DCF 4 – Theory and Practice: The State of Play

By Dr David Parker, FAPI, FRICS, FSIA

As General Manager of the Australian Valuation Office, Dr Parker is the leader of the country's largest valuation practice, being a self-funding government business operation with some 130 staff in 11 offices in all States and Territories and handling over 50,000 valuations each year.

Dr Parker is a member of the Institute's Australian Valuation and Property Standards Board, a former Divisional Councillor in New South Wales, Victoria and Queensland, former member of the National Education Committee and past winner of the Institute's Ronald Collier, Peter Barrington, Ian Melville and Harry Thomas Awards.

Having contributed over 25 papers to property journals, Dr Parker is a regular conference speaker both in Australia and overseas, an Adjunct Professor at the University of Queensland and the University of Western Sydney and a Visiting Fellow at the University of Ulster in Northern Ireland.

Contact details:
GPO Box 3249, Sydney NSW 2001
Tel: 02 6229 3401
Fax: 02 6230 5060
Email: parkerdsev@bigpond.com

In the following article, Dr Parker presents the fourth and final in a series of short, inter-related papers on current professional practice issues concerning discounted cash flow (DCF).

With the API now adopting IVGN9 for DCF, what are the differences to previous API Practice Standards on DCF?

Previous papers considered survey findings concerning the inter-relationship between property fund manager decision making processes and valuation practice, the impacts on valuers of trends in property fund management and key aspects of IVSC GN No. 9.

Just how widespread is the use of Discounted Cash Flow (DCF)?

A survey of twelve Australian property fund managers with on-shore funds under management of AU$66.7 billion invested in major office, retail and industrial property investments (detailed in Parker, 2004A) found 86% of respondents required DCF to be undertaken. Clearly, therefore, in the institutional segment of property valuation practice, DCF is widely used.

Within the office sector (which may be assumed to include the lending, private investor, corporate real estate and other segments as well as the institutional segment), a survey of "64 API members who are registered as experts in valuing commercial offices in NSW" by Asakura (2003) found that, whilst 60% of respondents used DCF, only 10% used it as the primary approach. Accordingly, therefore, in the office sector of property valuation practice generally, the use of DCF may be lower than in the institutional segment.

For the valuation profession in Australia as a whole, the extent of use of DCF does not appear to have been determined. For indicative purposes, a poll of approximately 100 delegates was conducted during a parallel session on DCF at the API Queensland Property Conference in November 2004 which indicated approximately 15% of delegates regularly used DCF.

Given that the other parallel session concerned the valuation of residential property with approximately 250 delegates, this could suggest that less than 5% of the valuation profession as a whole regularly use DCF.

It would, therefore, appear that the use of DCF may be related to the magnitude of the valuation, with a high level of use of DCF for high value institutional properties and decreasing use of DCF as the value of properties decreases.

For approximately 95% of valuers in Australia, DCF may be irrelevant but for the other 5% it may be of relevance and for a small portion of that 5% the finer points of DCF theory could translate into millions of dollars in underlying property value.

For the small portion of that 5% with so much at stake, it may reasonably be anticipated that knowledge of the theory and practice of DCF would be high. But what of the balance of that 5% and of the remaining 95%?

Sources of Information

The International Valuation Standards Committee (IVSC) notes:

> "Detailed examination of methodology and its application to specific property types or markets is the province of specialist education and literature. For this reason, the IVSC encourages all professional Valuers to avail themselves of continuing education programs throughout their careers" (IVSC 2003)

Accordingly, IVSC identifies separate roles for textbooks/literature, CPD and Practice Standards/Guidance Notes, encouraging practitioners to source the theory from textbooks/literature and practice from CPD with the role of Practice Standards being to:

> "Prescribe what Valuers do rather than explain how specific procedures or methodologies are applied. The IVSC recognise that every application is tied to a specific valuation problem, the solution of which depends on the Valuer's ability to select relevant techniques and exercise appropriate judgement." (IVSC 2003)

and the complementary role of Guidance Notes being to

> "Provide guidance in the application of valuation methodologies" (IVSC 2003)

Those delegates in the parallel session on DCF at the API Queensland Property Conference in November 2004 who did not regularly use DCF were polled to determine their sources of information on DCF, using the IVSC categories of textbooks, CPD and Practice Standards/Guidance Notes, with the following results:

Table 1: Sources of Information on DCF

Source of Information	% Respondents
Textbooks	40.0%
"Valuation Principles and Practice" (1997)	2.4%
Other text books	37.6%
CPD events	1.2%
Professional Practice 2004 (API 2004)	36.5%

Source: Author

The results of the poll are contended to be very surprising and are considered sequentially below.

