further interest in the property. Therefore, no value attaches to the interest after 6 years. It is an investment that terminates, and all the return is in the form of income. The investor must recoup his capital invested out of income, while a freeholder owns the interest in perpetuity, meaning that the value of the asset can be expected to be maintained in the long run. To compare the investment in a leasehold interest with a freehold, the leasehold investment is converted into something that can be equally perpetual, by enabling the investor to recoup his initial capital investment at the end of the lease and reinvest in an identical investment for the same price, and so on. The dual-rate approach was evolved to make this comparison, with a tax adjustment justified by the fact that, for the taxpaying investor, the sinking fund would be taken out of a taxed profit rent.

c. Having made the investment comparable with a freehold and in the absence of rental growth expectations, it remains to be considered whether a leasehold is more risky than a freehold. The perceptions were that it was, and so a higher return was used. In practice the valuer would have looked for other leasehold comparisons in accordance with his training (to look for similar comparisons), but in the absence of such comparisons a margin was adopted over and above the freehold yield for similar property. This was of course justified by the notional conversion of the wasting leasehold into a perpetual freehold. In the textbook examples we examined, 1% higher was a typical margin from freehold to leasehold capitalisation rate

d. The sinking-fund rates adopted were justified because sinking-fund investment plans were available at yield levels in the order of 2 to 3% net of tax.

e. The sinking-fund element of net income was not treated differently from the rest of the income for income tax purposes, and so a tax adjustment was made to the element of the income that was going into the sinking fund before it was invested. This ensured that it was then clear how much of the net-of-tax income was left to the investor as 'spendable income'.

The major conclusion from the foregoing analysis is that, in the context of the future expectations of investors and valuers, conventional techniques had a logical and defensible basis in 1950 and by analogy at other times prior to a change in investors' perceptions that occurred in the later 1950s. Whether these valuation models continued to be defensible after the change in perception will be considered in the next section.

4.4   The current conventional market valuation model

In the post-1960 economic conditions, the conventional model came under increasing pressure due to a change in investors' perceptions. In the 1970s and 1980s the reverse yield gap was significant, and growth potential began to dominate property prices. Later, the major property crash in the UK in 1989/1990 created the opposite possibility in investors' minds. These changes posed some interesting questions for any technique that has to maintain its credibility in rising, falling and relatively static markets.

The remaining part of this chapter sets out the conventional valuation approach and how it has been adapted to these challenges. It addresses the different variations on the major conventional theme and how they are applied to both reversionary and over-rented situations, and critically examines their performance.

In the pre-1960 era, the typical valuation could be related directly to other fixed-income investments such as bonds. After the appearance of the reverse yield gap, the model became a comparison model based on a capitalisation rate/all-risks yield, and the capitalisation rate was no longer the required return. For the first time, the yield used in the valuation was not based on a straight comparison with other investment markets. It therefore ceased to be a rate of return and became purely a unit of comparison. It was found by directly comparing deals done for other similar property investments in the same location, with similar physical characteristics and similar lease structures. In effect, the model ceased to be an investment approach and became a comparable approach based upon the capitalisation rate.

This section assesses the model as a market valuation or pricing technique that attempts to make the best use of market comparables; it no longer has a place as an investment appraisal technique or in a detailed analysis of prices.

It is clear that the best pricing technique, meaning an accurate one, must be based on the best evidence of market prices derived from other transactions in the same sub-market. The model's efficiency in its use and adaptation of market evidence is therefore the main criterion to be adopted in assessing its quality. This test is now applied by examining the conventional (pricing) valuation solutions to standard valuation problems.

4.4.1 The fully let freehold

Of all three categories of property investment, the fully let freehold is least prone to variation and hence to inaccurate valuation. The valuation approach is still as it was set out in Example 4.1. The normal approach to a fully let freehold interest for market value purposes is simply the rent passing (which is also the ERV) divided by the capitalisation rate/all-risks yield. As there are no major differences in the application of the model by different practitioners, the chances of different valuers coming up with different valuations based upon the same information base are small. However, the valuation relies upon the strength of the comparable, but comparables may be sparse in a slack market dominated by reversionary freeholds. The quantity and quality of comparable transactions is the key to all comparable valuations; in fully let freeholds methodological factors are less important.

However, when comparables cannot be applied directly, all adaptations are intuitive. For example, if a reversionary freehold comparable shows a yield of 6%, how should this information be applied to a fully let property? What if the comparable is let on 5-year reviews but the subject property is let on 3-year reviews? As the model is based upon rent and capitalisation rate only the capitalisation rate can be adjusted to cope with differences between subject and comparable (hence the term 'all-risks yield', which is also used and suggests that all risks are wrapped up or hidden in the yield).

4.4.2 The reversionary freehold

Three conventional techniques for valuing reversionary freeholds are recognised. These are the term and reversion, the equivalent yield and the layer (or hardcore) approaches.

The basic texts on valuation tend to suggest that the term and reversion approach is the most commonly used method, and the other two are lesser used variations. Research into valuation practice carried out by one of the authors just around the time of the property crash (Crosby, 1991) showed that, although the majority (60%) of valuers questioned used term and reversion 'usually or always', they tended to be valuers who were not specialists in the investment valuation field. They worked for provincial private practices and local authorities and did few valuations of this sort each year. They tended to rely upon traditional training, which continued to support the term and reversion method.

