DCF 1 – How Does The Property Fund Management Industry Do Discounted Cash Flow?

By Dr David Parker

Abstract

In the following article, Dr Parker presents the first of a series of short, inter-related papers on current professional practice issues concerning discounted cash flow (DCF) based on the findings of a survey of property fund managers.

With this paper considering the survey findings concerning the inter-relationship between property fund manager decision making processes and valuation practice, Dr Parker poses questions for discussion by the valuation profession concerning the extent to which approaches to valuation methodology should be profession lead or client driven.

Subsequent papers will consider the survey findings concerning the impacts on valuers of trends in property fund management and the then prevailing regulatory environment for DCF.

Introduction

The new millennium masters of property fund management are relatively few, comparatively large and have a global presence.

PIR 2003c estimate that the Australian property fund management industry controls gross assets in Australia and overseas of AU$163 billion in 694 funds managed by 194 property fund managers on behalf of over one million investors. The ten largest direct property fund managers control 70% of such funds, with the next ten largest accounting for a further 18%. Accordingly, gross assets of around AU$145 billion are managed by only twenty property fund managers with nine of the top ten being global businesses.

This is clearly evident with previously locally owned property fund managers such as National Mutual and both Mercantile Mutual and ANZ Funds Management now effectively controlled by AXA and ING who are large, global property fund managers headquartered in France and Holland, respectively.

The decision-making processes of property fund managers are inextricably linked to the property valuation process (Parker 2001). As a sizeable component of the client base for the valuation profession in Australia, the requirements of and approaches to valuation methodology by property fund managers are significant influences on professional practice for Australian valuers.

The following paper seeks to consider the inter-relationship between property fund manager decision making processes and valuation practice through:

- a review of relevant research into Australian property fund manager's requirements of and approaches to valuation methodology; and
- determining priorities, inputs and outputs through a survey of major Australian property fund managers.

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The paper concludes by posing questions for discussion by the valuation profession concerning the extent to which approaches to valuation methodology should be profession lead or client driven.

Generic Software Packages – the Conduit Between Property Fund Management and Valuation

Parker 2001 considered the decision-making processes of new millennium property fund managers reasoning that:

> "Institutional direct property investment has become an environment of alphas and betas, attribution, returns, indices and relativities" (Parker 2001 - p 427)

Further, the requirement for a much greater level of sophistication in property portfolio management and a dependence on returns forecasting demands high levels of accuracy, consistency and transparency.

This was contended to have resulted in a level of complexity in modelling that transcends the simple spreadsheet, leading to the adoption of generic software packages to facilitate decision-making for property portfolio management.

Generic software packages have been defined as software packages produced by a vendor which are widely available and may be distinguished from a proprietorial software package developed by a company for it's own sole use (Parker 2003a, Parker and Robinson 2000).

A range of such generic software packages exists including both locally developed applications and globally marketed applications such as DYNA, Cougar, Circle and Argus (Parker 2003a):

- www.therealm.com
- www.cougarsoftware.com
- www.circle-systems.co.uk
- www.argussoftware.com

In a major research project funded by the Cooperative Research Centre for Construction Innovation, Parker 2003b found that 92% (by funds under management (FUM)) of the property fund manager sample surveyed used generic software packages for portfolio management with 60% using DYNA, 32% using Cougar and 8% using Excel.

Further, based on FUM, DYNA was found to be the dominant package used by the property fund manager sample surveyed for valuation, acquisition/divestment and return forecasting.

> ‘whilst the property portfolio manager may consider DCF to be the principal form of valuation this may not be the view of the valuer’

Accordingly, therefore, with such a large proportion of the property fund management industry using generic software packages for valuation and with the property valuation process being inextricably linked to the decision making processes of property fund managers, generic software packages have become the conduit between valuation and property fund management decision making processes.

Parker 2001 also noted, for multi-tenanted properties over, say, $10 million, having dissimilar lease structures, that the valuation approach would usually be by capitalisation and discounted cash flow (DCF). Whilst the property portfolio manager may consider DCF to be the principal form of valuation, this may not, necessarily, be the view of the valuer. Further, Parker 2001 noted the growing trend for property fund managers to require valuations to be undertaken in their preferred generic software package.

