Valuation Principles

By

Sam Maizel and Jeremy Richards[1]

For purposes of valuing a debtor, the Supreme Court has suggested that courts use the inherent reorganization value as opposed to any depressed, liquidation value of a debtor.[2] The Supreme Court has defined reorganization value to mean "the expectation of income" from the reorganized debtor[3] and has described it as the "present worth of future anticipated earnings."[4] Given that the Supreme Court has not mandated any precise methodology, bankruptcy courts have discretion to determine the "extent and method of inquiry necessary for a valuation . . . dependent on the facts of each case."[5]

Experts have developed and generally utilize discounted cash flow analysis, together with other approaches such as comparable company analysis and comparable transaction analysis (often to bolster or test reliability), in determining the enterprise value of a corporate debtor; subsequent to *Consolidated Rock*, courts have looked to and accepted one or more of these valuation approaches.[6]

In the *Consolidated Rock* case, the Supreme Court directed courts away from what third parties would actually pay for a business because the Court assumed that markets generally

---

1 This material is excerpted from a paper entitled "BANKRUPTCY: Key Aspects in the Application of Business Valuation" prepared for the 1999 AICPA National Business Valuation Conference held in December 6, 1999 in Las Vegas, Nevada by Jeremy V. Richards, Esq., Pachulski Stang Ziehl Young Jones & Weintraub, LLP.

2 *Consolidated Rock Products Co. v. DuBois*, 312 U.S. 510, 526, 61 S.Ct. 675, 684-85, 84 L.Ed. 982, 991 (1941) (generally directed courts away from valuations premised on what third parties would actually pay, based upon the notion that markets tend to undervalue entities in bankruptcy); *See also In re Penn Central Transportation Co.*, 596 F.2d 1002, 1115-16 (3rd Cir. 1979); *In re New York, New Haven and Hartford R.R.*, 4 B.R. 758, 792 (D. Conn. 1980) ("The stigma of bankruptcy alone is a factor that will seriously depress the market value of a company's securities"; finding market value of debtor's assets to be temporarily depressed, the court took note of the pending bankruptcy and the fact "that the market in general is somewhat unsettled because of the social, political, and economic stresses current on the domestic and international scenes").

3 *Consolidated Rock*, 390 U.S. at 525.

4 *Protective Comm. v. Anderson*, 390 U.S. 414, 442 n.20, 88 S. Ct. 1157, 20 L. Ed. 2d 1 (1968).

5 *Id.* at 527

6 *See, e.g., In re PWS Holding Corp.*, 228 F.3d 224, 232 (3d Cir. 2000) (describing with approval "enterprise valuation, which values the business as a going concern and includes intangibles such as relationships with customers and suppliers, and the name, profile and reputation of the business"); *In re Genesis Health Venture, Inc.*, 266 B.R. 591 (Bankr. D. Del. 2001); *In re Greate Bay Hotel & Casino Hotel & Casino, Inc.*, 251 B.R. 213, 229 (Bankr. D.N.J. 2000); *In re Cellular Info. Systems, Inc.*, 171 B.R. 926 (Bankr. S.D.N.Y. 1994); *In re Allegheny Int'l, Inc.*, 118 B.R. 282, 306 (Bankr. W.D. Pa. 1990); *In re Pullman*, 107 B.R. 909 (Bankr. N.D. Ill. 1989); *In re Fiberglass Indus. Inc.*, 74 B.R. 738, 743 (Bankr. N.D.N.Y. 1987).

undervalue entities in bankruptcy.[7] The Supreme Court held that "the criterion of earning capacity is the essential one if the enterprise is to be freed from the heavy hand of past errors, miscalculations or disaster, and if the allocation of security among the various claimants is to be fair and equitable."[8] Traditionally, an income based analysis was generated by capitalizing earnings. However, in recent years, courts have replaced the capitalization of earnings analysis with a discounted cash flow analysis as the most widely applied bankruptcy valuation technique. Nonetheless, it is useful to understand both approaches, as well as the market and cost approaches, because it is often useful to conduct several types of valuations to test the reliability of the discounted cash flow analysis.[9] Given the efficiencies of markets and the fact that bankruptcy no longer has the stigma it used to, the Supreme Court's 1941 pronunciation against a market approach may be subject to challenge. Indeed, if estimates of earnings are consistently overstated as one recent study suggests,[10] there may be a basis for development of a hybrid of the Income and Market approaches.