Horizontally sliced layer and equivalent-yield methods were at the time adopted mainly by valuers in London and the larger metropolitan areas specialising in this type of work. The term and reversion method was no longer the standard approach of specialist investment valuers (Crosby, 1991).

In order to set out and compare the three approaches, a single example is used as follows.

Part Two

Example 4.7   Reversionary freehold

Value a good-quality freehold office investment let at a net fixed rent of £150,000 p.a. with the final 6 years of a historic lease still to run. The net ERV of the building is £300,000 p.a. An identical building next door has recently been let on 5-yearly reviews at its ERV and subsequently sold for £5,000,000.

Analysis

$$\text{Capitalisation rate } (k) = \frac{£300,000}{£5,000,000} = 6\%$$

(Note: In the UK, purchaser's costs are usually deducted from valuations after the capitalisation rate has been applied. Because of that, when analysing property transactions for capitalisation rates, these costs have to be added to the contract price to determine the full outlay. Purchaser's costs in the UK at the time of writing are about 5.75%, made up of 4% stamp duty tax and another 1.75% for professional fees. However, to keep examples simple, purchaser's costs will be ignored for the purposes of building and comparing solutions in this section of the book.)

If the valuation had been of a fully let property, the capitalisation rate could have been applied directly. If perfect comparables exist, arguments over technique are redundant and direct capital comparisons are all that is required. However, the subject property is a reversionary property and an adjustment technique is required in order to reconcile imperfect comparables.

Term and reversion

Term rent	£150,000		
YP 6 years @ 5%	5.0757		
		£761,350	
Reversion to ERV	£300,000		
YP perp. @ 6%	16.6667		
PV 6 years @ 6%	0.7050		
		£3,524,800	
Valuation			£4,286,160

Analysis

$$\text{Initial yield } = \frac{£150,000}{£4,286,160} = 3.50\%$$

$$\text{Reversionary yield } = \frac{£300,000}{£4,286,160} = 7.00\%$$

The equivalent yield is the single yield applied to both parts of the valuation to get the same answer. In this case it is 5.97%.

Notes:

a.   The term yield is derived from the fully let comparable and then adjusted downwards to represent the security of the term income. This security is

supposed to come from the fact that the default risk is less as the tenant is less likely to leave the premises while paying less than ERV.

b. The capitalisation rate of the reversion is based on the fact that the property becomes fully let in 6 years' time and the comparison is a fully let property, and so the yield can be applied directly.

c. An alternative application of the technique adopts the same 1% differential between the term and reversion yield, but instead of adopting $(k - 1)$ for the term and k for the reversion, it adopts yields which straddle the capitalisation rate, that is, $(k - 0.5\%) \times 5.5\%$ on the term and $(k + 0.5) \times 6.5\%$ on the reversion. The reason for this is explained in what follows.

d. The model makes no attempt to identify the nature of the rent change and whether it is caused by a rent review or a lease expiry. However, if a void period is required, it can be accommodated relatively easily in this vertically sliced model.

Criticisms

i. The term represents a fixed income for the next 6 years. The capitalisation rate represents a growth implicit yield, and so, if the yield choice within the valuation is going to distinguish between the different parts of the valuation (term and reversion), it should take account of the fixed-income nature by applying a yield appropriate to a 'safe' income in default terms, but an extremely poor income in real terms if inflation expectations are positive.

ii. The term yield is often lower than the yield used on the reversion by the 'normal' amount of 1%, but it is not always an advantage to have a lower rent. In a rising market where rent review settlements lag behind open-market lettings, it may be an advantage to lose a tenant and obtain a higher rent from a better-quality tenant. In a falling market, the covenant of the tenant becomes crucial to value, and rules of thumb regarding the value of a secure tenant again appear simplistic.

iii. A reversionary property may not have the same qualities as fully let properties. The capitalisation rate of 6% implies growth that is realisable every 5 years. Theoretically, the growth potential of reversionary properties (let with unexpired terms less than the normal review pattern) is greater than for the fully let property, and so the combined effect of valuing the reversion at the fully let capitalisation rate and the term at 1% less creates a 'correct' valuation. However, the market does not perceive reversions in this light, and it is rare for a reversionary property to be valued at an equivalent or average yield lower than the capitalisation rate of the fully let property. The market tends to adopt a philosophy that discounts the reversionary property value because of the fact that the ERV has been obtained when fully let but is only an estimate in the reversionary valuation. This uncertainty regarding the ERV estimate creates additional risk in the reversionary valuation, and the value is therefore discounted as indicated in note (c).

> **Example 4.7** (Continued)
>
> iv. There is a problem with the yield choice for the reversion: the 6% yield implies rental growth that is participated in every 5 years. However, the PV factor relates to the behaviour of the ERV in the 6-year term period. The ERV grows continually, and therefore the reversion should be deferred at a lower yield to imply a better growth potential. This point is illustrated in Chapter 6.
>
> The final result is a valuation that is logically incorrect and practically difficult to understand. It must be incomprehensible to most independent observers, as it isolates one aspect of the investment (security of term income) while keeping all others hidden within the yield. It is, of course, a product of an age that has long since departed, and the traditional application of the method should be laid to rest immediately.