Accordingly, therefore, that research literature reviewed suggests that Australian property fund managers may be contended to not only require DCF to be used as a valuation methodology but also to require the use of that approach to DCF codified in their preferred generic software package.

Effectively, with two principal generic software packages in use by the property fund management industry, those approaches to DCF valuation methodology contained therein have become the industry standard upon and against which the valuation profession is benchmarked.

Given the significance of generic software packages to the decision making processes of the property fund management industry, it is contended that an understanding, by the valuation profession, of property fund managers views on the priorities, inputs and outputs of generic software packages may be informative.

In order to determine the priorities, inputs and outputs of property fund managers for their preferred generic software package, a survey of major property fund managers was undertaken.

Survey of Major Property Fund Managers

A sample of twelve property fund managers was surveyed, including listed property trust, unlisted wholesale property fund and unlisted retail fund or syndicate managers, with funds under management of AU$66.7 billion in a cumulative portfolio comprising over 1,000 properties with over 21,000 tenants. Those offshore funds managed by Australian property fund managers were excluded from the survey.

This sample represents managers of 41% of the gross assets of the property fund management industry including seven of the ten largest managers as detailed in PIR 2003c. The survey is both indicative and representative of the new millennium masters of the Australian property fund management industry.

Using a survey form in a structured, face-to-face, confidential interview with a business representative of the manager (rather than an IT or accounting representative), responses were gathered concerning priorities, inputs and outputs with the findings detailed below.

Priorities

Generic software packages offer a range of benefits and limitations to the property fund manager. Determining which benefits are of greatest importance to the property fund manager may provide an insight into the decision making processes of property fund managers that may inform the valuation profession.

For example, if property fund managers consider capital expenditure modelling to be of relatively high importance but consider outgoings modelling to be of relatively low importance, the valuation profession may prefer to focus greater research and analysis on supporting their opinions on capital expenditure rather than on outgoings.

The survey sought to identify property fund manager's perceptions of the relative importance of benefits and limitations of that generic software package being used. This was achieved through the application by respondents of a score, through the use of a Lickert scale, of 1 (low) to 5 (high) for each of the following:

Benefits

- allows line by line treatment of income, expenses, capex, etc;
- not constrained by annual convention – can model monthly, quarterly, as billed, etc;
- not constrained by quarter percent convention – can model capitalisation rate, discount rate, growth rates, etc to any decimal place;
- no rounding – absolute numbers at each level of calculation;
- avoids double counting of risk and growth;
- contributes to an improvement in the quality of judgemental and market inputs;
- allows detailed modelling of vacancy;
- allows detailed modelling of terminal value timing;
- allows detailed modelling of reversionary adjustments in capitalisation;
- allows detailed modelling of lease expiries;
- allows detailed modelling of linked items of income and expenses (such as after hours air conditioning costs and recoveries);
- allows detailed modelling of outgoings;
- allows detailed modelling of turnover and turnover rents; and
- allows detailed modelling of capital expenditure and life cycle,

Limitations

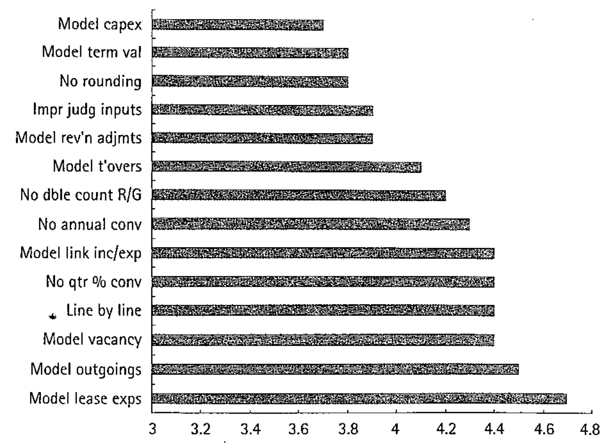
- dependent on the quality of judgemental and market inputs; and
- users lack the ability to clinically segment market inputs to avoid double counting of risk and growth

with the results given in Figures 1 and 2.