A. Income Approach

There are two "income' valuation methods -- methods that use the debtor's income and expenses to determine reorganization value: the discounted cash flow analysis and the capitalization of earnings analysis. Each of these approaches is discussed separately below.

1. The Discounted Cash Flow Analysis

a. General Description.

The foundation for a discounted cash flow analysis is the notion that the value of an enterprise is equal to the net present value of the enterprise's expected future cash flow.

> [Because] a dollar to be received a year from now is not equivalent in value to a dollar received today, the element of each stream of future returns cannot simply be added. Each payment must be weighted according to when it will be received. . . . [The] discounted cash flow analysis provides the framework for accomplishing this.[11]

---

7 *Consolidated Rock*, 312 U.S. at 526.

8 *Id.*

9 *See Cellular Info. Systems, supra,* (both debtor's and bank's experts employed alternative valuation methodologies, the comparable sales and comparable company approaches used to bolster their discounted cash flow analyses were found not useful by court because of lack of sufficient data).

10 *See* Allen Michael, Isreal Shaked and Christopher McHugh, *"After Bankruptcy: Can Ugly Ducklings Turn Into Swans?" Financial Analysts Journal* (May/June 1998).

11 Bradford Corner, *Corporate Valuation*, 243-46 (1993).

A discounted cash flow analysis uses forecasts of a company's ability to generate cash and then discounts those forecasts by the cost of capital. The discounted cash flow analysis requires detailed cash projections and assumptions about growth rates that are unique to the company that is being valued.[12] Thus, a discounted cash flow analysis is tailored to the company being valued.

b. Practical Application.

The discounted cash flow method attempts to estimate or project future cash flows, and then reduce them to a present value.[13] A discounted cash flow valuation has three components:[14]

(1) Cash Flow Projections: The present value of cash flows from operations during the period in which the cash flows are forecasted (the "Projection Period");

(2) Terminal Value: The residual value remaining at the end of the Projection Period; and

(3) Discount Rate: The appropriate discount rate, which is generally a weighted average cost of capital.

The discounted cash flow method values a business by adding the Cash Flow Projections to the present value of the Terminal Value.

i. Cash Flow from Operations

For the purposes of a discounted cash flow analysis, cash flow is the difference between the net cash inflows and outflows from operations, reduced by taxes actually paid, additional capital expenditures, and working capital investments. Depreciation and other noncash items are not taken into account in computing cash flow. Interest and principal payments, including payments on capitalized lease obligations, are also ignored.[15]

The length of the Projection Period will vary depending on the business cycle of the company. The optimal Projection Period will be one that covers a complete business cycle. Once steady growth is reached, the Projection Period ends and the terminal value can be calculated. Most projection periods cover at least five years and often are between five and

---

12 John D. Finnerty, *Corporate Financial Analysis,* 51 (1986).

13 *In re Pullman*, 107 B.R. 909 (Bankr. N.D. Ill. 1989) (using 5 year projections and then calculating terminal value once company reaches its maximum market share); *In re Fiberglass Indus. Inc.*, 74 B.R. 738, 743 (Bankr. N.D.N.Y. 1987) (it is necessary to discount to present value operating income for given years "and for a terminal year which represents a normalized projection for all years" which follow the last projected year).

