

# FAIR VALUE™

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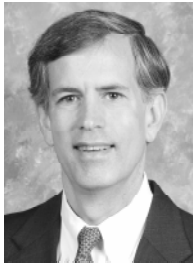
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## THE INCOME VALUATION APPROACH (THE BASICS FOR ATTORNEYS AND JUDGES)

*By: George B. Hawkins, ASA, CFA**Managing Director*

### Introduction

In determining the price to pay for a company, a buyer of a business ultimately looks to the return he or



**George Hawkins**

she will receive on his or her investment. That return might come in the form of annual dividends, growth in the value of the business over time (as eventually realized by a sale at some future point in time), or some combination of the two. The quantification of the value, in today's dollars, of these expected future sources of return is at the essence of business valuation and the income valuation approach. Attorneys who deal with valuations for any reason, including for estates and gifts, divorce, litigation, health care ventures and in business transactions should at least have a basic understanding of the income approach. This is required in order to intelligently critique a valuation where it is used and to ask questions of and/or cross-examine valuation experts or examine the reasonableness of a proposed transaction price.

This article begins with an overview of the two primary ways of using the income valuation approach. The first, the discounted future income method, involves forecasting a company's "income" streams (e.g., earnings or cash flow) on a year-by-year basis, and then converting these results into their present worth today based on the investor's required annual rate of return for taking the associated risk. The second, the capitalization of earnings

method, looks at the actual past results of the company as an indicator of its expected future results. It then converts these earnings into an estimate of value using a capitalization rate. This article provides examples of each valuation method and explain the mechanics of the various calculations and their implications to value.

Finally, the article examines how to determine the appropriate income valuation method to use in particular situations. These include:

- ◆ Rapidly growing companies
- ◆ Cyclical companies
- ◆ Start-up companies
- ◆ Mature companies
- ◆ Synergistic acquisitions
- ◆ Companies with multiple business lines
- ◆ Contracts or joint ventures with finite lives
- ◆ Liquidation
- ◆ Size of the company and the sophistication of typical buyers and sellers
- ◆ Purpose of the valuation- including equitable distribution, health care transactions involving hospitals, and bankruptcy

### Valuation Methods Within the Income Approach- An Overview

The concept of the time value of money is at the core of the income valuation approach. Namely, the income streams or cash flows the buyer of the business anticipates he or she will receive in the future can be translated into their present worth by taking into account their risk. This risk is expressed as the investor's required rate of return, also called a discount rate.

# INCOME APPROACH (continued)

Two widely used techniques to value a company's anticipated future income streams are the discounted future income and capitalization of earnings methods. Each method attacks the issue of "income" from a different vantage point. The discounted future income method looks to the future by making annual forecasts of a company's earnings and cash flows and then uses present value techniques to convert these estimates into a value of the business today. Meanwhile, the capitalization of income method looks to the actual historic results of the company as an indicator of its results in the future. This technique typically involves dividing a company's annual historic earnings by a "capitalization rate" which incorporates risk (the discount rate) and a factor for the expected future annual growth of these earnings. The measure of "income" that is capitalized most frequently is the after-tax income of the business, although the approach can also be used with pre-tax earnings, earnings before interest and taxes, measures of cash flow, and other measures that will be discussed.

Each of these methods will be explained in detail, beginning with the discounted future income technique, followed by the capitalization method. The basics of each method will be discussed and examples of each will be presented.

## **Discounted Future Income Method Explained in General**

In its purest form, valuation theory says that the value of any business is simply the present value of all of its anticipated future income streams. If the valuator had a perfect crystal ball he or she could forecast a company's future year-by-year results into perpetuity (or for the finite life of the business). Then, a discount rate (the required annual rate of return for risk) could be used to convert all of these future income streams into their individual present worth today. The result would collectively represent the value of the business.

The reality is that no valuator has a perfect crystal ball and the ability to make reasonably supported and reliable forecasts decreases the further out into the future one looks. Why? The business, economy and the world in general are subject to continuing uncertainty and change, some of it partially or completely unpredictable. The fact that the future cannot be fully known does not mean, however, that it should be ignored. Buyers and sellers of businesses are always looking forward and attempting to make sense out of chaos to determine their prospective future returns.