However, it does perform one useful purpose that applications which have replaced it find very difficult to perform, specifically the valuation of properties let on long fixed terms without rent reviews prior to the final reversion. If our example had an unexpired term of 16 years rather than 6 with no rent revisions, the valuation could be approached by a term and reversion method but adopting a yield on the term to reflect the fixed income. This yield could be based on fixed-income government securities adjusted for a few of the additional risks of property investment, mainly concerned with tenant quality and illiquidity, but ignoring those property risks that will only impact on the long distance reversion. In effect, it is a property bond based on the tenant covenant strength. These issues will be returned to later in the chapter.

Layer
The horizontally sliced layer technique came into constant use in the 1970s in response to the early 1970s rent freeze discussed earlier. In the Crosby 1991 research into practice, the age profile of valuers using layer methods indicated a bulge in the age group who entered practice in the early 1970s.

However, in the 1960s, Capital Gains Tax legislation led to the initial use of layer techniques, as valuers sought a method that could identify the prospective capital gain element of the reversion. This technique is illustrated as follows.

Term rent	£150,000	
YP perp. @ 6%	16.6667	
		£2,500,000
Reversion to ERV	£300,000	
Less bottom slice	£150,000	
Top slice	£150,000	
YP perp. @ 7%	14.2857	

PV 6 years @ 7%	0.6663	
		£1,427,876
Valuation		£3,927,876

Analysis

$$\text{Initial yield} = \frac{£150,000}{£3,927,876} = 3.82\%$$

$$\text{Reversionary yield} = \frac{£300\ 000}{£3,927,876} = 7.64\%$$

Equivalent yield = 6.44%

Notes

a. The bottom-slice income is perceived to extend into perpetuity on the basis that there is little likelihood of the rent falling below the passing rent, because of the combined effect of upward-only rent reviews and perceived rental growth prospects.

b. The top slice is much more risky. It is based on an estimate of ERV about which it is difficult to be precise. In addition, because of the top-slice nature of the increase, an error in the ERV estimate would create a correspondingly greater error in the value of the top slice. For example, had the ERV only been £270,000 p.a. (a 10% error), the top-slice rental would have been £120,000 p.a. rather than £150,000 p.a. (a 20% fall). The geared nature of the increase is therefore very sensitive to errors in estimation of rental value and is therefore the risky part of the investment.

c. The layer technique more closely aligns with the perceptions of the modern valuer and is therefore more easily adapted for specific circumstances. If the valuer feels that the ERV estimate is very suspect then he or she can amend the top-slice yield by more than 1% (in practice 2% is often used).

Criticisms

i. It is difficult to accept the split of the income into two parts, as the risk of non-receipt attaches to the whole income.

ii. It is more difficult to incorporate breaks into the cash flow than if vertically sliced.

iii. The application of the layer method uses a growth-implicit yield on the bottom slice, which is fixed in nominal terms. As all the growth is in the top slice, and the top slice is highly geared, it might be expected to adopt a fixed-income yield on the bottom slice and a very low yield on the top slice to imply very highly geared growth potential. The valuation is unstable and suffers from the same problems as the term and reversion approach outlined in criticism (iv), but magnified because of the gearing problem.

Part Two

iv. The choice of the yield split between top and bottom slices is very arbitrary and cannot be undertaken other than intuitively.

v. It is almost impossible to intuitively increase the yield on both top and bottom slices for a property that is let on a long fixed term before reversion. In the Crosby 1991 survey, valuers using this method (and the equivalent-yield method) discarded it in favour of term and reversion for that problem.

Although mathematically and conceptually fraught with problems, the layer technique does have two major advantages for practice. These are the concentration on the important variable of ERV and the lack of downside risk caused by upward-only rent reviews (assuming long unexpired terms and good covenants).

Equivalent yield

The equivalent-yield method differs from the other two approaches simply by failing to differentiate between the yields used on top and bottom slice or term and reversion components. As it applies the same yield to both parts of the income flow, it does not matter whether a horizontally or vertically sliced approach is adopted. In the practice survey, the horizontally sliced equivalent yield is more prevalent than its vertically sliced alternative.

Term rent	£150,000	
YP perp. @ 6.5%	15.3846	
		£2,307,692
Reversion to ERV	£300,000	
Less bottom slice	£150,000	
Top slice	£150,000	
YP perp. @ 6.5%	15.3846	
PV 6 years @ 6.5%	0.6853	
		£1,581,540
Valuation		£3,889,232

Analysis

$$\text{Initial yield} \quad = \frac{£150,000}{£3,889,232} = 3.86\%$$

$$\text{Reversionary yield} = \frac{£300,000}{£3,889,232} = 7.71\%$$

$$\text{Equivalent yield} \quad = 6.50\%$$

Notes

a. The equivalent yield represents the IRR of the cash flow assuming a reversion to no more than current rental value. Future rental value growth is still excluded.

Part Two

b. The equivalent-yield method is supposed to be particularly useful in the analysis of transactions. Another reversionary transaction can be analysed by determining the IRR of the conventional cash flow, which can then be applied to the subject property with suitable adjustments for differences between the comparable and subject property.

c. Criticisms of the two previous models based upon mathematical problems and arbitrary adjustments of the two yields within the valuation are eliminated as there is only one yield.

d. Criticisms of the other two models based on the choice of a growth-implicit yield on the term (or bottom slice) are also eliminated. The single capitalisation rate is the true all-risks yield of the investment. It represents the growth potential of the investment as a whole and the other risks applied to the property as a whole (not to parts of the income profile).

e. Practitioners tend to adopt slightly higher equivalent yields than capitalisation rates from fully let properties for the reasons discussed in note (c) and criticism (iv) of the term and reversion approach. The extent of this increase (we have used 0.5%) is arbitrary.

