INVESTMENT DECISIONS: DISCOUNTED CASH FLOW AND OTHER VALUATION METHODS IN LITIGATION

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In the course of a comprehensive review of discounted cash flow and other valuation methods, Mr Brown argues for a greater acceptance by Australian courts of discounted cash flow as a valuation method in appropriate litigation on investment decisions.

Introduction

Courts decide disputes on the facts and circumstances of each case. Certain cases require evidence of the worth or value of assets.[1] No one can categorically state that the value of an asset is $Y. The best evidence of value available is the prevailing market price. For example, the value of a BHP share is what is offered for it on the stock exchange. Where there is little or no market value readily ascertainable, the best form of secondary evidence is the opinion of an expert. Over the past 30 years a theory of value to determine the value of an investment decision has been developed by researchers in finance theory. The technique is known as discounted cash flow analysis. Using discounted cash flow analysis, the value of a project is said to be the sum of its net cash flows discounted to a present value. Since discounted cash flow analysis is used by most large corporations as an aid when investing in any project, the question arises: would an expert's opinion of the value of an asset derived from discounted cash flow analysis be an acceptable method of valuation for an Australian court?

Methods currently accepted by Australian courts rely on some tangible evidence, such as past earnings and/or realisable value of the asset. Discounted cash flow analysis to some extent relies on projecting the past into the future.

This article looks at whether there are too many unknown items which have to be taken account of in discounted cash flow analysis for courts to accept the technique as a method of valuation. The conclusion reached relies upon the decisions on valuation methods in Canadian, American, British and Australian courts.

The Concept of Value

Much has been written about the concept of value in the literature of economics, finance and law. Value is a question of perception. What is value for one person may not necessarily be value for another. Value depends on what is being valued, when the valuation takes place, the method chosen and the quantity of the asset being valued.

However, for assets to be traded, a value must be determined between buyers and sellers. The larger the market and the more efficient the market, the more one can rely on the market-determined value.[2]

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1. The term "asset" throughout the article means a piece of property which has the possibility of earning revenue for the owner, such as a share, land, a business or a company.

2. Another term which could be used to define a market-determined value is "price".

The purpose of a valuation will affect and determine the method chosen.[3] One method of valuation is not necessarily better than any other. Each has its own special purpose where it has a comparative advantage over the others. In determining the value for insurance purposes, for example, the owner is not concerned with the book value of the asset, nor necessarily its market value, nor the liquidation value. What is relevant to the owner is the cost of replacing the asset if destroyed.

Courts are required to determine the value of assets in numerous situations. The reasons courts have been required to determine value are: to resolve questions concerning the sale and purchase of businesses; to determine the financial terms under which an existing partner is bought out or admitted to a practice; as an indication of security when obtaining or advancing finance; to determine the value of assets to be divided in divorce proceedings; to determine whether takeover offers are fair and reasonable; for corporate re-construction and re-organisation; as a basis for the assessment of stamp duty; to determine the value of shares to be sold or purchased pursuant to orders of a court under the *Companies Code*; to determine whether shares have been issued at a discount or premium for the purposes of the *Companies Code*; to divide property in deceased estates; to determine the value of a business being converted into a company; to determine the liability for capital gains tax; to determine adequate compensation following compulsory acquisition of an asset; to determine value of land for the purpose of rating and for land valuation appeals.

Courts' Views on Value

In determining valuation cases courts determine value given the circumstances of each case.[4] The circumstances of each case are each case's own particular facts and the evidence of experts on the value of the asset in question.

However value is determined it is rarely a "fact" in the sense the term is normally used. A fact is a statement of what actually happened: I saw the accused hit the deceased. A valuation is not a factual assertion in this sense. It is an opinion given by a person who holds himself out as having experience in an area over and above that of most people.

Ever since the 16th century,[5] English courts have permitted expert evidence to be admitted. The circumstances in which expert evidence has been admitted arise when matters of science or specialised areas of knowledge and practice are required for the court to rely upon and come to a decision on a particular factual issue.

Courts' views about value and valuation methods are not (usually) determined from personal knowledge or experience of the tribunal of fact (either the jury or a judge sitting alone), but from expert opinions put before the court by the parties in contested litigation.[6] In theory the rôle of the expert witness is to assist the court to arrive at its determination of the facts of a case. In practice the evidence of each litigant's expert witness tends to espouse the cause of the party by whom the witness is called. Consequently, the value of expert witnesses' evidence has been doubted.[7] For this reason the courts have jealously guarded their duty to be the final arbiter of determining what is the value of an asset in any dispute.[8]

The classic statement in Australia on the nature and character of "value" was made by Griffith C.J. in *Spencer v. The Commonwealth:*[9]

> "In my judgment the test of value of land is to be determined, not by inquiring what price a man desiring to sell could actually have obtained for it on a given date, i.e., whether there was in fact on that day a

3. See *Housing Commission of N.S.W. v. Falconer* [1981] 1 N.S.W.L.R. 547 at 570 per Mahoney J.A. and *Commissioner of Succession Duties (S.A.) v. D. Clifford's Executors* (1947) 74 C.L.R. 358 at 373 per Dixon J.
4. *In re Bird Precision Bellows Ltd* [1986] 1 Ch. 658 at 662; *Leader v. Hycor Inc.* 479 N.E. 2d 173 Mass. (1985).
5. *Buckley v. Rice Thomas* (1554) 1 Pl. 118 at 124-125; 75 E.R. 182 at 192-193 per Saunders J.
6. In this context we are not considering such special judicial or quasi-judicial bodies, like Land and Valuation Councils.
7. D. M. Byrne and J.D. Heydon, *Cross on Evidence* (3rd Aust. ed.), 1986, Butterworths, Sydney, par. 15.2.
8. *Re Dalkeith* (1985) 3 A.C.L.C. 74 at 81 per McPherson J.
9. (1907) 5 C.L.R. 418.

> willing buyer, but by inquiring 'What would a man desiring to buy the land have had to pay for it on that day to a vendor willing to sell it for a fair price but not desirous to sell?' It is, no doubt, very difficult to answer such a question, and any answer must be to some extent conjectural. The necessary mental process is to put yourself as far as possible in the position of persons conversant with the subject at the relevant time, and from that point of view to ascertain what, according to the then current opinion of land values, a purchaser would have had to offer for the land to induce such a willing vendor to sell it, or, in other words, to inquire at what point a desirous purchaser and a not unwilling vendor would come together."[10]

The so-called test of Griffith C.J. is equally applicable for rating purposes, stamp duty purposes and the valuation of company shares and businesses. The views contained in the classic statement are echoed throughout the common law courts.[11]

It is clear from reading the classic statement that, although stated to be a test, it is, rather, a principle by which courts are to be guided in determining whether a method of valuation determines what is or what is not fair value.[12] Fair value, by definition, must be that value which rational parties, dealing at arm's length in the market-place and being apprised of all the facts then available, would arrive at as the price at which a sale would be consummated. Given the use of expert evidence by courts to fulfil their function to determine fair value it would not be surprising to learn that the case-law about value and valuation methods follows in the wake of commercial thought, practice and developments.[13]

Value in Finance Theory

In finance theory, purchases and sales in efficient markets are zero sum transactions. If you pay $850 for a bond with a promised yield of 8 per cent, you expect to receive over the life of the bond cash inflows whose present value is exactly $850. Your investment outlay ($850) equals the discounted cash inflows ($850). The buyer does not gain value, the seller does not lose value. The sum of the sale value minus the purchase price is zero.