14 Peter V. Pontaleo and Barry V. Ridings, *Reorganization Value*, 51 Bus. Law. 419, 427 (1996).

15 *Id.* at 428.

seven years.[16]

ii. Residual (Terminal) Value

The residual or terminal value represents the value of the company from the end of the Projection Period to perpetuity.[17] A terminal value is calculated because it would be inappropriate to assume that an enterprise simply disappears at the end of the Projection Period. In fact, the terminal value is often the most significant factor in a discounted cash flow analysis.[18] The terminal value depends, among other factors, on the assumptions made about operations during the Projection Period and on the assessment of the competitive position of the entity at the end of the Projection Period. For example, if the entity operates in a mature industry that will be declining over the next five years but will generate a large amount of cash, the present value of the cash flows during the Projection Period will be very high and the terminal value very low. On the other hand, if the entity is using its cash flows to fund research and development costs, the present value of cash flows during the Projection Period will be low, but the terminal value will be high.

Several techniques are used to estimate the terminal value, including the perpetuity method, price/earnings ratio and market/book approach. If the company is operating in a declining industry, liquidation values might also be used to determine terminal value.

The perpetuity method is generally the preferred method for calculating the residual value because it is based on the competitive dynamics of the economy. For example, a company in a market where returns are greater than the cost of capital will attract competitors that will eventually drive the returns down to the cost of capital, at which time the Projection Period will end.[19] The perpetuity method assumes that after the Projection Period, the rate of return on new investments is equal to the cost of capital. Thus, Capital expenditures in excess of depreciation expense will not impact cash flows since, for the new investment, the returns will equal the cost of capital and not create any new value. Accordingly, changes in future cash flows will not affect the value of the business.

Once the Projection Period ends, the terminal value can be computed by dividing the annual cash flow by the cost of capital. Using the perpetuity method, the terminal value is calculated by dividing a "perpetuity cash flow" by the cost of capital:

---

16 *See Cellular Info. Systems,* 171 B.R. at 931 n.13 (cash flow means EBITDA minus taxes paid, capital expenditures and net working capital charges).

17 *In re Allegheny Int'l, Inc.,* 118 B.R. 282, 306 (Bankr. W.D. Pa. 1990) ("residual" or "terminal" value [defined as] the point after the projection period when it is assumed that no further changes [in earnings' will occur."); *Fiberglass Indus.*, 74 B.R. at 743 ("terminal year: . . . represents a normalized projection for all years" which follow the last year in a discounted cash flow analysis).

18 Pantaleo & Ridings, *supra* note 14, at 428.

19 For purposes of this discussion, the possible situation wherein a continued return is expected in excess of the cost of capital is ignored.

$$\text{Terminal value} = \frac{\text{Perpetuity Cash Flow}}{\text{Cost of capital}}$$

Like the cash flows during the Projection Period, the terminal value must be discounted to present value.

Another approach for estimating terminal value is the price/earnings ratio approach. The price/earnings ratio approach uses a comparable company analysis to calculate a multiple that can be applied to the terminal year's EBITDA. This method is based on the assumption that a company is worth some multiple of its pre-tax cash flow at the end of the Projection Period.[20] Several problems exist in the price/earnings approach:[21]

(1) The price/earnings approach is based on the premise that value is driven by earnings. Earnings are not a good measure of economic value because alternative accounting methods are used, risk is excluded, investment requirements are excluded, dividend policy is not considered and the time value of money is ignored.

(2) An inherent inconsistency exists in commingling cash flows during the Projection Period with earnings after this period.

(3) The price/earnings approach does not explicitly take into account whether the business will be able to invest at, below, or above the cost of capital in the post-Projection Period.

(4) Finally, it is difficult to accurately forecast future price/earnings ratios. For example, the ratio of the Dow Jones Industrial between 1965 and 1985 ranged from 6 to 23.