Relative Importance of Benefits of Generic Software Packages

The scores attributed by respondents to each of the identified benefits of that generic software package being used fell within a relatively narrow range of 3.7 to 4.7 with an average score of 4.2 (Figure 1). This indicates that respondents found each benefit to be of relatively high importance with those achieving the highest scores summarised in Table 1.

Figure 1: Relative Importance of Benefits of Generic Software Packages



Source: AMP Henderson, 2002

Highest Relative Importance of Benefits of Generic Software Packages

Table 1: Highest Relative Importance or Benefits of Generic Software Packages

Score	Benefit
4.7	Allows detailed modelling of lease expiries
4.5	Allows detailed modelling of outgoings
4.4	Allows detailed modelling of vacancy
4.4	Allows line by line treatment of income, expenses, capex, etc
4.4	Not constrained by quarter percent convention – can model capitalisation rate, discount rate, growth rates, etc to any decimal place
4.4	Allows detailed modelling of linked items of income and expenses (such as after hours air conditioning costs and recoveries)

It is considered significant that those property fund managers surveyed considered the greatest benefits of those generic software packages being used to be the ability to model lease expiries, outgoings, vacancy, line by line and income/expenditure linked items in detail.

It may, therefore, be contended that property fund managers may be likely to be more tolerant of a similar level of granularity in the cash flows underpinning externally prepared valuations of assets within their portfolios.

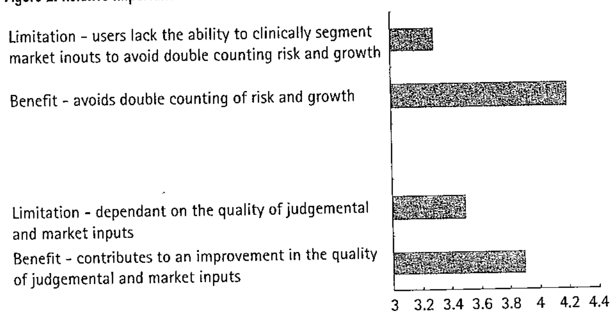
The high score attributed to being unconstrained by the quarter percent convention is particularly interesting. Whilst valuation methodology tends to cling to the use of capitalisation, discount and growth rates expressed in quarter percent multiples, few transactions appear to be capable of devaluation to exact quarter percent multiples.

If property fund managers find not being constrained by the quarter percent convention a benefit of generic software packages, it may be contended that they could appreciate externally prepared valuations that were similarly unconstrained.

As comparable sales are progressively analysed through the use of generic software packages and a greater understanding of risk and growth ensues, it may be contended that a natural evolutionary consequence may be the demise of such rules of thumb as the quarter percent convention.

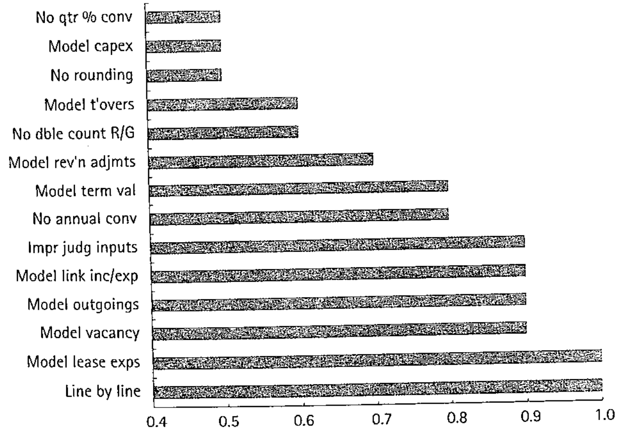
Whilst the identified limitations of generic software packages were the converse of identified benefits concerning the roles of risk/growth and judgemental/market inputs, respondents clearly found one aspect to be more significant than the other (Figure 2).