An efficient market is a market where the buyers all have the same knowledge and information about assets. New information is rapidly disseminated to all buyers. Sales in efficient markets occur at the fair value of an asset. Fair value does not mean ultimate future value. It means an equilibrium price which incorporates all the information available to buyers at the time the transaction occurs.

The consequences of a market being efficient are as follows:

- Given the level of information currently known, purchasers and sellers should trust market prices as setting the fair value of an asset.
- The arrival of new information may change the value of an asset. The change may either increase or decrease the asset's value.
- Since the fair value of an asset reflects all relevant information then known, the value (price) of the asset will change when *and only when* new information arrives.
- The value of an asset is a function of its risk-return profile. A bond with a return of 10 per cent over 12 months compared with a bond with the same term but a return of 8 per cent will be worth more. The risk of not receiving a return from each bond is the same. This is reflected in a lower value being paid to buy the bond with 8 per cent promised return than the bond promising a 10 per cent return.

10. Ibid, at 432.
11. In Australia see A. Hyham, *The Law Affecting the Valuation of Land in Australia*, 1983, Law Book Co. Ltd, Sydney, ch. 2, for numerous Australian cases which echo the classic statement; for the U.K. see *Minister for Public Works v. Thistlethwayte* [1954] A.C. 475. For the American cases which echo the same classic statement see the Note, "Valuation of the stock under appraisal statutes" (1966) 79 Harv. L.R. 1453, esp. at 1460-1463.
12. For a discussion on this issue see the decisions in *Melwood Units Pty Ltd v. Commissioner of Main Roads* (1978) 52 A.L.J.R. 593 of the High Court and the Privy Council reported at [1979] 1 All E.R. 161.
13. See S.S. Adamson, *The Valuation of Company Shares and Businesses* (7th ed.), 1986, The Law Book Co. Ltd, Sydney, pp. 57-58.

- Buyers and sellers are economically rational. As such, the time value of money is impounded in the value of assets. Bonds which pay monthly interest are worth more than bonds which pay interest annually. Why? Because the interest received from bonds paying interest monthly can be reinvested immediately and earn more interest.
- Today's values are the best estimate of future values. Statisticians call the process where the best estimates of the next period's value is the previous period's value a "random walk". The term comes from the example used to explain the process. If you see a drunk walking randomly in a field, and later you wish to find where the drunk is lying in the field, the place to set out to find him is where you last saw him. Similarly, in valuing an asset, if value behaves strictly as a random walk and if the only information you have is the value today, the best estimate of next year's value is its value today.

It is strictly imprecise to speak of shares and land values as following a random walk. The value of shares and land are a wandering series with shifts (or expected changes) in each period but with a constant variability over time.[14] Such a series is called a submartingale. Although future values cannot be forecast ahead of time, a trend of increased growth in a company can be expected. The reason for this is because the expected changes per period have a constant variability; as such it is a safe bet to expect the trend to continue in the next period. Consequently, in looking at assets in an appreciating market the random walk analogy is not strictly accurate. To continue with the analogy, if the drunk behaved as a submartingale we would expect to find him in the same direction we last saw him but more likely than not some distance ahead of where we last saw him, rather than in any other direction.

By considering the consequences of efficient markets, a theoretically sustainable method of valuation has been developed. Initially, discounted cash flow analysis was used only to assess the value of proposed investment decisions. Today the technique is being used as a method of valuation. (See Table 1, pp. 19-20.)

The reason for discounted cash flow analysis being a theoretically sustainable method of valuation is because the empirical evidence supports the validity of the efficient market hypothesis.[15] Accordingly, if the real world has efficient markets, then people value assets in a rational manner consistent with the methodology employed in discounted cash flow analysis.

The Compatibility of the Legal and Financial Views of Value

Until lawyers understand the concept of value used in world markets, errors of judgment are likely to be made. For instance, in *Buckingham v. Francis*,[16] an oppression case, Staughton J. in determining the value of shares considered the figure which a purchaser would require as a profit/earnings ratio. The defendant's expert witness (an accountant) stated that the capitalisation rate used to value a company "clearly . . . cannot be less than the risk free rate of return available on gilts".[17] Staughton J. made the following comment:

> ". . . I do not know why he says with such confidence ('clearly') that a purchaser would not accept a lesser yield when buying a private company than he could obtain in the gilt-edged market . . . ."[18]

What Staughton J., with respect, failed to understand is that the value of an asset is a function of its risk-return profile. The return on a gilt-edged security (for example, an Aussie Bond) is government guaranteed. The return is therefore without risk (risk free), whereas the return on operating a business or company is not guaranteed. Investment in a company is riskier than buying an Aussie Bond (risk free). Consequently, no rational investor would invest in a company if the expected return is no greater than the risk free rate of return.

14. R. Brealey and S. Myers, *Principles of Corporate Finance* (2nd ed.), 1987, McGraw-Hill Book Co., Singapore, p. 269 and J.F. Weston and T.E. Copeland, *Managerial Finance* (8th ed.), 1986, The Dryden Press, CVS Publishing Japan Ltd, Japan, ch. 13.
15. Weston and Copeland, op. cit., p. 454 and see R.R. Officer, "Profit Forecasts in Published Reports" (1985) 25 (May) *Companies and Securities Bulletin* 2-8.
16. [1986] 2 All E.R. 738.
17. Ibid., at 742.
18. Ibid.

The value arrived at by the desirous purchaser and a not unwilling vendor in *Spencer v. The Commonwealth*[19] can be seen as defining in a practical sense the equilibrium value which brings together sellers and purchasers in the market. The seller is happy to sell as he gets in money terms the "fair value" of his asset. The buyer is happy as he pays a "fair price" for the asset (as at the time of purchase he expects to receive over the life of the asset cash inflows equal to the present value of the price he pays). As nobody gains at the expense of the other, the value is fair: a zero sum transaction.

Given the compatibility of the courts' concept of "value" with that found in finance texts — and in particular the compatibility with how value can be determined — is the discounted cash flow method of valuing an asset an acceptable method for ascertaining value in Australian Courts?

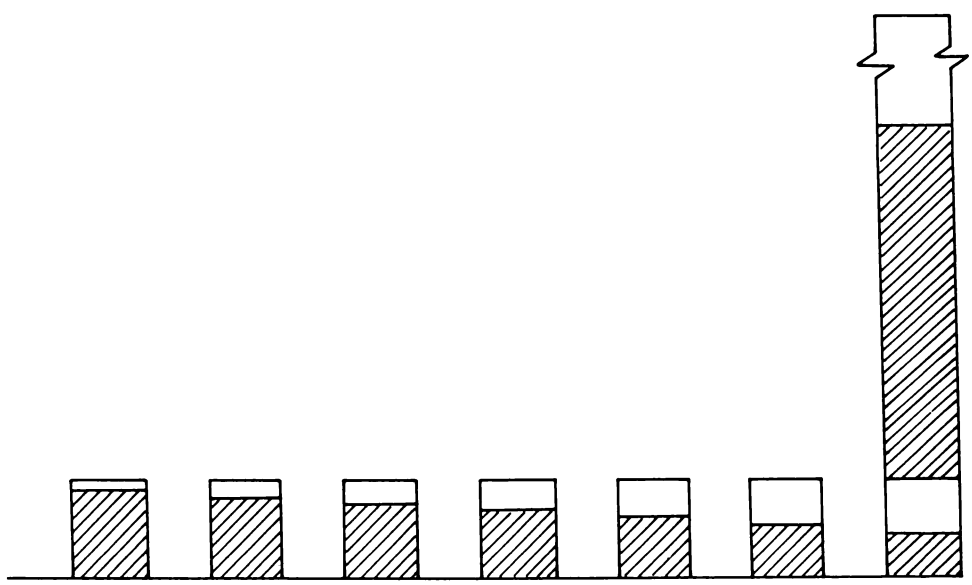
The remainder of the article concentrates on the methods of determining the "fair" value of an asset, centring on discounted cash flow analysis and showing situations when discounted cash flow analysis yields better results than competing methods.