The third method for determining terminal value is the market-to-book approach. Under the market-to-book approach, the terminal value is determined by multiplying the book value of the equity by the ratio of market value to book value at the end of the Projection Period. This approach suffers from most of the same weaknesses as the price/earnings ratio method.

iii. Discount Rate

There are three steps in the discount rate calculation. First, calculate the cost of debt. Next, calculate the cost of equity.[22] Finally, the cost of debt and equity must be weighted based

---

20 Pantaleo & Ridings, *supra* note 14, at 428.

21 Alfred Rappaport, *Creating Stockholder Value,* pp. 20, 63 (New York: The Free Press).

22 For the purposes of this discussion, the assumption is that equity will consist only of common stock. Therefore, particular valuation issues associated with preferred stock, warrants, and options, among other types of securities, will be ignored.

on the capital structure of the company to determine the weighted average cost of capital ("WACC"). "Once the WACC is determined, it is used to discount (i) perpetual cash flows to a terminal value figure as of the end of the Projection Period, and (ii) both the terminal value figure and the cash flows during the Projection Period to a present value as of the valuation date."[23]

The required rate of return on debt can be calculated based on the availability of debt in the market. Most companies use some debt to capitalize their business. The cost of debt will be based on the cost of debt for comparable companies. Because the debtor will likely borrow from public debt markets, the cost of debt is the after-tax cost of debt based upon the yields demanded by the market.

Unlike debt, the required rate of return on equity cannot be calculated directly. Instead, "it has to be calculated with reference to other potential equity investments available to investors. The debtor's cost of equity [*sic*] equal to the least amount the debtor must earn to attract its own equity investment."[24]

iv. Determine Net Present Value

The final step in the discounted cash flow analysis is the calculation of the net present value of the earnings and terminal value. The net present value is derived by discounting the earnings during the Projection Period and the terminal value using the WACC.

2. Capitalization of Earnings or Cash Flows

a. General Description.

Prior to 1980, courts used the capitalization of earnings technique to estimate value.[25] "Under a capitalization of earnings approach, average annual earnings are divided by a rate of return to arrive at value."[26] The capitalization of earnings technique is consistent with the Supreme Court's instructions in *Consolidated Rock*.

In *Consolidated Rock*, the Supreme Court recognized that a value based on a projection of future earnings, while only an estimate, is nonetheless reliable:

> A prediction as to what will occur in the future, an estimate, as distinguished from mathematical certitude, is all that can be made. But that estimate must be based on an informed judgment which embraces all facts relevant to future earning capacity and hence to

---

23 Pantaleo & Ridings, *supra* note 14, at 432-433.

24 7 *Collier on Bankruptcy*, ¶ 1129.06[2][a] (Matthew Bender 15th ed. rev. 1996).

25 *Collier*, ¶ 1129.06[2][a]; (*citing* Pantaleo & Ridings at 436).

26 *Collier*, ¶ 1126.06[2][a].

> present worth, including, of course, the nature and condition of the properties, the past earnings record and all circumstances which indicate whether or not that record is a reliable criterion of future performance.

The discounted cash flow model has replaced the capitalization of earnings method as the most commonly used income valuation approach. However, there are still several insights provided by using the capitalization of earnings model. Additionally, it is helpful to compare the results of valuations that are calculated by using more than one approach.

b. Practical Application.

One bankruptcy court described the capitalization of earnings technique as follows:

> The traditional method for determining going concern value is by capitalizing net profit. A net profit figure is selected which represents current annual earning capacity; the amount is usually based upon recent earnings history, with weighing to reflect current trends or other factors. This sum is then multiplied by a factor which represents an appropriate multiple of earnings in light of the ratio of stock prices to earnings in that type of business.[27]

There are three steps in the capitalization of earnings analysis: (1) identification of comparable firms, (2) development of a ratio for each comparable firm which yields a capitalization rate, and (3) calculation of the enterprise value by applying the capitalization rate to the debtor's earnings.

The two primary variables needed to conduct a business valuation using the capitalization of earnings analysis are prospective earnings and a capitalization rate.

i. Earnings

The initial inquiry in a capitalization of earnings analysis is which years' earnings should be used. In general, the current earnings of the entity should be used. However, a valuation expert will ignore unusual occurrences and adjust earnings for any changes in operations that have previously been planned or are expected.