The discounted future income approach deals

with uncertainty in two ways. First, the greater the uncertainty, the higher the discount rate used, resulting in a lower present value for the forecasted future results. Second, since it is difficult to reliably predict beyond five or seven years in a forecast, many valuers will only forecast year-by-year results for that time period. Then, for the final year, a simplifying assumption is made that the final year's earnings (or cash flow) will continue to grow in the future at some assumed constant long-term, annual sustainable rate of growth. Unless a company is expected to go out of business, most businesses have a continuing life into the future beyond the final forecast year. Therefore, using other techniques that will be discussed later, this continuing income stream can itself be "capitalized" into an estimate of value.

Therefore, the discounted projected future income method involves projecting a company's anticipated future income streams (e.g., earnings or cash flow) on a year-by-year basis into the future, usually for five or seven years. Each of these future annual income streams are then discounted back to their present worth today at an appropriate discount rate (required rate of return on investment for risk) required by a buyer. At the final projection year a "terminal value" is determined that represents the estimated value of the sale of the company at that time. This sale value is based on the capitalized value of the company's future income stream from that point onward. In other words, if the business were sold in the final forecast year based on its earnings or cash flow, this terminal value is what would be received at that point in time.

This terminal value (which is to be received five or seven years hence) is then discounted back (at the discount rate) to its present value today. The summation of the present value of each of the forecasted annual income streams along with the present worth today of a future sale value of the company at the final forecast year results in a fair market estimate of the company.

## **What is Meant By the Term "Income?"**

Note that the term "income" is used generically. There are a variety of potential "income streams" that might be used to determine value in the discounted future income method, such as a company's net profit (after-tax), pre-tax profit, cash flow, dividends and so forth. A more commonly used interpretation of the discounted future income method involves the use of cash flow (or free cash flow) as the measure of income. This technique is called the "discounted cash flow" valuation method. Cash flow is a term that is used in many forms in the investment community for different purposes so it is

# INCOME APPROACH (continued)

important to be specific about its definition. In this context, we will use the term cash flow or free cash flow interchangeably.

A company's net income does not necessarily represent the hard dollars that can actually be returned to its shareholders in the form of cash distributions or dividends. Businesses often must reinvest a portion of the earnings to fund continuing needs for capital expenditures (to replace aging and worn out equipment, modernize, and expand), repay the principal on bank and other loans, and support the investment in working capital (such as higher levels of accounts receivable and inventory) that comes as a result of growth. "Free cash flow" is an income measure that seeks to quantify the actual cash returns to the buyer that the business might actually be able to pay after taking these other demands on resources into account and is defined as shown in **Table A**.

In the above definition, depreciation and amortization expenses are added back because they are accounting charges to earnings that are non-cash in nature. These charges are meant to provide an accounting measure of the wasting of a company's asset base (such as machinery and equipment and real estate), over their economic useful life. Remember that the goal of a

valuation is to examine the present worth of expected cash flows. Since depreciation and amortization do not represent real cash outlays they are added back to reported net income. Adding back depreciation is not a free ride, however, because businesses must periodically replace aging assets, as well as buy new ones, to remain competitive, expand and exploit opportunities. This is why capital expenditures are a deduction in **Table A** towards estimating actual free cash flow.

	Net Income (or Net Profit)
+	<u>Depreciation and Amortization</u>
=	<b>Gross Cash Flow</b>
-	Capital Expenditures
-	Incremental Working Capital Needs
+ or -	<u>Net New Long Term Borrowings</u> (Not Included If Valuation is on an Invested Capital Basis- Explained Later)
=	<b>Free Cash Flow</b>

## Example of the Discounted Future Income Method

**Tables B and C** contain simplified examples of the use of the discounted future income method. In the example "free cash flow" is used as the income measure for valuation purposes.

Revenues, expenses and earnings for a fictional company are forecast each year for five years, followed by the final sixth year, as shown in **Table B**. The individual techniques for preparing these forecasts are not shown, as this is a subject all by itself. A well-prepared valuation report would detail the forecast assumptions so that they could be scrutinized.