Discounted Cash Flow Analysis as a Method of Valuation

We now turn to look at what discounted cash flow analysis is and how it is used to determine the value of an asset. Assets, like land, shares, bonds and businesses can have a value greater than the sum of their constituent parts. Companies create value by combining the products they make, the people they employ and the tangible assets they own. This ability to create value has been called "goodwill" or "organisation value".[20]

Any asset earning positive cash inflows in excess of the value of its constituent assets (book value) creates value. The quantification of how much value is created can be determined by discounting the net cash flows back to a present day monetary lump sum equivalent. The monetary lump sum equivalent is the present value of the individual future receipts. To understand the concept of present value, it is helpful to look at the concept pictorially. Figure 1 (infra) shows the cash flows of a seven-year 10 per cent bond. The capacity of each container is the nominal amount of the cash flow to be

Figure 1. Cash Flow and Present Values of a Seven-year 10 per cent Bond



19. (1907) 5 C.L.R. 418.

20. Weston and Copeland, op. cit., n. 14, p. 683.

received at a future time. The shaded area of each cash flow represents the present value of that cash flow. The sum of the shaded areas is the total present value of the 10 per cent bond.

An essential feature of the discounted cash flow technique is that it explicitly recognises that a dollar today is worth more than a dollar next year. This is because today's dollar can be reinvested during the intervening time. The discounted cash flow technique involves:

- Estimation of the expected future cash flows over the period being analysed (from income and capital gains);
- Discounting such future cash flows at the company's cost of capital to reflect the risk that the future returns may not eventuate;
- Serious consideration by the valuer of the level of future cash flows and the future earning potential of the asset being evaluated. The valuer must implicitly take account of the organisation value of an asset which historic data cannot adequately handle.[21] For instance, the valuer should consider in minute detail the future plans of a company. If the company plans to increase its market share by 10 per cent over three years but at the cost of stretching debtors to attract customers and increasing stock levels to service customers, accounting profits would remain the same. An over-simplistic cash flow would not reveal the problem either. The increased working capital requirements would put pressure on available cash flow. It could be that the goal might only be achievable in a way which reduces the overall value of the company.
- Discounted cash flow analysis forces the valuer to consider the time span over which returns greater than the cost of capital can be maintained. This thought process requires the valuer to answer such issues as:
  * How large is the market in which sales growth is forecast?
  * Will the market grow or will it decline as substitute products enter?
  * What are competitors doing or likely to do?
- Discounted cash flow analysis can accommodate a real cost approach or a monetarist (or nominal) approach. Either approach can be accommodated by either using a real cost of capital or a nominal cost of capital as the discount rate.[22]
- Since market value is a function of what an asset is expected to earn in the future and not what it has earned in the past, the future aspect of discounted cash flow analysis is preferable in determining the value of assets in markets with limited sales and purchases.
- Discounted cash flow reflects the economic reality of investors looking at returns and company values in terms of cash flow, not accounting measures.[23] Hancy and Jackson[24] illustrate the importance of cash to investors rather than accounting profit by noting that companies which can pay fully-franked dividends have premiums placed on their share value. The premium arises because fully-franked dividends provide a greater return. Earnings per share is not affected. Risk is not affected. The share price increases because the capacity to pay fully-franked dividends highlights the company's capacity to produce cash flows in excess of its needs.
- Discounted cash flow analysis makes specific allowance for market factors assumed to be implied in capitalising profits or dividends such as: gearing; management costs; acquisition costs; risk of shortfall in service charges; dilapidations of plant, equipment and buildings; lack of liquidity; prestige of brand names, trade marks, buildings (occupation rights in the case of buildings); capital gains; tax effects such as negative gearing; income growth; amortisation of loans; and the incidence of taxation.

The most obvious and often quoted criticism of discounted cash flow analysis as a method of valuation is that the process is open to abuse from valuers overstating cash inflows and the

21. T.Y. Hancy and D. Jackson, "Cash Flow Valuations — A Step Ahead" (1988) 65 (September) *Companies and Securities Bulletin* 5. See also J. Robinson, *Property Valuation and Investment Analysis: A Cash Flow Approach*, 1989, The Law Book Co. Ltd, Sydney, in particular ch. 1.

22. See Robinson; Brealey and Myers op. cit., n. 14.

23. Brealey and Myers; Weston and Copeland, op. cit., n. 14; Hancy and Jackson, supra.

24. Ibid.

rate of growth and understating the opportunity cost of capital to provide optimistic results. However, as Robinson points out "it is obvious that [such] abuses apply to any form of valuation".[25]

Discounted cash flow analysis is not a substitute for accepting market prices as the true determinants of fair value. As can be seen by looking at Tables 1, 2 and 3 (pp. 19-27) not only do the courts accept comparable sales value as an accepted method by which to value assets, finance theory also accepts that market values must be accepted as determining fair value. But since the value of an asset is the discounted sum of its net cash flows, proponents of the discounted cash flow approach argue that it is the only method of determining a theoretically sustainable method of valuation.

Comparable sales or market methods of determining value rely on valuing assets on readily available sales data which require few, if any, adjustments. For example, the value of a BHP share is the last sale price made on the stock exchange. The theoretical basis of comparable sales method is the notion that an informed buyer will pay no more for an asset than he would be required to pay to obtain the same or a comparable asset. This is an application of the efficient market hypothesis. Again we see how the concept of value in law and finance coincide. Unfortunately, not all assets are in markets where market value is readily determined. Consequently, methods other than comparable sales must be considered. We now look at the alternative methods of valuing assets and compare them with the discounted cash flow technique.

Tangible Asset-based Methods of Valuation

Tangible asset-based methods of valuation in the main relate to book valuations and liquidation or orderly sale values of assets.

The methodology employed is to value an asset after deducting any debt and then reduce the net asset value by the cost of liquidation or sale of the asset. The net result is then the value of the tangible asset.

Australian courts have held that asset-based methods of value should be used when the return on investment of the asset is not a true reflection of the earning capacity of the asset.[26] However, when the asset is a going concern, asset-based valuation methods are not as appropriate as discounted cash flow analysis. This is for the following reasons:

- The fundamental principle of business or corporate activity is that an asset must be worth more than the sum of its constituent tangible assets. If this was not the case, then value would not be created. Without organisation value there is no purpose in investing in assets as they would not yield a return in excess of the "risk free" rate of return. No rational investor would take the risk of investing in a riskier asset if the expected return was the same as he could receive from investing in risk free government bonds. Conservative accounting principles either do not reflect the organisation value of an asset or understate its value. Either way, the organisation value of, say, a company is not reflected in its accounts. The reason for this is that tangible asset-based valuation methods focus upon historic values and fail to address the future income potential of the asset as a going concern.
- Book values are heavily influenced by tax considerations whereas cash flow is not.
- Accounts receivable as recorded in the books of account may never be collected and this misrepresents the fair value of the asset.

Proponents of tangible asset-based valuation methods correctly point out that the above problems can be resolved by carefully examining the books of account and by revaluation of the constituent assets to current levels. However, such attempts in fact employ an imprecise discounted cash flow analysis. If going to the trouble to revalue the constituent assets and to dissect the accounts into their cash flow constituents, one may as well employ the full discounted cash flow analysis and be done with it.