Textbooks

As a source of information, the use of textbooks was largest by a very small margin. To find such a low level of use of *Valuation Principles and Practice* (1997) is extremely disappointing, particularly as Chapter 13 by Robert Webster contains an excellent introduction to and explanation of DCF.

To find such a high level of use of other text books is also disappointing as it suggests practitioners find such texts preferable to the Institute's principal textbook.

Whilst the poll did not continue to determine which other text books were used, it may be noted that Pyhrr et al (1989) and Baum and Mackmin (1979) each include useful introductions to and explanations of DCF.

CPD

As a source of information, CPD rated extremely low though, effectively, by their presence all delegates in the parallel session were sourcing information on DCF through CPD.

API CPD events solely focusing on how to undertake DCF are to be offered again by the NSW Division (for further details, contact Veronica Bondarew on vbondarew@nsw.propertyinstitute.com.au).

Similarly, Universities are again offering external courses on DCF, such as the highly regarded external course at QUT that is likely to be offered again in 2005 (for further details, contact Professor Terry Boyd on t.boyd@qut.edu.au).

Learning about DCF offers the opportunity for self directed learning that may contribute CPD hours under the API programme. For example, reading *Valuation Principles and Practice* (1997) and then applying the theory in practice by developing a spreadsheet DCF model as a focussed learning exercise could meet the API's requirements for qualification as CPD.

Practice Standards and Guidance Notes

Second only to textbooks, Professional Practice 2004 (Australian Property Institute 2004) was identified as a source of information on DCF by 36.5% of delegates.

This was very surprising as Professional Practice 2004 does not contain specific information on DCF. Whilst approximately 26 general references to DCF appear, Professional Practice 2004 does not include a Practice Standard, Guidance Note or substantial focus on DCF.

Accordingly, 36.5% of delegates were using a source of information on DCF that does not exist. On the assumption that the majority of delegates were practising valuers and API members, this is a disconcerting finding but may reflect the history of previous documents including:

- API PS2 (API 1996) – the original Practice Standard released in September 1996 and withdrawn in August 1998, as considered in Boydell and Gronow (1997) and Parker (2002);
- an Exposure Draft released in 1999 (1999 ED) (API 1999); and
- an Exposure Draft released in 2001 (2000 ED) (API 2001) analysed in Parker (2002).

In July 2004, following the release of International Valuation Guidance Note No. 9 (IVGN9) (International Valuation Standards Committee 2003) by the IVSC, the API Asset Valuation and Property Standards Board agreed that the API should adopt IVGN9 as being applicable in Australia, with no requirement to develop a local Guidance Note.

Interestingly, it is not only practitioners that are confused about the status of the API Practice Standard on DCF but also clients. Of the sample of twelve property fund managers surveyed in Parker (2004A), 67% required their valuers to use the API Practice Standard on DCF, apparently unaware of its non-existence.

There would, therefore, appear to be considerable confusion amongst both valuers and clients regarding the status of the API Practice Standard on DCF such that communication of its replacement by IVGN9 may be beneficial.

In the period between August 1998 (when API PS2 was "withdrawn") and April 2003 (when IVGN 9 became effective), the void in practice standards and guidance on DCF was effectively filled by the manuals for generic software packages such as DYNA and Cougar. It was, therefore, software designers and vendors rather than valuers and clients who determined the codification of DCF practice in Australia.

It may be contended to be significant that the IVSC issued advice on DCF as a Guidance Note ("provide guidance in the application of valuation methodologies") rather than as a Practice Standard ("prescribe what Valuers do"), providing practitioners with considerably greater flexibility.