The difficulty in determining which years' earnings should be used as a base period causes some to reject the capitalization of earnings approach. The SEC, in its analysis of corporate reorganization plans under the Bankruptcy Act, was inclined to eliminate -- rather than adjust -- abnormal years in the company or industry, and preferred to use earning trends instead of earning averages. Likewise, courts have steadfastly rejected estimates of future earnings based on unusual occurrences in past years. For example, in *In re Keeshin Freight Lines, Inc.*,[28]

[27] *In re Vadnais Lumber Supply, Inc.*, 100 B.R. 127, 131 (Bankr. D. Mass. 1989).

[28] 86 F. Supp. 439 (N.D. Ill. 1949).

the court rejected the principal witness's estimates of earning expectancies because the two years in question were subject to unusual events.

When using the capitalization of earnings model, the earnings selected should generally be earnings after taxes and before interest. Nonproductive and nonoperating assets, such as excess cash or working capital, benefit of income tax loss carryover, excess plant and equipment, other nonproductive property held for liquidation, or investments that are not related to the business of the company are valued separately. These values are added to the capitalization of earnings value.

ii. Capitalization Rate

The next step in a capitalization of earnings analysis, after computation of average annual earnings, is the determination of an appropriate capitalization rate. A capitalized earnings analysis derives its discount rate from financial ratios applicable to similar companies. In this way it differs from a discounted cash flow analysis that attempts to assign a discount rate appropriate to the debtor itself.[29] The valuation expert compares certain financial statistics of the debtor with statistics for other similar companies. The valuation expert determines the value of comparable companies with reference to that statistic and then interpolates the value of the debtor from the comparison. For example, where a debtor has earnings of $100 and similar companies have price/earnings ratios of 10:1, then, by analogy, the debtor's equity would have a value of $1,000 (earnings multiplied by 10).[30]

Often, the capitalization rate is derived from a price-earnings ratio as in the example above. Another ratio that is used to arrive at a capitalization rate is the ratio of Total Enterprise Value (TEV) to EBIDTA. Using price/earning ratios to arrive at a capitalization rate has the advantage of being easily explained to those in court who are not well trained in finance. However, several problems are associated with its use. For most firms in bankruptcy, prior ratios are often not a valid indication of future ratios. This is true for several reasons. Recent past years are not appropriate because the business likely sustained losses during the time period. Also, many business and operational changes may have resulted in a different type of operation, or major segments of the business may have been eliminated.

Further, the price/earnings ratios for companies with the same types of operations and debt structure may differ because of the accounting methods used to report income. In pricing the stock, the market took into consideration these accounting differences; when a court simply uses the average price/earnings ratio, it ignores adjustments made by the market. Finally, using historical price/earning ratios to value a business's future earning capacity can lead to inconsistent results.

Whichever ratio is used, the capitalization rate should reflect the market free interest rate plus the risk inherent in the enterprise and the industry. As in forecasting future expected

29 *Collier*, ¶ 1129.06[2][a].

30 *Collier*, ¶ 1129.06[2][a].

earnings, setting the rate of capitalization is best determined on a case-by-case basis, and any factors that appear relevant to a specific company's risk evaluation should be utilized to determine the rate of capitalization. Thus, when determining the appropriate rate of capitalization, courts have considered the cyclical nature of the industry, the number and character of the debtor's customers, the possible uncertainties in management, expenses and operations, the age and condition of the debtor's plant and equipment, and the rate of technological progress in the industry.