Figure 2: Relative Importance of Benefits and Limitations of Generic Software Packages



Source: AMP Henderson, 2002

Figure 3: Use of Benefits of Generic Software Packages



Source: AMP Henderson, 2002

Relative Importance of Benefits and Limitations of Generic Software Packages

By a sizeble margin of 4.2 compared to 3.3, respondents found the ability afforded by generic software packages to avoid the double counting of risk and growth to be a greater benefit than the limitation of users lacking the ability to clinically segment market inputs to avoid the double counting of risk and growth.

However, the benefit of generic software packages contributing to an improvement in the quality of judgemental and market inputs (3.9) was only marginally greater than the limitation of dependence on the quality of judgemental and market inputs (3.5).

In both cases, the potentially negative aspects of generic software packages were considered by property fund managers to be exceeded by the potentially positive aspects. It may be contended, therefore, that property fund managers may be likely to be more tolerant of a similar focus on risk/growth and judgemental/market inputs in the cash flows underpinning externally prepared valuations of assets within their portfolios and may be likely to be more intolerant of valuers unwilling to embrace the risk/growth distinction or lacking requisite support for their judgement.

Having identified property fund manager's perceptions of the relative importance of benefits and limitations of those generic software packages being used, the survey continued to investigate whether property fund managers were actually using such features in their modelling.

This was undertaken by the attribution of a score of "1" if the generic software package feature was used and "0" if the feature was not used by the property fund manager, with the averaged results given in Figure 3.

Use of Benefits of Generic Software Packages

The average scores attributed by respondents to the use of each of the identified benefits of the generic software package fell within a relatively wide range of 0.5 to 1.0 with an average score of 0.8. This indicates that respondents, overall, were using the majority of the benefits of generic software packages with just three of the fourteen identified features being used by only half the respondents. Those benefits most commonly used by respondents are summarised in Table 2.

Most Commonly Used Benefits of Generic Software Packages

Table 2: Most Commonly Used Benefits of Generic Software Packages

Score	Benefit	Rank
1.0	Allows line by line treatment of income, expenses, capex, etc	1=
1.0	Allows detailed modelling of lease expiries	1=
0.9	Allows detailed modelling of vacancy	3=
0.9	Allows detailed modelling of outgoings	3=
0.9	Allows detailed modelling of linked items of income and expenses (such as after hours air conditioning costs and recoveries)	3=
0.9	Contributes to an improvement in the quality of judgemental and market inputs	3=

Significantly, the benefits most commonly used by property fund managers mirror those ranked as most important, with the following exceptions:

- being unconstrained by the quarter percent convention was considered important but, interestingly, was one of the features used by only half of the respondents; and
- contribution to an improvement in the quality of judgemental and market inputs was considered one of the least important benefits but was found to be one of the most commonly used.

The findings concerning the most common use of generic software package benefits underlines the contention, above, that property fund managers may be likely to be more tolerant of a high level of granularity, visibly supported by enhanced market/judgemental inputs, in the cash flows underpinning externally prepared valuations of assets within their portfolios.

'the survey sought to investigate the approach adopted by property fund managers'

Having identified the priorities of property fund managers concerning the importance of benefits and limitations of generic software packages and those most commonly used, the survey went on to investigate the role of inputs and outputs of generic software packages within property fund manager's decision making processes in the context of valuation.

Inputs

Use of generic software packages within the decision-making process by property fund managers requires determination of various inputs other than those of a judgemental nature (capitalisation, discount, growth rates, etc).

Those inputs being used by property fund managers in generic software packages provide a valuable insight into which variables are being handled by conventions of convenience and which by specific data.

For example, if property fund managers are using a convention of convenience of "say +3%" for rent reviews, this will have a different impact on the results of a DCF than the use of specific data for tenancy by tenancy rent reviews on their actual basis.

Accordingly, if using a specific data input, property fund managers may be tolerant of external valuers doing the same and intolerant of valuers using a convention of convenience.

The survey sought to investigate the approach adopted by property fund managers to the determination of eleven inputs, the basis of each potentially having an impact on the outputs of the model when combined with judgemental inputs.