Philosophically, therefore, the IVSC approach of a Guidance Note differs significantly from that of the API who issued a Practice Standard.

What Are The Rules For DCF?

Following the API adoption of IVGN9 as being applicable in Australia, that document effectively comprises the rules for DCF for the Australian valuation profession.

It should be noted that IVGN9, whilst mirroring the 1999ED, differs from the 2000ED in several key areas of valuation practice, including those detailed in Table 2.

Accordingly, the following practices, which are common in Australia, are inconsistent with IVGN9 and valuers may wish to amend their approach to DCF accordingly:

- a single discount rate where a property has multiple cash flows, with multiple discount rates appropriate;
- a single figure cash flow where a property has multiple leases, with lease by lease cash flows appropriate;
- no allowance for vacancies, where an allowance for vacancies is appropriate;
- no allowance for capital expenditure, where an allowance for capital expenditure is appropriate; and
- no allowance for option exercise, lease renewal and costs, where an allowance for option exercise, lease renewal and costs is appropriate.

In the event that a valuer is of the opinion that a local practice differs from that specified by IVGN9, the practitioner is expected by IVSC:

> "to quantify and explain the consequent differences in value" (IVSC 2003)

which places a considerable burden on local practitioners to value under both of the respective bases and explain the difference.

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As noted in Parker (2004C), those valuers using DYNA, Cougar, another generic software product or proprietorial software for DCF are responsible under IVGN9 for the construction or selection of the model and the integrity of the model in terms of theoretical and mathematical correctness. It is, therefore, the responsibility of the valuer as user to ensure that the software accords with IVGN9.

Valuers should also note the increased level of support for assumptions required under IVGN9, including (but not limited to) the five aspects of quantity, quality, variability, timing and duration referred to in Parker (2004C).

Where Next?

The development of sources of information on DCF presents an interesting insight into the impact of globalisation on the valuation profession. Concerning textbooks, it appears those by authors other than the local professional body are preferred by practitioners. Regarding regulation, it is the rules of a global body rather than a local body that have prevailed.

In terms of where valuers should look for guidance on current theory and practice for DCF, the mathematics is now clearly settled in the textbooks and the process in IVGN 9.

In the short term, there would appear to be the need for provision of support to valuers for the adoption of IVGN 9 by valuers.

Development of templates and checklists that ensure adherence to the requirements of IVGN 9 would assist practitioners as would CPD events or short courses explaining the requirements and implications of IVGN 9 for practitioners. Similarly, provision of data and trend analysis based on rigorous market surveys would assist practitioners fulfil their obligations for support for assumptions, quality control, reporting requirements and other aspects of IVGN 9 (Parker 2004C).

The debate over DCF has moved from process to judgement, allowing a focus on those judgemental inputs to the process which should be where the professional valuer can add the greatest value to the client.

Looking forward, now that the debate over the legitimacy and process of DCF has been completed, the valuation profession can start

Table 2: Differences between 1999ED, 2000ED and IVGN9

	1999ED	2000ED	IVGN9
Assessment of worth	Included	Excluded	Included
Multiple discount rates	Allowed with explanation	Prohibited	Allowed
Support for assumptions	Relevant evidence	Appropriate evidence	Express with five aspects specified
Lease by lease cash flows	Specified	Silent	Specified
Allowance for vacancies	Specified	Silent	Specified
Allowance for capital expenditure	Specified	Silent	Specified
Reflection of option exercise, lease renewal and costs	Specified	Silent	Specified

Source: Author and Parker (2002)

to consider the opportunities afforded by DCF to link the valuation of property closer to the valuation of other asset classes.

An increasing application of finance theory to discount rate selection may be likely to feature more prominently in the medium term, with clients asking their valuers to justify the discount rate selected in the context of the prevailing conditions in the equity or bond market.

Further, in the longer term, the integration of techniques from options theory into property valuation practice may be facilitated by DCF and offer enormous insights into the nature and composition of property value.

With the discussion of DCF theory at an end, the discussion of opportunities for DCF practice is only just beginning.

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