25. Robinson, op. cit., n. 21, p. 146.

26. *Commissioner of Stamp Duties v. Pearse* (1951) 84 C.L.R. 490, aff. [1954] A.C. 91.

Earnings-based Valuation Methods

There are three forms of capitalised earnings-based valuations. One of the three we have already discussed. Discounted cash flow analysis is a refinement of the more conventional techniques of capitalising earnings in the form of maintainable profits, dividends or net rentals (in the case of land). Conventional capitalised earnings-based techniques involve the following considerations:

- Identifying the assets that are necessary to provide the normal business income.
- The assumption that assets surplus to requirements are sold.
- The earnings capacity of the necessary assets are determined and referred to as "maintainable" earnings, accounting profit, dividends or rentals (as is appropriate). The maintainable earnings figure provides a benchmark income stream that is capitalised in perpetuity to determine value.
- The time value of money is implicitly taken account of by capitalising the benchmark income stream.
- The method takes account of the future income potential of the going concern by capitalising the benchmark.
- A perpetuity formula is used because:
  * in the case of shares it is assumed that the company will continue in perpetuity; and
  * for land, as it cannot be destroyed, it will continue to produce income in perpetuity;

  accordingly, there is no reason to look at earning capacity of the asset over any shorter period.[27]
- In employing capitalised earning methods, it is necessary for the valuer to exercise his judgment in selecting the appropriate capitalisation rate in the light of the asset's history, the degree of risk of the income flow of the asset, general trends in the industry, the general structure of rates applying to various classes of listed companies and other relevant factors.
- The capitalisation rate, as for discounted cash flow analysis, is a rate derived from the analysis of sales evidenced in the market.

A review of the leading valuation texts and cases reveals (see Table 1, pp. 19-20) that the capitalisation of future maintainable earnings is the most common methodology used in practice to determine the value of assets with a potential to create value where there is little or no readily available sales data to use a comparable sales method.

The main criticism concerning other earnings-based valuation methods is that they do not take account of economic reality as well as discounted cash flow analysis does. The proponents of discounted cash flow analysis argue that, just as the valuer must exercise his judgment in selecting the appropriate capitalisation rate in the light of such factors as a company's history, the degree of risk of the business, general trends in the industry and the general structure of interest rates applying to various classes of listed companies, the valuer if allowed the freedom to exercise his judgment on these issues should also exercise his judgment to answer such questions as:

- How large is the market in which sales growth is forecast?
- Will the market grow or will it decline as substitute products enter?
- What are competitors doing, or likely to do?

By answering such questions the valuer should, in light of the probability of the likely outcomes, forecast the expected future cash flows of the asset being evaluated. As Hancy and Jackson state:

> "Too many earnings based valuations employ historic earnings as a proxy for future earnings with insufficient critical examination."[28]

In supporting the view that conventional earnings-based methods do not take account of economic reality as well as discounted cash flow analysis, Robinson says that:

27. See Adamson, op. cit., n. 13, p. 52 and W.A. Leach, "Conveyancing and Valuation" (1959) 23 *The Conveyancer* 204-219.

28. Hancy and Jackson, supra, n. 21 at 3.

"In fact, in recent years, the assumption of buildings lasting forever is wrong. Buildings less than 15 or 20 years old are being replaced or radically refurbished, and these short periods and high future costs are being ignored by the calculus of the conventional wisdom."[29]

Overseas Courts' Views on Discounted Cash Flow Analysis

In looking at overseas decisions on valuation we are able to make accurate comparisons between differences and similarities of approach taken by the courts in common law countries. This is because the concept of value in Australian, British, American and Canadian courts is the same.

As can be seen from Table 2 (pp. 21-25) discounted cash flow analysis was discussed in American judgments in the late 1950s. This is not surprising owing to the growth of finance research and theory developed predominantly in the United States at that time. Initially, while recognising the concepts that the commercial value of an asset consists of the expectation of income from the asset and earning potential is far more important in valuing income producing assets than the book value of the assets,[30] American courts took the view that, as between valuations based on a forecast of the future and valuations based on actual figures, the actual figures methods were preferable.

With the greater acceptance of discounted cash flow analysis by the accounting profession the case law in the United States on value and valuation has followed in the wake of this acceptance. In 1983 the Supreme Court of Delaware approved the use of forecasts to arrive at value. The only proviso stipulated by the Supreme Court was that the assumptions upon which the forecasts are based must be founded upon facts and evidence available at the date of valuation and not the product of mere speculation.[31]

As seen in Table 2 (pp. 21-25) no evidence was found to indicate whether or not discounted cash flow analysis has been considered by British or New Zealand courts. Canadian courts as late as 1978 appeared not to recognise discounted cash flow analysis as a method of valuation. In *Neonex International Ltd v. Kolasa* Bouck J. stated:[32]

"2. There are at least four ways of valuing shares in a company:

(a) Market value: This method uses quotes from the Stock Exchange.

(b) Net asset value: This takes into account the current value of the company's assets and not just the book value.

(c) Investment value: This method relates to the earning capacity of the company.

(d) A combination of the preceding three."[33]

In 1987 Canadian courts expressly approved of discounted cash flow analysis as a method of valuation.[34] The case involved dissenting offerees in a takeover bid. Under Canadian law[35] shareholders that do not accept a takeover bid because the offer is in their opinion too low are entitled to approach the court to determine the "fair value" of their shares and have the offeror purchase their shares at the determined "fair value".

The dissenting offerees' shares were in a mining company which had a mining lease. The company had decided not to mine its lease. The board negotiated with Cyprus Anvil Corp. for it to make a takeover offer for all of the shares in the company. The company was not a going concern and had no net cash flow record.

At first instance, McEachern C.J.S.C.[36] discussed three valuation methods:

(1) Market value for shares listed on a stock exchange;

29. Robinson, op. cit., n. 21, p. 16.
30. *Cottrell v. Pawcatuck Co.*, 128 A.2d 225, 229 and 232 (1956).
31. *Weinberger v. UOP Inc.* 457 A.2d 701 (Del. Sup. Ct (1983)).
32. (1978) 84 D.L.R. (3d) 446.
33. Ibid., at 453 per Bouck J.
34. *Re Cyprus Anvil Corp. v. Dickson* (1987) 33 D.L.R. (4th) 641.
35. Section 199 of the Canadian *Corporations Act*.
36. *Re Cyprus Anvil Corp. v. Dickson* (1983) 40 B.C.L.R. 180 at 190.

(2) Net asset value by appraisal and negotiation;

(3) Discounted cash flow.

On the facts McEachern C.J.S.C. held that discounted cash flow analysis was the only available method because the shares of the company were not on a stock exchange. Net asset backing was not appropriate, as — although it was put to McEachern C.J.S.C. by the offeror that the offer price was negotiated on an arm's length basis (between the Board of the company and Cyprus) — his Honour held that the Board:

> "Having decided not to develop the properties, were anxious to sell to the only buyer for whatever they could get. That is not how fair value should be determined."[37]

Having determined that discounted cash flow analysis was an appropriate method of valuation, McEachern C.J.S.C. methodically discussed the factors which the parties had to consider to arrive at a discounted cash flow valuation. McEachern C.J.S.C. closely looked at all of the relevant factors (19 in all). He then made findings of fact on each point: ore reserves; metallurgy — recovery of metal in the appropriate milling process; debt or equity financing; capital costs; mining and mechanical divisions costs; mill department costs; electrical costs; coal costs; environmental control costs; general overhead administrative costs; transportation to tidewater costs; terminal costs at Scagway; overseas freight and smelter charges; trucking costs; mining plan costs; metal prices; exchange rate; tax considerations and the appropriate discount rate to be applied.