Criticisms

i. Being a true capitalisation rate technique, the valuer is left to intuitively adjust for every difference between the subject and comparable property. These differences include physical and locational differences as well as tenure (fully let to reversionary freehold) and, if both comparable and subject property are reversionary, differences in lease structures including the unexpired term and ratio of rent passing to ERV (see Chapter 6).

ii. The model is only as good as the comparables on which it is based. As indicated in the previous paragraph, a perfect comparable for a reversionary property is one that has the same locational qualities, is physically similar, and also has the same unexpired term and the same rent passing to ERV ratio. As the subject and comparable property diverge, the quality of the valuation diminishes. This is not exceptional to the equivalent-yield model. But if the subject property has a long fixed term, there is a wide intuitive leap necessary to adapt the yield. In this case, as for the layer approach, valuers often revert to the term and reversion approach using a fixed-income yield on the term to reflect the lack of growth potential.

Conclusions

The criticisms of conventional approaches for market valuation are based on two criteria.

a. Rationality: There is little evidence to suggest that the models as currently used reflect the perceptions of the owners of property investments.

Part Two

Even in the midst of the recession of 1992–1993, prime property yields implied a long-term growth rate in rental values. Even in a low-inflation era such as that of the late 1990s and the new millennium, valuing fixed elements of the cash flow at growth-implicit yields and assuming reversions to no more or less than the current ERV are now obviously devoid of reality.

b. Comparables: As there is no longer a rational basis for these models, the reason they have survived is because of the perceived role of the valuation in fixing price levels. Comparison with identical or similar assets has long been accepted as the best basis for assessing likely selling price. The argument boils down to which conventional technique makes the best use of comparables and whether there is a better way of utilising comparable information. Of the three alternatives, only the equivalent-yield model is totally objective in its analysis of transactions, as it calculates the IRR of the current cash flow assuming a reversion to current ERV only. It does not subjectively amend term or bottom-slice yields as compared to reversion or top-slice yields. By removing these arbitrary adjustments to yields, it is the only true capitalisation rate approach. The equivalent yield is a measure of the qualities of the comparable and needs to be adjusted for the differences inherent in the lease structure of the subject property and for any other differences. All differences are encompassed within the yield, and this is the only thing that can be changed.

Nonetheless, problems arise when comparable and subject properties start to differ, and one or other of them becomes 'abnormal'. In the property market of the 1990s some of these abnormal problems became the norm, and the inadequacies of the techniques set out in this chapter have become more obvious. Particular examples are leaseholds and over-rented properties, which are examined in the following sections.

4.4.3 Leaseholds

A single example is used to illustrate the conventional approach to leaseholds.

> **Example 4.8   Leasehold**
>
> A leasehold interest has 20 years to run, subject to a fixed head rent of £100,000 p.a. The current rental value is £200,000 p.a., subject to 5-yearly reviews. Market evidence suggests a freehold capitalisation rate (k) of 6% for this type of property.

Much criticised, the tax-adjusted dual-rate valuation appears to remain in limited use, but the tax exempt status of pension fund has prompted the use of unadjusted dual-rate valuations. Single-rate valuations have also been suggested (see, for example, Enever, 1981; Baum *et al.*, 2006). These three approaches will be taken as the available conventional techniques.

The three share a common feature, leading to a problem requiring immediate consideration. The capitalisation rate (k) is traditionally settled by reference to the initial yields obtained by purchasers of freehold investments in similar property with a small upward adjustment to account for the so-called extra risk of leasehold investment. This may be said to be the result of several inter-related factors: the top-slice nature of a leasehold, making the profit rent considerably more sensitive to changes in full rental value than the net freehold income; the dual contractual burden suffered by the leaseholder; the risk of a dilapidations expense inherited from previous leaseholders; and others.

The adjustment to k is often accepted as an additional 1% or 2% over the freehold capitalisation rate, which would lead in this case to a rate of 7% or 8%.

The logic of such adjustment is not questioned here (Chapter 7). Investors are generally said to be risk-averse (Chapter 2); so greater volatility in the net income, even if equal chances were applied to increases and decreases, would be sufficient to justify a higher yield.

However, the quantum of the adjustment is in the hands of the valuer. In the usual case, where market evidence is slight or imperfect, a considerable burden settles itself upon the valuer's intuition. This problem must be borne in mind for later reference: but, for the purposes of the examples, a capitalisation rate of 6% is used to isolate other errors and to reduce variations in an area where the valuer's inspiration is in danger of influencing his or her logic.