Courts also use figures obtained from other companies within the industry to derive a capitalization rate, as long as these companies are similar in nature to the debtor corporation. However, where the debtor is compared to companies substantially differing in character, courts reject the capitalization rate. For example, in the case of *In re Muskegon Motor Specialties*,[31] the expert witness calculated the capitalization rate using the price/earnings ratio of 36 publicly traded auto parts manufacturers. Since the debtor was an unlisted company with no real market for its shares -- and its sales varied from four times as great to only one-hundredth as great as the sales of the companies whose capitalization rates had been computed -- the court concluded that a comparison between such entities would yield little beneficial information.[32]

An alternative to using price/earnings ratio or the TEV/EBITDA ratio to determine the capitalization rate is to directly estimate a required rate of return. The rate of return might consist of the yields on long-term corporate bonds plus an adjustment for ownership that reflects the systematic risk of the company. The systematic risk, which refers to the average relationship between the company's stock price and the market price, is measured for publicly traded companies using a beta coefficient. This approach is similar to the approach that is used to determine the cost of capital in a discounted cash flow analysis.

A rate developed apart from the market value of comparative companies may be more representative of the risk inherent in a particular business. A rate based on risk identified by the beta coefficient should be as easily justified as using an average price/earnings ratio of companies in the same industry.

iii. Using the Rate to Determine the Value

Once a decision has been made regarding a capitalization rate, the next step is to use this rate to determine the value of the business. The value of the equity is determined by taking the average projected earnings and dividing them by the capitalization rate or multiplying them by the multiple.[33] The value of the entity is determined by adding interest-bearing debt to equity value if the price/earnings ratio was used to estimate the value of equity only. Alternatively, if the TEV value was determined directly from the capitalization rate, then the value of the equity is determined by subtracting the debt from enterprise value.

---

31 366 F.2d 522 (6th Cir. 1966).

32 *Id.*

33 A capitalization rate is the inverse of a "multiple."

B. Market Approach.

Earnings based valuations are "only educated estimates in the absence of one or more buyers, ready, willing and able to purchase the business."[34] Since estimates can often be unreliable, at least one circuit court recently rejected an earnings based analysis and used a market price instead.[35] The Seventh Circuit noted that, since there is uncertainty associated with selection of the appropriate discount rate, "where market information is available, looking to the stock's 'fair market value' -- what an arm's length buyer would be willing to pay for the stock on the open market -- is generally the best means of gauging the stock's present value. . . The collective appraisal of market participants is considered to be a more reliable measure of the stock's value than the subjective estimates of one or two expert witnesses."[36] Thus, where a market value can be assigned, there is at least some support for this valuation technique.

Additionally, for holding companies and for real estate companies where there are comparative values of recent transactions, market values are sometimes used to determine enterprise value. In the case of an investment or holding company, the market value of the securities on hand are often used to determine the reorganization value. This approach was used in *Central States Electric Corp. v. Austrian*, [37] even though the appellants argued that the valuation should take into account matters such as increases in the value of securities held, increases in dividends, and "restoration of 'leverage' through the borrowing of money and the earnings of skilled management in the purchase and sale of securities."

The rationale for the market approach is that an investment company has no fixed functional assets as would an industrial business. Moreover, a specialized service is rendered only in the sense that the company offers diversification of investment and management of assets.[38] The situation, however, is altered when the debtor's only assets consist of stock representing total control of other businesses. Under such circumstances, it is apparent that the debtor's financial outlook is completely dependent upon the financial success or failure of the wholly owned businesses. Accordingly, the debtor's valuation is based on the future earnings of those entities capitalized at the appropriate rate.[39]

C. Cost Approach.

Another valuation method is the cost approach. Under this valuation technique, individual or groups of assets are appraised to reflect current values. Following the Supreme

---

34 *Pullman*, 107 B.R. at 932.

35 *In re Prince*, 85 F.3d 314 (7th Cir. 1996).

36 *Id.* at 320.

37 183 F.2d 879, 884 (4th Cir. 1950), *cert. denied*, 340 U.S. 917 (1951).

38 *Id.*

39 *See In re Equity Funding Corp. of Am.*, 391 F. Supp. 768 (C.D. Cal. 1975).