From the company's net profit is then subtracted those various items discussed previously which represent a call on the company's cash, i.e., capital expenditures,

**TABLE B- EXAMPLE OF THE DISCOUNTED CASH FLOW METHOD- FORECASTED INCOME STATEMENT**

DISCOUNTED CASH FLOW VALUATION METHOD VALUATION MODEL	Actual	Forecast	Forecast	Forecast	Forecast	Forecast	Terminal
	Results	Year	Year	Year	Year	Year	Forecast
	Base Year	1	2	3	4	5	Year
	2004	2005	2006	2007	2008	2009	2010
Percentage Annual Growth Rate		15%	12%	10%	8%	5%	5%
<b>Equals: Revenues</b>	<b>\$14,000,000</b>	<b>\$16,100,000</b>	<b>\$18,032,000</b>	<b>\$19,835,200</b>	<b>\$21,422,016</b>	<b>\$22,493,117</b>	<b>\$23,617,773</b>
Cost of Goods Sold (Depreciation- New Assets)	\$0	(\$67,163)	(\$136,341)	(\$207,594)	(\$421,944)	(\$457,669)	(\$581,499)
Cost of Goods Sold (Depreciation- Existing Assets)	(\$492,000)	(\$409,743)	(\$295,638)	(\$245,083)	(\$211,390)	(\$172,024)	(\$172,024)
Cost of Goods Sold	(\$7,000,000)	(\$8,533,000)	(\$9,556,960)	(\$10,512,656)	(\$11,353,668)	(\$11,921,352)	(\$12,517,420)
<b>Gross Profit</b>	<b>\$6,508,000</b>	<b>\$7,090,094</b>	<b>\$8,043,061</b>	<b>\$8,869,867</b>	<b>\$9,435,014</b>	<b>\$9,942,072</b>	<b>\$10,346,830</b>
<b>Operating Expenses:</b>							
Fixed or Semi-Fixed Expenses	\$1,393,996	\$1,203,213	\$1,251,510	\$1,301,869	\$1,354,379	\$1,755,709	\$1,823,212
Variable Expenses	\$3,669,000	\$4,310,827	\$4,828,126	\$5,310,938	\$5,735,814	\$6,022,606	\$6,323,735
Depreciation- Existing Assets	\$130,755	\$94,481	\$46,898	\$36,728	\$28,065	\$18,824	\$0
<b>Total Operating Costs</b>	<b>\$5,193,751</b>	<b>\$5,608,521</b>	<b>\$6,126,534</b>	<b>\$6,649,535</b>	<b>\$7,118,258</b>	<b>\$7,797,139</b>	<b>\$8,146,947</b>
<b>Operating Profit</b>	<b>\$1,314,249</b>	<b>\$1,481,573</b>	<b>\$1,916,527</b>	<b>\$2,220,332</b>	<b>\$2,316,756</b>	<b>\$2,144,933</b>	<b>\$2,199,883</b>
Interest Expense	(\$112,000)	(\$128,800)	(\$144,256)	(\$158,682)	(\$171,376)	(\$179,945)	(\$188,942)
<b>Pre-Tax Profit</b>	<b>\$1,202,249</b>	<b>\$1,352,773</b>	<b>\$1,772,271</b>	<b>\$2,061,650</b>	<b>\$2,145,380</b>	<b>\$1,964,988</b>	<b>\$2,010,941</b>
Income Taxes	(\$480,900)	(\$541,109)	(\$708,908)	(\$824,660)	(\$858,152)	(\$785,995)	(\$804,376)
<b>Net Profit</b>	<b>\$721,349</b>	<b>\$811,664</b>	<b>\$1,063,363</b>	<b>\$1,236,990</b>	<b>\$1,287,228</b>	<b>\$1,178,993</b>	<b>\$1,206,565</b>