Dual rate, tax-adjusted

Rent received	£200,000 p.a.
Less rent paid	£100,000 p.a.
Profit rent	£100,000 p.a.
YP 20 years at 6% + 3% tax 40p	8.1950
Valuation	£819,500

Analysis

Required yield (spendable income) = 6% × £819,500	= £ 49,170 p.a.
Left for sinking fund (gross) = £100,000 − £ 49,170	= £50,830
Sinking fund (net) = £50,830 * (0.6)	= £30,498
Accumulation of sinking fund = × Amount £1 p.a., 20 years at 3%	= 26.8704
Capital recouped	= £819,500

Notes

a. As noted, the 6% capitalisation rate would normally be derived from sales of comparable freehold properties and adjusted upwards to account for extra risk.

b. The sinking-fund accumulative rate of 3% is supposed to represent the net-of-tax return available on a guaranteed sinking-fund policy taken out

Part Two

Part Two

Example 4.8   (Continued)

with an assurance company, which would provide risk-free return of capital. The sinking fund is designed to replace the initial capital outlay on what is a wasting asset. The historical organisation of the profession demanded that a property-wide means of comparison be evolved. While leaseholds might best be compared with redeemable stock, reality required that they be comparable with property investments and that leaves freeholds. The wasting nature of the asset had, then, to be countered by the replacement of capital over the period of the lease so that an interest similar to a freehold can be shown to exist. Provided the right steps are taken with the sinking fund, the right price is paid.

c. The tax adjustment of say 40% counters the fact that any higher rate 40% taxpayer would lose a portion of his profit rent in tax. While the effect on the remunerative rate or yield is not regarded as important (all, or most, investment opportunities are quoted on a gross-of-tax basis), its effect on the sinking-fund payment is vital. Without adjustment, the sinking fund would become inadequate as a result of income tax reducing the whole profit rent, including the amount destined for the sinking fund. As it has to accurately recoup capital, a 'grossing-up' factor is applied to cancel out the effect of tax (see, for example, Baum *et al.*, 2006): this grossing-up factor, in this case $1/(1-0.4)$, is the tax adjustment.

d. A 'true net' valuation (using a net-of-tax profit rent, a net capitalisation rate and no tax adjustment) would produce an identical result.

Criticisms

The criticisms set out here question some of the technical issues created when trying to apply conventional capitalisation rate techniques to leaseholds. There are some more fundamental criticisms with leasehold valuations that are critical, but they are dealt with later.

i. Why use such a consistently low accumulative rate? It is only in the most recent years that risk-free interest rates have dropped to the level that have been used consistently throughout the last 40 years. Bank deposits or building society accounts have earned considerably more in almost every year between 1960 and 2000, and yet are regarded as safe. It is true that they do not provide a guaranteed accumulation, but there is probably an equal risk of increases and decreases in the rates offered. Even risk-averse investors until very recently would be unlikely to discount the yield they would accept on guaranteed accumulations by as much as is necessary to produce 3%. Borrowers would certainly not set up 3% sinking funds when the cost of the capital they have employed to purchase the interest has been significantly more, even in the early 2000s with base rates at sub-5%.

ii. Why adjust for tax? Valuations are usually estimates of market value. Hence, the purchaser's tax rate is unlikely to be known and a guess, or average, has to be made or a corporation tax rate adopted. The current higher rate of income tax has often been used, but this is rarely the marginal rate of tax even where the small-scale investor is involved, and this ignores the

common case where a tax exempt fund is likely to buy, or where a company paying corporation tax is likely to purchase, either for occupation or investment. The considerable interest of gross funds in this market may be explained by the use of tax-adjusted valuations leading to low asking prices and resulting in high IRRs for purchasers (Baum, 1982; Baum and Butler, 1986).

iii. As noted in the RICS research report (Trott, 1980), the combination of three variables in the tax-adjusted, dual-rate valuation (capitalisation rate, sinking-fund accumulation rate and tax rate) makes a full analysis of transactions hazardous.

These criticisms may be countered by an untaxed approach that is often used to reflect the interest of the gross funds and more realistic accumulative rates.

Dual rate, unadjusted for tax

Rent received	£200,000 p.a.
Less rent paid	£100,000 p.a.
Profit rent	£100,000 p.a.
YP 20 years at 6% + 4%	10.6858
Valuation	£1,068,580

Analysis

Yield = 6% × £1,068,580	=	£64,115
Sinking fund = £100,000 − £64,115	=	£35,885
Sinking-fund accumulations × A £1 p.a., 20 years at 4%		29.7781
		£1,068,593

Notes

a. The sinking-fund accumulative rate used here should be the risk-free rate allied to the unexpired term.

b. A tax adjustment is superfluous in this case as the income of a gross fund is not reduced by tax. If, however, this represented a market valuation, any bidding taxpayer would have to accept a very low rate of return so as to compete if they allowed for a risk-free recoupment of capital.

Criticisms

i. It is easily proven that a single-rate years' purchase figure allows for recoupment of capital at the capitalisation rate (see, for example, Baum *et al.*, 2006). The justification for a dual-rate approach is the argument that, *if a sinking fund were actually taken out in practice*, there would be no reason for the accumulative rate offered by an assurance company coinciding with the capitalisation rate attainable upon purchasing the investment, thus necessitating a dual-rate approach. But are sinking funds actually taken out in practice? There are sound reasons for concluding that few investors would arrange for recoupment of capital in this way:
   - *Occupiers* can usually be regarded as long-term (more than the profit rent period) tenants. The initial capital outlay, or regarded as an investment of cash `in the business', is recouped out of profits, which (hopefully) outlive the profit rent.