It was established that every respondent used the generic software package to make explicit allowance with specific data for:

- reletting costs;
- non-recoverable outgoings;
- rent reviews;
- vacancy; and
- incentives

with all respondents using both the DCF and capitalisation methods.

Regarding other inputs, the findings were mixed:

Cash Flow Period

Whilst 64% of respondents used one cash flow period principally, 36% of respondents used a combination of two cash flow periods. Interestingly, only 9% of respondents used a 20 year cash flow period with 73% using 10 years and 55% using 5 year cash flow periods. Given the traditional focus on 10 year cash flow periods, the use by over half the sample of 5 year cash flow periods is considered significant.

Cash Flow Frequency

Significantly, none of the respondents used annual cash flow rests with 82% using monthly and 18% quarterly cash flow rests. The focus on monthly cash flows is considered consistent with the granularity of cash flows and universal recognition of reletting costs, non-recoverable outgoings, etc referred to above.

Advance vs Arrears Cash Flows

Only one property fund manager modelled cash flows both in advance and in arrears. Of the balance, 57% modelled in advance and 43% in arrears indicating an approximately even split in approaches between property fund managers.

Face vs Effective Rents

60% of respondents modelled rentals on both a face and effective basis, with 30% modelling on an effective basis only and 10% modelling on a face basis only. Accordingly, 90% of respondents include effective rents within modelling which is considered significant.

Transaction Expenses

Whilst 75% of respondents included acquisition and disposal costs in cash flows, a surprising level of 25% did not. Further, of those who allowed for transaction expenses, four approaches to the determination of the allowance were identified as follows:

Property by property basis	25% of respondents
State by State basis	25% of respondents
Pre-determined, fixed amount	38% of respondents
Hybrid of above	12% of respondents

The significance of the proportion of the sample not allowing for transaction expenses and the diversity of approaches amongst the proportion making allowance were surprising findings.

Capital Expenditure Allowance

Whilst all respondents made explicit allowance for capital expenditure, 50% of respondents made a periodic allowance in cash flows on a subjectively determined basis, property by property. A further 33% made such an allowance but also made specific allowance for operational and make good capital costs. Only 17% of the respondents made assessments on an objective basis, including a fixed percentage of asset value annually and allowances as advised by consulting engineers. Accordingly, therefore, whilst allowance for capital expenditure is universally made, the basis upon which it is made varies considerably.

Finally, the survey sought to ascertain whether property fund managers made inputs as point estimates, ranges or ranges with probabilities and found the majority (58%) used ranges including two respondents who used a combination of most likely and other scenarios. None of the respondents used ranges with probabilities which is an interesting finding concerning the current limits of modelling sophistication by property fund managers.

It is interesting that, whilst all respondents made allowance (within the decision making process) for each of the above eleven inputs, the nature of the allowance varied for six and varied considerably for two of the inputs.

> ‘outputs from generic software packages used by property fund managers provide a valuable insight’

Accordingly, based on the survey findings, a property fund manager may be likely to be more tolerant of a valuer who uses:

- specific data for reletting costs, non-recoverable outgoings, rent reviews, vacancy and incentives;
- both 5 and 10 year cash flow periods with monthly cash flow rests;
- effective rents with cash flows modelled in advance; and
- a defensible and consistent approach to transaction expenses and capital expenditure.

Having investigated the role of inputs into generic software packages by property fund managers within their decision making processes in the context of valuation, the survey went on to investigate the role of outputs.

Outputs

Those outputs from generic software packages being used by property fund managers provide a valuable insight into the focus of their decision making processes.

For example, if the prevailing criterion for decision making purposes by property fund managers is Modified Internal Rate of Return (MIRR), there could be limited benefit in the valuation profession focussing on Net Present Value (NPV) as the principal output.

The survey further sought to investigate the use, by property fund managers for decision-making purposes, of key outputs from generic software packages with the results given in Table 3.