McEachern C.J.S.C. did not calculate the value but allowed the parties to do so using the facts which he had determined. His Honour's judgment is a good example of the thoughtful process involved in making a valuation by using discounted cash flow analysis.

In a supplemental judgment McEachern C.J.S.C.[38] noted that the value calculated by discounted cash flow analysis on the basis of his findings was in the range of $18.00 to $22.00 per share. Whilst this was a high value, McEachern C.J.S.C. stated:

> "Having made these difficult choices, I feel constrained, as was said by General Grant, to let the chips fall where they may, even though the results seem very generous to the respondent. I say this because I do not think this is the kind of case where a judge can employ a discounted cash flow method and then adjust the result if it seems too high or too low as is permissible in personal injury or fatal accident cases . . . Further, I see no reason to change any of the factors in the equation (except the question of the mill) which were all so fully ventilated in a long trial. Cyprus Anvil says my postulated ore reserves are too high, but I think the figures suggested by Cyprus Anvil were too low, and in such circumstances one must make choices."[39]

On appeal[40] the majority, Lambert and Hinkson J.A., did not disapprove of discounted cash flow analysis. They criticised McEachern C.J.S.C.'s judgment for blindly following the discounted cash flow method as the only means of valuing the shares. The majority held that McEachern C.J.S.C. did not consider "other" factors in arriving at his judgment. These "other" factors were that Cyprus Anvil Inc. was the only purchaser and, as a *question of fact*, it would not have paid a price anywhere near the total value of that produced by applying the discounted cash flow method. After referring to decided cases the majority emphasised that the problem in finding fair value is a special one to be determined on the facts of each case. They concluded:

> "It defies being reduced to a set of rules for selecting a method of valuation, or to a formula or equation which will produce an answer with the illusion of mathematical certainty. Each case must be examined on its own facts, and each presents its own difficulties."[41]

37. Ibid., at 191.
38. *Re Cyprus Anvil Corp v. Dickson* (1984) 54 B.C.L.R. 225.
39. Ibid., at 228.
40. Supra, n. 34.
41. Ibid., at 652.

Cyprus Anvil Inc. argued on the appeal that, as a matter of law, discounted cash flow analysis should not be accepted as a method of valuation.[42] The argument was rejected by the Court of Appeal.[43]

Esson J.A., in dissent, was of the view that the trial judge found that the price negotiated between the major shareholders and Cyprus Anvil Inc. for the company was not that which a not overly anxious vendor and purchaser would have arrived at. As a consequence, McEachern C.J.S.C. was required by law to determine the value of the shares. The price negotiated by the parties was not to be a relevant consideration, as the majority held. What was required was a price which rational economic parties would have accepted as being fair. As the company was not a going concern the only available method left was that of discounted cash flow analysis. Once that method was chosen, McEachern C.J.S.C. could not change his mind if he were to apply the law.

On appeal, Cyprus Anvil Inc. also attacked McEachern C.J.S.C.'s judgment by arguing that his Honour realised the potential of the property which is inherent in applying discounted cash flow analysis. Esson J.A. also rejected this argument, because the mining lease only had value because of the potential to extract ore. To determine the value it was necessary to make some assumptions as to its future potential.[44] As Esson J.A. said:

> "The entire value of the property resides in its possibilities . . . . Discounted cash flow analysis is a process of assessing the possibilities."[45]

Given the compatibility between the concept of value in finance theory and law, the better view of the decision in *Re Cyprus Anvil Corp. v. Dickson* is, with respect, the minority view of Esson J.A. In order to reach their decision the majority of the Court of Appeal tacitly overruled the trial judge's findings of fact, namely, that the parties were not dealing at arm's length so that it was not appropriate to take account of the "fact" that Cyprus Anvil Inc. was the only purchaser. Although appeal courts regularly hold that they will not overrule a finding of fact of a trial judge lightly, the majority made no express recognition of the fact that they had to overrule McEachern C.J.S.C.'s findings of fact to alter the valuation as they did.

We have seen, by applying the discounted cash flow basis even though the company was not a going concern, the value which resulted was a value which a rational economic investor would have accepted for its shares rather than waiting for the expected returns which the company had the potential to realise in the future. No one gains and no one loses from the transaction. What better definition of fair value can there be?

Both parties at the hearing relied on discounted cash flow analysis to argue their case. All McEachern C.J.S.C. did was to rely on the evidence and make findings of fact consistent with the evidence. With respect, his Honour did not abrogate his responsibility for determining the fair value of the shares on the facts of the particular case before him by using only one method to determine the shares' value. Rather, he closely analysed the relevant facts and applied the only valuation method available to him. Having done so he had to let the chips fall where they might.

Australian Court Decisions on Discounted Cash Flow Analysis

The use of discounted cash flow analysis is known to Australian courts. See Table 3 (pp. 25-27). Unlike the Canadian decision in *Re Cyprus Anvil*, no Australian court has closely analysed the use of discounted cash flow analysis. In the cases in which discounted cash flow analysis has appeared, Australian courts have either accepted it or rejected it on the expert evidence placed before them.[46]

42. Ibid., at 644.
43. See, in particular, per Esson J.A. at 667.
44. Ibid., at 668.
45. Ibid., at 669.

46. The cases which have looked at discounted cash flow analysis in Australia in any detail are: *Albany and Ors v. Commonwealth of Australia* (1976) 12 A.L.R. 201; *Reynolds v. Commissioner of State Taxation (W.A.)* (1986) 17 A.T.R. 987; and *Sanford v. Sanford Courier Services Pty Ltd* (1986) 10 A.C.L.R. 549; 11 A.C.L.R. 373. Each decision was decided by a single judge. Each decision illustrates the need for lawyers better to understand the concept of value in order better to assist expert witnesses in presenting evidence about value and valuation methods in a logical and acceptable form.

The only High Court decision on discounted cash flow analysis is *Albany and Ors v. Commonwealth of Australia*,[47] a decision of Jacobs J. The case involved the High Court determining the appropriate compensation for land compulsorily acquired from Mr Albany (and others). The expert witnesses for Mr Albany (the plaintiff) valued his land at $8,500,000 on the basis that the best use of the land at the date of acquisition was for residential development. The method used was discounted cash flow analysis.

Mr Albany's land was in three categories: the land which was not licenced (the unoccupied land); the land which he licensed for quarrying operations (the quarry land), and the land his house was on (the Albany house land).

The defendant's valuers considered three alternative methods of valuation of the unoccupied land. Each method was based upon evidence of comparable sales. Jacobs J. found the most useful analysis was from the defendant's valuer. The method was the value upon the land as sold at the date of acquisition in 31 separate lots. It was the most useful because it utilised the evidence of the only truly comparable sales.

In his judgment, Jacobs J. looked at the discounted cash flow valuations of the plaintiff's experts. In doing this, his Honour said:

> "I have carried out this exercise in order to show how far wide of the mark was the initial valuation of the plaintiff's valuers because of incorrect assumptions made as the basis therefor."[48]

The nature of the assumptions used by the plaintiff's valuers were:

- the probable time within which development would commence and continue to completion;
- the number of lots likely to be obtained from the subdivision of the lands;
- the cost of development per lot;
- the prices likely to be obtained for the various lots;
- the period of time over which the cash would flow in from sales; and
- the appropriate discount rate.