Example 4.8   (Continued)

- *Investors* are likely to be holders of a number of property interests. In such a case, recoupment of capital from a wasting asset like a leasehold is unlikely to be by means of a sinking fund: it can be so by investing profit rents in similar investments. Income will be reinvested in the business in various ways, so it is difficult to conceive any investor actually behaving in a way assumed by the model.
- *Borrowers* in either category will have a cost of capital well in excess of the 3% or 4% accumulative rate. Consequently, no purchaser would set up a sinking fund to recoup capital at low accumulative rate when, as an alternative, they could reduce a debt costing much more.
- Even if there were some investors who took out sinking funds, it has been well illustrated (Fraser, 1977) that, while the concept of the sinking fund in leasehold valuations is designed as an attempt to reconcile the differences between the freehold and the wasting leasehold asset, the recoupment of capital in times of inflation becomes inadequate. Freeholds are likely to increase in capital and rental value over time. If the sinking fund replaces the initial capital cost of the leasehold, then the leasehold fails to keep pace with the freehold, and the rationale of the dual-rate concept is not put into practice. In the past various methods of adjusting the sinking fund to cope with inflation have been suggested by various writers including Fraser, Greaves and Rose. But the effect is to increase the sinking-fund element and reduce valuations still further. It will be shown later that more rational approaches to leaseholds suggest that they have been undervalued by conventional approaches, not over-valued, and any 'improvements' which make valuations even less accurate must be flying in the face of logic.

ii. There is a mathematical error in applying dual-rate valuations to reversionary leasehold situations. There are corrections that can be made, but they do not remotely address the more fundamental conceptual issues with leasehold conventional valuations.

Single rate

Rent received	£200,000 p.a.	
Less rent paid	£100,000 p.a.	
Profit rent	£100,000 p.a.	
YP 20 years at 6%	11.4699	
Valuation		£1,146,990

Analysis

Yield = 6% × £1,146,990		= £68,820
Sinking fund		= £100,000 – £68,820
		= £31,180
× A £1 p.a., 20 years at 6%		36.7856
		£1,146,975

Notes

a. As demonstrated by the analysis, the single-rate valuation allows for the recoupment of capital at the remunerative rate. Whether such a rate could be earned in practice is not necessarily important for the reasons stated within criticism (i) of the dual-rate unadjusted-for-tax approach (see also Colam, 1983).

b. However, recoupment of capital would have to be out of taxed income, as profit rents are subject to income tax and reinvestment in any medium would only be possible with the after-tax income. Hence, a net-of-tax valuation may be required. The example used is a net-of-tax valuation for a gross fund: if the potential purchaser is a taxpayer competing with taxpayers, then a tax adjustment will be needed. In such a case the net profit rent should be capitalised by a years' purchase factor at a net-of-tax yield, otherwise a dual-rate valuation will be the result. However, net-of-tax adjustments within conventional models are more complex than might be supposed. It is not enough to reduce both income and yield by the tax rate as the yield is a function of both future growth and target rate, and growth rates are the same net or gross of tax. This point is picked up when applying more rational techniques to leasehold valuations.

c. All foregoing criticisms appear to be met. The accumulative rate is no longer critically low; the problem of average tax adjustment can be avoided by investigating the market; there is no artificial assumption that a sinking fund is actually taken out, as reinvestment is at the remunerative rate, thereby obviating the problems of recoupment in times of inflation; and there is no mathematical error when valuing varying profit rents at a single rate of interest. Unfortunately, more fundamental problems with valuing leaseholds exist.

Conclusions: Leasehold valuations
Leasehold investment valuations are relatively rare compared with the more common freehold. However, the complexity of the leasehold problem is far greater than for freeholds, and the margin for error is much greater.

Part Two

The basic approach is the same as for freeholds. The prospective cash flow of the leasehold investment is set out on the assumption that rents are reviewed up to current rental levels, but future increases in rental value are ignored. The cash flow is capitalised at the capitalisation rate, found by comparison.

In the preceding critique, it was concluded that the dual-rate approach should be laid to rest and single-rate valuations would be a preferred alternative. However, a fundamental problem remains. This is examined in detail in Chapter 6 and is summarised here. All conventional approaches to leasehold valuations, whether single rate or dual rate, rely on a comparison technique. The perfect comparison, in addition to physical and locational

qualities, would be leasehold, of the same unexpired lease term and with the same reversionary date and the same ratio of rent to ERV.

It is impossible to envisage such a catalogue of similar qualities. The market's solution is therefore to use freehold comparables because they are more plentiful. But freeholds are not the same; in fact, apart from both being based upon properties, they could not be more dissimilar. In an effort to compensate for some of these differences, valuers using conventional techniques are encouraged to add a risk margin to the freehold capitalisation rate. Using the capitalisation rate from a freehold, which incorporates an implicit expectation of future growth in rental values, a depreciation rate and a risk premium (Chapter 2), as the value measure for a shorter term and differently structured cash flow, is so simplistic that valuations carried out by that method are, in our opinion, virtually useless. We hope to show that the individuality of leasehold cash flows makes simplistic comparable valuations based on ill-considered relationships with other property assets a prime case for negligent valuations, and a large number of leaseholders have sold substantial assets for a lot less than they were worth over the last 30–40 years.