Use of Key Outputs From Generic Software Packages

Table 3: Use of Key Outputs from Generic Software Packages

Output	Always	Sometimes	Never
IRR	67%	25%	12%
NPV	67%	25%	12%
PV	27%	46%	27%
Terminal CV	50%	33%	17%

Incredibly, one respondent claimed not to use any of the four identified outputs from generic software packages for decision-making, which begged the question as to the basis upon which decisions were made by that property fund manager. However, for the purposes of completeness, the response was included within the results in Table 3.

Whilst the high level of use of both IRR and NPV by property fund managers was not surprising, the use of terminal capital value and present value was considered surprisingly high.

The survey continued to ascertain that 91% of respondents did not use MIRR or Financial Management Rate of Return (FMRR) as alternative outputs to IRR in decision-making. Given the nature of the survey sample, the low level use of relatively well-established outputs such as MIRR and FMRR was considered surprising and an interesting finding concerning the current limits of analytical sophistication by property fund managers.

Finally, the survey sought to ascertain whether property fund managers reported outputs as point estimates, ranges or ranges with probabilities finding 46% of respondents reported ranges, 36% reported point estimates and 9% reported both. Only one respondent provided a best/likely/worst scenario report and none of the respondents attached probabilities to ranges in reporting for decision-making purposes.

Accordingly, with the exception of IRR and NPV, those outputs from generic software packages actually used by property fund managers for decision-making purposes were found to be surprising. The use of terminal capital value and present value surprised in it's frequency and the use of MIRR and FMRR surprised in it's infrequency.

It may, therefore, be contended that, whilst property fund managers could expect a greater focus by valuers on IRR and NPV, they may appreciate a focus on terminal capital value and present value in externally prepared valuations of assets within their portfolios, with the provision of MIRR and FMRR (with explanation) a potential value add in the entrepreneurial independent valuer's report.

Summary

That research literature reviewed established the widespread use of generic software packages for decision-making purposes by Australian property fund managers and a growing trend in requiring valuations to be undertaken in a preferred generic software package.

With the preference of property fund managers for the use of the DCF method of valuation for major income producing properties, the use of that approach to DCF codified in the preferred generic software package is implicit.

Accordingly, property fund managers' priorities, inputs and outputs of generic software packages is informative for the valuation profession and may be summarised as follows:

- the clear priority of property fund managers was the use of such benefits of generic software packages as modelling lease expiries, outgoings, vacancy, line by line and income/expenditure linked items in detail;
- the input categories required by property fund managers are clear, though the nature of allowance for transaction expenses and capital expenditure varies considerably between managers; and
- the outputs used by property fund managers are clearly moving beyond NPV and IRR, but have yet to reach MIRR and FMRR.

There are, therefore, clear conclusions for the valuation profession that may be drawn from the above, together with some questions that may be posed for discussion by the valuation profession concerning the extent to which approaches to valuation methodology should be profession lead or client driven.

> ‘the research literature reviewed established the widespread use of generic software packages’

Conclusions

Whilst the valuation profession may have been driven to the use of generic software packages by their client base, the priorities of property fund managers identified in this research provide the valuation profession with clear guidance on where to focus in the DCF process for greatest relevance to property fund manager clients.

Further, whilst the extent of input categories is clear, the ambiguity surrounding the nature of the allowance for certain key input categories and differences in approach between property fund managers provides the valuation profession with an opportunity to lead through the identification and promotion of a common approach.

Similarly, whilst an increasing focus by the valuation profession on terminal value and present value may be client driven, the valuation profession has an opportunity to lead the property fund managers through the explanation, promotion and adoption of MIRR and FMRR for decision-making purposes.

With the decision making processes of property fund managers inextricably linked to the property valuation process and the property valuation process inextricably linked to the use of generic software packages, the use of such generic software packages by the valuation profession provides common ground and clear opportunities for the valuation profession to lead the client going forward.

Indeed, the common ground that has been created between the property fund manager and the valuation profession by generic software packages now provides the valuation profession with potentially significant scope to influence future decision-making by a sizeable part of the Australian property industry.

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