Not only did Jacobs J. reject the discounted cash flow valuation for the unoccupied land because of the over-optimistic assumptions made by the plaintiff's expert witnesses, he rejected its use because he was not satisfied that discounted cash flow analysis was a suitable method to value the unoccupied land. His reasons were:

> ". . . I am not satisfied that this could be an acceptable method of valuation in the present case. I express no opinion upon the question whether or not, in other circumstances and in other cases, a method of valuation by way of discounting the anticipated cash flow is a proper method of valuation of land. There is not sufficient material before me upon which I could express a concluded opinion upon this matter. As I have earlier stated, none of the valuers who gave evidence (except Mr Fenwick) has previously applied this method of valuation of land. There is no evidence that the application of this method has either in theory or in experience produced results consistent with methods of valuation based on comparable sales or on that method of valuation upon the basis of hypothetical subdivision which has, where necessary, been applied in the past."[49]

The quarry land was also valued using discounted cash flow analysis by the plaintiff's expert witnesses. In applying the methodology the valuers relied upon ascertainable evidence in arriving at their assumptions that:

- the licence would last 12½ years; and
- the minimum return under the licence was $30,000 per annum.

Jacobs J. concluded:

> "In my opinion the approach of the plaintiff's valuers was the correct approach. The acquisition from an owner of land of an assured right of that owner to receive

47. Ibid.
48. Ibid., at 218.
49. Ibid., at 210. Mr Fenwick was one of the defendant's valuers. He gave evidence that discounted cash flow analysis was not appropriate in this case.

every year for 12½ years a sum of $30,000, results in the loss to that owner of that income over that period and he is entitled to be compensated accordingly."[50]

The difference between the rejection of discounted cash flow analysis for the unoccupied land and its acceptance for the quarry land demonstrates the following matters:

- It is important for expert witnesses to rely on verifiable evidence in projecting future cash flows. Discounted cash flow analysis makes explicit items which conventional capitalisation methods subsume as being taken account of in the discount rate. While having the advantage of ensuring that all relevant considerations are analysed, discounted cash flow analysis requires that such considerations which are extrapolated and projected are based upon evidence available to the expert witness as at the date the valuation is to be made.
- It is important for expert witnesses to be educated so as to be able logically to put their cases before the courts.
- It is important for lawyers to understand the foundations of discounted cash flow analysis to provide courts with sufficient material upon which courts can express a concluded opinion, bearing in mind that judicial decisions on issues of fact, such as methods of valuation, are in the main reflections and sanctioning by courts of established methods of valuation used in practice by accountants, bankers and valuers.

In *Sanford v. Sanford Courier Services Pty Ltd*,[51] an oppression of the minority action under s. 320 of the *Companies (N.S.W.) Code*, Waddell C.J. in Eq. was called upon to value shares in a private company. In the first hearing his Honour had two methods of valuation put to him:

(1) an asset-based valuation, founded upon realisable values of the company's assets, by the plaintiff; and

(2) a capitalisation of expected future dividend stream by the second defendants.

His Honour made no decision but called for further evidence from the parties.

In his judgment Waddell J., with respect, reflected a misunderstanding of the use of a valuation method based on capitalisation of earnings. His Honour held:

> "Having regard to all these circumstances it seems to me that basically the plaintiff's shares should be valued by capitalising the expected dividend stream . . . on the assumption that the emoluments provided for the second defendants as directors had been and would be on a commercial basis. The shares at that time would have had some additional value because of the possibility that the business might be sold in a way which would enable the plaintiff to get the value of his shares on an asset-backing basis."[52]

As seen in the discussion on capitalisation of earnings methods, the use of such methods is to value a company on a going-concern basis. A company has an organisation value in excess of its net asset backing. To therefore consider the "possibility that the business might be sold in a way which enables the plaintiff to get the value of the shares on an asset backing basis" as well as taking account of the earning potential is double-dipping. Such an error would be overcome by a discounted cash flow valuation, which would require the valuer to analyse each step, including the realisable value of the assets at the end of the valuation period, whilst taking into consideration the net cash flow of the asset. By breaking up the constituent parts of the valuation process, nothing is missed or added twice, whereas the subsuming of these concepts in the conventional capitalisation of earnings methods can lead to fundamental errors.

In *Sanford*[53] the plaintiff's expert looked at what should be the notional distributable income from 30 June 1984 to 30 June 1986 and capitalised the average using a market-determined discount rate.

50. Ibid., at 231.
51. (1986) 10 A.C.L.R. 549.
52. Ibid., at 563.
53. *Sanford v. Sanford Courier Services Pty Ltd (No. 2)* (1986) 11 A.C.L.R. 373.

The defendant's expert took notional income from 30 June 1980 to 30 June 1984 and capitalised the average, providing for the likelihood of increased profit by adjusting the capitalisation rate.

The plaintiff's expert relied on the conventional wisdom that the risk of the business downturn, if it exists, is one which should be taken account of by the capitalisation rate.

The defendant's expert (presumably relying on empirical evidence derived from finance theory) stated that, as there was no guarantee that the company would continue to be profitable after a period of five years, then an annuity would be preferable. Waddell J. found in favour of the plaintiff, relying on the plaintiff's expert evidence. As determined by the plaintiff's expert, the company's worth on a perpetuity basis was $89,075. Relying on the annuity formula and taking the discount rate of 20 per cent (being the one used by the plaintiff's expert) the valuation on the defendant's basis (although not stated in the report itself) would have been $53,277.73. There is a substantial difference between the two results. The reason for this is that over a short time period the discounted cash flow approach is a more precise method.

Waddell J.'s reasons for accepting the plaintiff's expert were as follows:

> "Clearly enough Mr Pinn's approach would be appropriate if there was some substantial measure of certainty about the size and duration of future profits . . . . However, it is not, in my view, appropriate to the present circumstances."[54]

Unfortunately, his Honour's use of the conventional wisdom does not take account of the realities of economic life that growth does not continue for ever. At best five to seven years is a realistic period.[55]

In *Reynolds v. Commissioner of State Taxation (W.A.)*,[56] the Court was called upon to determine the value of an assigned interest in a legal partnership. The Commissioner sought to value the assigned interest on a discounted cash flow basis over a period of seven years.[57] It is apparent from Burt C.J.'s judgment that the Commissioner's valuation was rejected because the expert called on behalf of the Commissioner was "not an expert valuer",[58] whereas the expert called for the appellant had been valuing businesses for about eight years, although not on a full-time basis.

Again, we see by this decision the importance which courts place upon the evidence of expert witnesses. Since courts place such reliance on expert witnesses, then discounted cash flow analysis is preferable to the more conventional earnings-based methods, even if only for the reason that it makes explicit those factors which are often subsumed by the conventional wisdom. By making explicit what the conventional wisdom takes as implicit, the court is given a clearer and more complete picture and the means more easily of identifying errors of judgment in the evidence of competing experts. Such is not the case using a conventional approach.

Conclusions

The empirical evidence and cases reveal the following matters:

- Courts, when called upon to determine the value of an asset, do so on the special facts and circumstances pertaining to the asset being valued.
- Substantial reliance is placed by courts upon expert evidence.
- Courts have accepted discounted cash flow analysis as a method of valuation: *Albany and Ors v. The Commonwealth of Australia*;[59] *Re Cyprus Anvil Corp. v. Dickson*.[60]
- Discounted cash flow analysis is not a suitable method of valuation for every valuation question. Like conventional capitalisation methods, it is a secondary or alternative method of valuation.[61] It

54. Ibid., at 379.
55. See generally, Officer, supra, n. 15; Hancy and Jackson, supra, n. 21; Brealey and Myers; Weston and Copeland, op. cit., n. 14.
56. Supra, n. 46.
57. Seven years was chosen because this was the minimum time under which the tax law would permit the assignment to last if any taxation advantage was to accrue to the assignor.
58. Ibid., at 991.
59. Supra, n. 46 at 231.
60. Supra, n. 34.
61. *Bennett v. The Valuer General* (1973) 23 *The Valuer* 75.

has a comparative advantage however when looking at businesses which are a going concern whose tangible asset backing is not worth as much as the organisation value of the asset. In particular, discounted cash flow analysis is the only available method where the asset is not a going concern, there is no history of earnings to derive a figure for maintainable earnings and there is no evidence available to use a comparable sales method.