# INCOME APPROACH (continued)

TABLE C- CALCULATING FREE CASH FLOW AND THE RESULTING ESTIMATE OF VALUE

VALUATION OF FREE CASH FLOW DISCOUNTED CASH FLOW VALUATION METHOD	Forecast Year 1 2005	Forecast Year 2 2006	Forecast Year 3 2007	Forecast Year 4 2008	Forecast Year 5 2009	Terminal Forecast Year 6 2010
Net Profit (From Table B)	\$811,664	\$1,063,363	\$1,236,991	\$1,287,230	\$1,178,997	\$1,206,568
<i>Plus (Minus):</i>						
Depreciation- Existing (From Table B)	\$504,224	\$342,536	\$281,811	\$239,455	\$190,848	\$172,024
Depreciation- New (From Table B)	\$67,163	\$136,341	\$207,594	\$421,944	\$457,669	\$581,499
Capital Expenditures	(\$470,000)	(\$484,100)	(\$498,623)	(\$1,500,000)	(\$250,000)	(\$866,552)
Additional Working Capital Needs	(\$211,050)	(\$194,166)	(\$181,222)	(\$159,475)	(\$107,646)	(\$113,028)
Net Borrowings (Repayments) of Long-Term Debt	(\$250,000)	(\$250,000)	(\$250,000)	\$1,250,000	(\$315,000)	(\$315,000)
<b>Equals: Free Cash Flow</b>	<b>\$452,001</b>	<b>\$613,974</b>	<b>\$796,552</b>	<b>\$1,539,154</b>	<b>\$1,154,868</b>	<b>\$665,512</b>
Times: Present Value Factor (Mid-Period) at Selected Discount Rate	0.9054	0.7421	0.6083	0.4986	0.4087	
<b>Present Value of Each Annual Cash Flow at Valuation Date</b>	<b>\$409,223</b>	<b>\$455,628</b>	<b>\$484,523</b>	<b>\$767,402</b>	<b>\$471,969</b>	

FINAL COMPUTATION OF VALUE:	
Total Present Value of Cash Flows, Years 1 Through 5	\$2,588,744
Plus: Present Value of Proceeds of Company Sale at End of Year 5	\$1,448,464
<b>EQUALS: VALUE BY DISCOUNTED CASH FLOW METHOD</b>	<b>\$4,037,208</b>
Discount Rate (all equity)	22.00%

Terminal Value Cash Flow (Year 6)	\$665,512
Divided By Cap Rate (See Below for How Calculated):	17.00%
<b>Equals: Terminal Value (Sale Value, End of Year 5, Based on Cash Flow Forecasted for Year 6)</b>	<b>\$3,914,777</b>
Times: Present Value Factor Based on Discount Rate	0.3700
<b>Equals: Present Value of Proceeds of Future Sale</b>	<b>\$1,448,464</b>

Capitalization Rate Calculation:	
Discount Rate	22.00%
Less: Long Term Annual Growth Rate	-5.00%
<b>Equals: Capitalization Rate Used for Final Year</b>	<b>17.00%</b>

working capital needs and debt repayment (or new borrowings which represent a source of cash), as seen in **Table C**. Using a discount rate of 22% (the annual rate of return to compensate the buyer for risk), present value factors are then shown to enable the translation of each year's cash flow into its present worth today to a buyer. For example, in year three the present value factor is 0.6083. This was determined as follows using mid-period discounting (assumes each year's cash flow is realized, on average, in the middle of the year), where n stands for the year (here, the n is 2.5, or 3-0.5, because the cash flow is realized midway during year 3):

$$\frac{1}{(1 + \text{discount rate})^{n-0.5}} = \frac{1}{(1 + 0.22)^{3-0.5}}$$

$$= 0.6083 \text{ (Present Value Factor)}$$

where "n" stands for the period in which the cash flow is to be received

In other words, the present worth today of the cash flow in year 3 (which is realized in the middle of year 3, or period 2.5) is about \$0.61 per dollar. Therefore, the present value, today, of the cash flow in year 3 (\$796,552) is \$484,523 (\$796,552 times 0.6083). This same calculation is repeated for each year from

years 1 to 5 to arrive at the present worth today of each anticipated annual cash flow. When summed together, these five years of cash flows are worth a total present value to the buyer of **\$2,588,744**.

However, the business and its cash flows are not likely to come to a screeching halt at the end of year 5. Therefore, the capitalized value of the long-term continuing income (cash flow) needs to be determined and also converted into its present value today. The final year's forecasted cash flow is capitalized (more about this later) by dividing the cash flow (here \$665,512) by a capitalization rate (here 17%, which is based on the annual discount rate of 22% for risk, minus a long-term sustainable annual growth rate of 5%) to arrive at a value estimate of \$3,914,777. In other words, if the business were sold at the end of year 5 based on its expected cash flow for year 6, it would be worth \$3,914,777 at that time. However, the buyer of the company today is not standing out at the end of year 5 about to pocket these proceeds. Therefore, these proceeds must be discounted back to their present worth today.