4.4.4   Over-rented properties

So far we have looked at the conventional approach to the market valuation of properties let either at their ERV or at rents less than ERV. Starting in early 1990, the UK experienced a deep recession, and rental values fell in nominal terms in many locations, especially those that showed the major growth in the 1980s boom. This includes the City of London and the southeast region of the UK. According to Investment Property Databank, in May, 1992, 70% of Central London offices were over-rented, and by an average of over 35%. The degree of over-renting increased over the following year to May 1993. Also, at the same time, over 60% by value of the Investment Property Databank was let on leases with over 15 years unexpired, virtually all with upward-only rent reviews every 5 years (Crosby *et al.*, 1998).

Given a low-inflation and low-growth outlook for the UK economy, periods of over-renting are now expected to reappear at regular intervals in the future. A further example was provided by the period 2000–2003, when falls in rents for Central London offices again took place and many aging office properties built in the late 1980s had not regained their 1989/1990 rental levels well into the 2000s because of a combination of low growth and depreciation.

UK valuers had not experienced any prolonged period of over-renting in the past before 1990. In 1973–1974, property values fell, but in most locations they had recovered their previous values within 5 years, a normal rent revision period, owing to high inflation rates. Valuers therefore had to adapt to the changing circumstances with little help from past experience, and they

Part Two

attempted to adjust the existing conventional models to the task. The staple diet of mainstream practice was the horizontally sliced equivalent-yield or layer model; so this was the main focus of their attempts.

We set out the conventional approach and its limitations in the following example.

Example 4.9   Over-rented freehold

A Central London office building is to be valued in June 1992. It was let on a 20-year full repairing and insuring lease in March 1990 with 5-year reviews at a passing rent of £2m p.a. The ERV has now fallen to £1m p.a. The fully let rack-rented capitalisation rate is estimated to be 8%. Gilt yields are approximately 10%.

Valuers in practice started to approach the challenge of over-rented properties by adapting the layer method and 'top-slicing' the portion of the contractual rent they considered to be in excess of the current rental value. They capitalised the core income as if the property was fully let at the appropriate capitalisation rate. They then capitalised the top-slice income for the unexpired term of the lease at a rate that reflected the fact that it was a fixed income and that it was dependent on the tenant's ability to continue to pay the rent. The approach is shown diagrammatically in Figure 4.2.

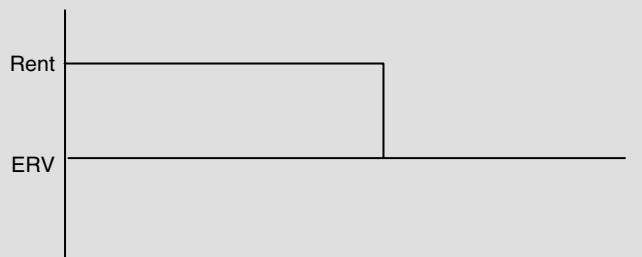| Core Income		
ERV	£1,000,000	
YP perp. @ 8% (all risk yield)	12.5000	
Value of term		£12,500,000
Top slice		
Passing rent	£2,000,000	
ERV	£1,000,000	
Overage	£1,000,000	
YP 17.75 years @ 13%	6.8135	
Value of reversion		£6,813,459
Valuation		£19,313,459

Figure 4.2   Over-rented property income profile.

Example 4.9   (Continued)

This approach is logical to valuers because, given that the layer method is standard, they are used to dividing a rising income between the passing rent and the ERV. With an over-rented property, valuers merely reverse the layers. In this approach, valuers capitalise the top-slice income for the whole period for which the tenant is contracted to pay the higher rent as, at each rent review, the upward-only provision would keep rents at no less than the contract rent.

Some valuers at the time considered that a sinking fund should be applied to the top-slice income because it is a wasting asset. Our views on dual-rate valuations are clearly set out earlier; following this, we cannot justify adopting a dual-rate solution to this problem.

There are two main problems with the conventional approach:

a.   If the capitalisation rate implies long-term rental growth (which is the still the case with a rate of 8%), then the ERV may rise to exceed the passing rent before the lease expires. Therefore, it may be incorrect to capitalise the top-slice income for the whole of the unexpired term.
b.   Capitalising the top slice as a fixed sum ignores the rental growth implied by the capitalisation rate (and the implied decline in the amount of the top slice) so that part of the overage is double counted.

To compensate for the fact that the overage might be eliminated before the end of the lease, the term of the overage can be taken to an earlier review only. However, the only realistic or rational approach is to forecast the review at which the overage is eliminated. As conventional models hide growth in the yield, they have no mechanism by which to incorporate growth in to the calculation.

Valuers advocating and using conventional techniques have resisted the challenge of models that explicitly incorporate rental growth for the past 30 years. In the case of over-rented properties, there appears to be no choice; see Chapter 10 for a full example.

Even if the necessity to forecast the point at which the rent will be reviewed to more than the current rent is accepted, the core and top-slice method will still not be a defensible approach. This is illustrated here. If it is assumed that the rent will rise above £2m p.a. by the review in 12.75 years' time (2005), the valuation will be as follows:

Core income.