- The proponents of discounted cash flow analysis argue that investors look at cash returns rather than earnings on an accounting basis. Empirical evidence supports such arguments.
- Discount cash flow analysis is of more use when the time frame is less than 80 years. Given that no business continually grows at the same rate for 80 years, or that the income producing life of buildings today is between 10 years and 20 years and not forever, then for a more realistic appraisal of value discount cash flow analysis is preferable to the other methods.
- The seemingly greater objectivity of conventional capitalisation of earnings methods is more apparent than real. As seen, the conventional capitalisation of earnings methods subsume such issues as gearing, management costs, acquisition costs, capital gains, tax effects and income growth; whereas this is not true in the case of discounted cash flow analysis whose methodology requires each to be specifically considered and a determination made by the valuer using his experience and value judgment. Moreover, by making the otherwise implicit explicit, errors in judgment are more easily noticed and corrected.
- Courts prefer to rely on methods of valuation which take account of actual figures rather than forecasted figures. This preference however does not render discounted cash flow analysis useless. Discounted cash flow analysis relies upon the past to project the future. Projected figures must be based upon actual figures where possible rather than mere speculation.

Although discounted cash flow analysis has been accepted in Australia by a single judge decision of the High Court[62], it is not generally accepted by Australian courts (see the other Australian cases in Table 3, pp. 25-27). The reasons for this appear twofold:

(1) Lawyers are not sufficiently familiar with the different basis and techniques of discounted cash flow analysis as a method of valuation and the underlying concepts and problems of this method; consequently, they:
   - fail to adduce to court's evidence of the method's acceptance in finance theory and in practice; and
   - fail to show that the method produces results of a level of accuracy consistent with comparable sales where market evidence is non-existent, insufficient or irrelevant for the asset in question.

(2) Expert witnesses have not sufficiently presented the method in a logical and acceptable form.

Consequently, Australian courts have not been given sufficient material on which to express a considered opinion upon the use of discounted cash flow analysis. What is required therefore is for lawyers and expert witnesses in the finance field (valuers, accountants and actuaries) to educate one another. The legal profession requires educating to become familiar with the underlying concepts and problems of discounted cash flow analysis. Expert witnesses require education on how to present evidence in court in a logical and convincing manner. By educating one another, both will be able to establish to the satisfaction of courts the acceptance of discounted cash flow analysis as a reliable and commercially accepted method of valuation in theory and practice, thereby better serving their clients.

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62. *Albany and Ors v. Commonwealth of Australia*, supra, n. 46, at 231 per Jacobs J.

TABLE 1

METHODS

AUTHOR	AREA IN QUESTION	COMPARISON OF "LIKE SALES"	ASSET: BOOK VALUE	ASSET: LIQUIDATION VALUE	CAPITALISATION OF EARNINGS: FUTURE ACCOUNTING PROFIT	CAPITALISATION OF EARNINGS: EXPECTED DIVIDENDS	CAPITALISATION OF EARNINGS: CASH FLOW ANALYSIS	OTHER
Kime	Private Co. Shares	Y	Y	Y	Y	Y (Growth not considered)		
Atva	Companies' Businesses				Y	Y		
Ferrett	Shares						Y	
Hancy & Jackson	Shares	Y			Y	Y	Y	
Guben et al	Large income producing properties	Y			Capitalisation of net income			Replacement cost = value
NCSC Rel. 102	Valuation reports in takeovers			Y	Y Is this strictly correct		?	What an alternative acquirer might pay
Harv. Law Rev.	Appraisal cases	Y (e.g. stock exchange)	Y	Y	Y	Y		What an alternative acquirer might pay
Hyam	Land	Y			Capitalisation of Net Rent			
Adamson	Companies businesses and shares				Y	Y	Y Mentioned p. 52. Dismissal due to the differences between perpetual and present value being insignificant	
Robinson	Land Valuation						Y	

* Y = Yes : N = No

TABLE 1 *(Continued)*

AUTHOR	AREA IN QUESTION	METHODS: COMPARISON OF "LIKE SALES"	ASSET: BOOK VALUE	ASSET: LIQUIDATION VALUE	CAPITALISATION OF EARNINGS: FUTURE ACCOUNTING PROFIT	CAPITALISATION OF EARNINGS: EXPECTED DIVIDENDS	CAPITALISATION OF EARNINGS: CASH FLOW ANALYSIS	OTHER
Tolhurst	Shares in unlisted Companies	Y	Y	Y	Y	Y		
Gole	Shares Land Public shares	 Y Y (stock, exchange)	Y		Y Y Y	N (p. 79)		Replacement cost
Lonergan	Shares				Y			
Staines	Businesses	Y	Y	Y	Y			Asset Insurance Replacement Standard Formula
Baum (Whipple Com. Rent Rev.)	Lease rent reviews						Y	
Feros & Pengilley	Business Appraisals	Y	Y		Y		Y (p. 187)	
D'Ambrosio & Hodges	Expert Reports						Y	
Brealey & Myers	Finance Theory	Y					Y	
Steele			Y	Y	Y		Y	Replacement value Fair market value
Weston & Copeland	Finance Theory	Y	Y	Y			Y	

TABLE 2

OVERSEAS CASES

METHODS

BRITISH/U.S./ CANADIAN CASES	AREA IN QUESTION	COMPARISON OF "LIKE SALES"	ASSET: BOOK VALUE	ASSET: LIQUIDATION VALUE	CAPITALISATION OF EARNINGS: FUTURE ACCOUNTING PROFIT	CAPITALISATION OF EARNINGS: EXPECTED DIVIDENDS	CAPITALISATION OF EARNINGS: CASH FLOW ANALYSIS	OTHER
Gold Coast Selection Trust v. Humphrey [1948] A.C. 459	Oppression of minority							Dictum: "Valuation is an art not an exact science. Mathematical certainty is not demanded, nor indeed is it possible: " Viscount Simon at 473.
In re Bird Precision Bellows Ltd [1984] 1 Ch. 419	Oppression of minority		Y			Discussed Inappropriate on facts		Concluded that "since it was agreed between the two valuers that a dividend basis of valuation which was usually relevant where a company had a record of paying significant dividends was inappropriate then in the present case, the appropriate basis was one which involved looking at the earnings and the net tangible asset value": Nourse J. at 436.
Buckingham v. Francis [1986] 2 All E.R. 738 Staughton J.	Oppression case		Mentioned	Mentioned	Y Applied on facts of case. Assignment of future profit can be made on a "best guess" basis.			None: Per Staughton J. at 743: "Frankly I doubt whether businessmen are ruled by accountants when deciding how much to pay for a private company. They no doubt seek the advice of accountants before-

TABLE 2 *(Continued)*

OVERSEAS CASES

METHODS

BRITISH/U.S./ CANADIAN CASES	AREA IN QUESTION	COMPARISON OF "LIKE SALES"	ASSET		CAPITALISATION OF EARNINGS			OTHER
			BOOK VALUE	LIQUIDATION VALUE	FUTURE ACCOUNTING PROFIT	EXPECTED DIVIDENDS	CASH FLOW ANALYSIS	
								hand, and are told what likely price/earnings ratio would emerge from various different figures as the purchase price. And afterwards they are told, no doubt, what is the likely price/earnings ratio on the purchase price, which they have decided to pay. But I wonder whether, in a crucial stage between, when they are deciding on a price, business acumen or hunch does not play a far larger part than the calculations of accountants."
Cottrell v. Pawcatuck Co. 128 A. 2d 225 (1956)	Appraisal case		". . . repeatedly held . . . that upon a sale of . . . assets . . . the book value is of far less importance than earning power. . . ." At 229.		Def.: expect used actual earnings. Court favoured valuation based on actual figures: "estimates of future income must necessarily depend to a great extent on past performance." At 232.		Pl.: expect used "estimated future average" of cash flow of co before tax.	Court recognised that "commercial value of property consists in the expectation of income from it." At 232. No substantial error by Defs. Sale confirmed at their valuation.

TABLE 2 *(Continued)*

BRITISH/U.S./ CANADIAN CASES	AREA IN QUESTION	COMPARISON OF "LIKE SALES"	ASSET	CAPITALISATION OF EARNINGS				OTHER
			BOOK VALUE	LIQUIDATION VALUE	FUTURE ACCOUNTING PROFIT	EXPECTED DIVIDENDS	CASH FLOW ANALYSIS	
Marks v. Wolfson 188 A.2d 680 (1963) Marvel V.C.	Appraisal case							Appraisal decision in *Cottrell v. Pawcatuck Co.* 128 A.2d 225 affirmed: "As between the valuation based on a forecast of the future & one based on actual figures, the latter method seems preferable".
Levin v. Midland Ross Corp. 194 A.2d 50 (Delaware Ch.) (1963)	Appraisal case						Dictum rejected	Marvel V.C.: ". . . his estimate was based principally on long-range projections, a technique which has not met approval in Delaware in proceedings having to do with the determination of the present value of assets". At 57.
Weinberger v. UOP Inc. 426 A.2d 1360 (First Instance)	Appraisal case on a merger						DCF disapproved of "as not corresponding with either logic or the existing law".	
Weinberger v. UOP Inc. 457A.2d 701 (Del. Sup. Ct (1983))							Approved of provided the assumptions are based upon facts & evidence available at date of the valuation & not the product of mere speculation.	

TABLE 2 *(Continued)*

Southern Pacific Transportation Co. v. Interstate Commerce Commission 736 F.2d 708 (1984) U.S. Ct of Appeals	Did the Commission properly evaluate the fairness of the price per share offered to minority shareholders?			"Because WP is a going concern, the Commission determined that the value of its stock can best be measured by WP's earning power as reflected by performance in the stock market rather than the book value of the co." Applies corp. fin. theory to value merger. At 726.			
Neonex International Ltd v. Kolasa (1978) 84 D.L.R. (3d) 446	Appraisal case	Y		Y	Y		Net Asset Value takes account of current value not just book value.
Re Cyprus Anvil Mining Corp. v. Dickson (1987) 33 D.L.R. (4th) 641 Brit. Columbia Ct of App.	Appraisal case	Y				Trial Judge applied DCF method to value shares. Court of Appeal by 2-1 majority while not criticising the DCF methodology held solely to look at one method to the exclusion of others fettered the Court's discretion and was not acceptable. Dissenting judge: If both parties *(contd)*	Net Asset Value by appraisal or negotiation.

TABLE 2 *(Continued)*

								accepted the method (as they did) then one or the other cannot complain if the method produces a value they aren't happy about.

TABLE 3

METHODS

AUSTRALIAN CASES	AREA IN QUESTION	COMPARISON OF "LIKE SALES"	ASSET		CAPITALISATION OF EARNINGS			OTHER
			BOOK VALUE	LIQUIDATION VALUE	FUTURE ACCOUNTING PROFIT	EXPECTED DIVIDENDS	CASH FLOW ANALYSIS	
Queensland Co-op Milling Assoc. Ltd v. Hutchinson (1976) 2 A.C.L.R. 188, Qld Sup Ct.	s. 320 (Oppression case)			Appellant argued for liquidation method, since company history of trading losses meant could not use earning basis.				Respondent used rule of thumb value = price/unit to the av. no. of units sold per wk. Ct approved of this method. Took account of potential to the purchaser of the co. as a going concern.
Albany and Ors v. Commonwealth of Australia (1976) 12 A.L.R. 201, Jacobs J.	Valuation of land compulsorily acquired by Common-wealth.	Def.: Valued land using 3 methods each based on comparable sales.					Pl.: Valued land on the basis that the best use of the land was mainly for residential development and did so using a discounted cash flow method of valuation. Jacobs J. declined to *(contd)*	

TABLE 3 *(Continued)*

AUSTRALIAN CASES	AREA IN QUESTION	COMPARISON OF "LIKE SALES"	METHODS: ASSET — BOOK VALUE	METHODS: ASSET — LIQUIDATION VALUE	METHODS: CAPITALISATION OF EARNINGS — FUTURE ACCOUNTING PROFIT	METHODS: CAPITALISATION OF EARNINGS — EXPECTED DIVIDENDS	METHODS: CAPITALISATION OF EARNINGS — CASH FLOW ANALYSIS	OTHER
							accept DCF because of the erroneous assumptions made by the Pls' expert witnesses in arriving at their valuation. Pls also valued the land licensed to a company as a quarry on DCF basis. This the Court approved of.	
Re Dalkeith Pty Ltd (1985) 3 A.C.L.C. 74 McPherson J.	s. 320, s. 364(1), *Companies Code*		Used book value of company at date prior to dispute. Major assets land revalued & taken into account.					
R. Plaisted Investments Pty Ltd & G. Plaisted Investments v. Bonell (1982) 6 A.C.L.R. 452, Qld Sup. Ct, Connolly J.			Net Asset Value of share (method chosen by Articles).					
Reynolds v. Commissioner of State Taxation (W.A.)	Valuation for stamp duty purposes				Taxpayer argued that value should be obtained from capitalising		Cmnr sought valuation on DCF basis. Rejected.	Taxpayer in the alternate argued that "super profits" method be used. Rejected.

TABLE 3 *(Continued)*

(1986) 17 A.T.R. 987.			expected future maintainable profits. Accepted. (N.B. Burt C.J. used incorrect test & referred to value to purchaser. This contrary to authority; decision questionable.)	(Actuary only expert witness for Cmnr.)
Sanford v. Sanford Courier Services Pty Ltd (1986) 10 A.C.L.R. 549, Waddell C.J. in Eq.	s. 320, *Companies Code*	Pl.: Valued shares upon orderly realisation of assets following a winding up.	Def.: Valued shares by capitalising the expected dividend stream, assuming that the emoluments paid to certain employees had been on a commercial basis.	
(1986) 11 A.C.L.R. 373			Pl.: Used perpetuity to obtain value.	Def.: Present value of expected dividend stream over next 4-5 yrs not accepted as no certainty about the size or duration of future profits.
Hills Minerals N.L. v. Spargos Exploration N.L. (unreported, Sup. Ct, W.A., Wallace J., 15 April 1987).	Whether valuation in Pt A statement breached s.44 of *Companies (Acquisition of Shares) Code.*			Valuation in Pt A statement was arrived at using DCF Analysis. Method accepted without question by Court. Issue not specifically raised.

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