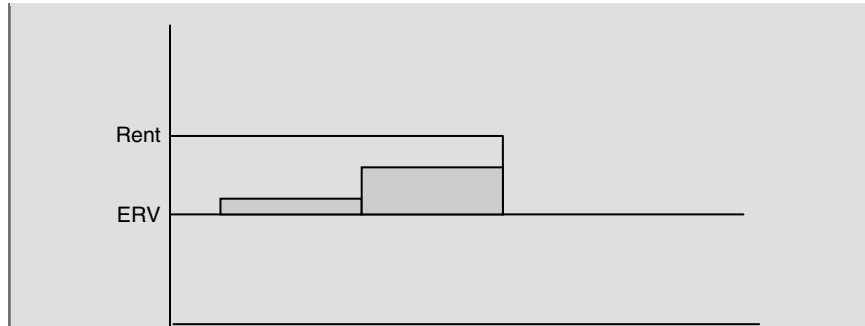|		
ERV	£1,000,000	
YP perp. @ 8% (all risk yield)	12.5000	
	£12,500,000	
Top slice		
Passing rent	£2,000,000	
Less ERV	£1,000,000	
Overage	£1,000,000	
YP 12.75 years @ 13%	6.0731	
	£6,073 085	
Valuation		£18,573,085

Figure 4.3 Double counting in over-rented property valuation.

The valuation is lower than the previous solution by 4%. However, this is still an over-valuation because there is double counting of the notional rent increases at the reviews in 1995 and 2000 (those included by the use of 8% on the bottom slice). This is illustrated in Figure 4.3, where the hatching represents that part of the income flow that is effectively valued twice, once within the yield of 8% and once explicitly in the top-slice capitalisation.

To help overcome this problem, valuers must now explicitly consider growth. The best solution to this problem using conventional models would be to shelve the popular layer method and to adopt a term and reversion approach. Having anticipated when the overage is eliminated, the term of 12.75 years could be valued at a risk-free rate subject to a risk premium to reflect weakness in the covenant of the tenant paying attention to the additional risk of any default while paying excessive rent, with the reversion valued as usual at the capitalisation rate. In this valuation 13% reflects a risk premium of 3% above government bonds, which suggests an illiquid bond with quite significant default risk. If the tenant does default, the overage is lost and the best the investor can hope for is a letting at rental value. If the tenant is believed to be very secure at the level of over-rent, then a small risk premium above bonds would be warranted.

Term rent	£2,000,000	
YP 12.75 years @ 13%	6.0731	
		£12,146,170
Reversion to ERV	£1,000,000	
YP perp. @ 8%	12.5000	
PV 12.75 years @ 8%	0.3748	
		£4,685,513
Valuation		£16,831,68

This valuation remains subject to a single remaining error in the way that the reversion is discounted in a term and reversion valuation. This is referred to in the preceding text and is further discussed in Chapters 5 and 6.

In the absence of a DCF approach, there is a simple alternative to adopting either a core and top slice or a term and reversion approach to the

Part Two

over-rented problem. Many valuers reverted to a fully let initial-yield approach on the basis that, in many markets, the core data of rack-rented capitalisation rate and rack rental value are impossible to gauge. In the Central London office market, for example, at the time of the crash, all new lettings were subject to significant rental inducements, and almost all other properties were over-rented. There was virtually no direct evidence of `real' rents or capitalisation rates. Properties let on long leases with no prospect of a rent increase before the lease expires had become fixed-cash flows secured on the covenant of the tenant, and had little to do with conventional property risks. The initial yield can then be based upon the gilt yield with a margin for illiquidity and default risk, or have reference to the level of return on debenture stock secured on the tenant company (Chapter 10).

For properties let on shorter leases, valuers have to pay more regard to the property risks inherent in the reversion, making an initial-yield approach hazardous in the extreme.

4.5   Conclusions

Conventional techniques have been under attack for over 30 years. Around 1960, they changed from DCFs at required rates of return to comparison techniques using the yield as the unit of comparison. Investment rationality ceased to be a criterion, and objectivity and accuracy in the use of transaction evidence became the key to their acceptance.

Few problems have been seen in the valuation of fully let properties, where comparables can be directly applied. Problems only emerge in thin markets as with all comparable approaches. As the UK market is heavily transacted relative to many other property markets, valuers have been able to survive using comparables-based techniques for the major property types

For reversionary freeholds, however, the method has more problems as lease structure has an influence on the quality of the comparable. If plenty of comparables with similar lease structures exist, the method produces solutions that are reasonably based on the criterion of accuracy, if not that of rationality. However, as the quality of comparables diminishes, the lack of rationality leads to valuations that are not soundly based and leave too much to the intuition of the valuer. These problems become extreme as the differences between the comparable and the subject property become wider and conventional techniques have increasing difficulty with unusual lease structures.

The market of the early 1990s made a large number of properties unusual. It is ironic that the true limitations of the conventional techniques have been exposed by falls in rental value even though it was the new perception of growth in the 1960s that precipitated the debate. Over-rented properties therefore represent a very significant valuation problem, but have served a

Part Two

very valuable purpose in making the UK valuation profession increasingly aware of the limitations of the tools of their trade.

Conventional leasehold valuation has always been the most discredited aspect of conventional valuation methodology. Not only are there a multitude of detailed criticisms, there are a number of fundamental flaws that the conventional model cannot compensate for. A comparison technique relies upon the quality and quantity of comparables. There is not sufficient quantity in the leasehold market, and, even if there were, quality would be unlikely to exist because of the individuality of each interest based upon complex lease arrangements. The recessionary market of the early 1990s has only reinforced the view that the conventional approach is impossible for a professional to defend.

There are alternatives to conventional approaches that pass the tests of objectivity in the use of market evidence while retaining some underpinning of rationality. These alternatives to the conventional approaches are set out in Chapter 5.

Part Two