Since the sale and its proceeds are assumed to come at the end of year 5 (and not at the middle of year 5), then the end of period discounting convention rather than mid-period discounting convention needs to be used. Since the buyer requires a 22% rate of return, the present

# INCOME APPROACH (continued)

value factor for the end of year 5 is 0.3700, calculated as follows, where n stands for the year:

$$\frac{1}{(1 + \text{discount rate})^n} = \frac{1}{(1 + 0.22)^5} = 0.3700 \text{ (Present Value Factor)}$$

*where "n" stands for the period in which the cash flow is to be received*

In other words, proceeds from the sale received at the end of year 5 are only worth \$0.37 per dollar today, taking into account the risk of their receipt and the time value of money. Multiplying the estimated sale value of \$3,914,777 by a present value factor of 0.3700 results in a present worth, today, of \$1,448,464.

Finally, reaching the overall company value is simply a matter of adding the sum total of the present values of the individual annual cash flows (\$2,588,744) to the present value of the terminal year value (\$1,448,464) to arrive at a total value of \$4,037,208. This represents the value of the company before other possible adjustments such as for issues related to control, lack of marketability and other factors, subjects for a different discussion.

## The Result is an "Equity" Value

Because the cash flow measure previously used is after the repayment of interest expense and debt to creditors it represents the potential discretionary cash flow of the business that might be paid out to the common shareholders. Therefore, the value of the company in this instance is synonymous with the value of its common shares. This is referred to as an **equity-oriented** use of the discounted future income method. For this same reason, the discount rate that was used to discount the equity cash flows is called an **equity discount rate**.

This equity valuation technique is not always the easiest or the best valuation method to employ. Practically speaking, it is often difficult to forecast individual borrowing and repayment plans in the future on a year-by-year basis, however, those forecasted changes in the debt of the business can have a significant impact on its interest expense, and therefore, its earnings and cash flows. Finally, the use of debt (up to a certain prudent point) in a company's capital structure can lower its overall cost of capital because borrowing is much cheaper than the cost of equity, and interest expense is tax deductible. But what if the company being valued is for sale, but has been very conservative and uses no debt whatsoever? Or, what if the company uses a less than efficient level of debt? These factors make an equity-oriented discounted future income

approach much more difficult to employ in the typical valuation assignment.

## The "Invested Capital" (or "Net of Debt") Valuation Alternative

Instead of forecasting the individual changes in the debt levels of a company, one alternative is to assume that the company employs a constant level of interest-bearing debt over the forecast period in proportion to the market value of equity in its capital structure. That proportion of debt might be assumed to be its actual current amount, or an amount based upon some normal industry standard (such as in the case of the previously discussed company which under-utilizes debt and therefore has an inefficient capital structure). This method is often referred to as either the "invested capital" or "net of debt" variation, each of which can be misleading to the uninformed. "Net of debt" does not mean that the company has no debt. Rather, it means that the income streams (cash flows) exclude any impact of the claims of interest-bearing creditors who expect the repayment of interest and principal (i.e., interest expense or principal debt repayment is not incorporated into the discounted cash flow model). Said another way, the forecasted cash flows do not take into account how the company is financed, whether with debt, equity, or a combination of the two.

In addition, net of debt does not mean that the impact of the company's ultimate obligation to repay the actual debt is ignored. In the final step using the invested capital technique, the value of a company's actual debt outstanding is subtracted to arrive at the value of its common stock. For this reason some valuers also refer to this method as an enterprise valuation method, as opposed to an equity valuation method. The earlier equity version of the discounted cash flow method goes directly to the value of the equity, never dealing with the question of the value of the enterprise or how the company is financed.

When an "invested capital" approach is employed, the income streams are discounted back to their present value at a "weighted average cost of capital," or "WACC." The WACC is simply a discount rate measure (again, an annual return for risk) which incorporates the costs of debt and equity assumed to be used in the capital structure, assuming that this capital structure stays at a constant fixed proportion. Remember that the earlier example of the discounted cash flow method used an "all equity discount rate." The weighted average cost of capital simply moves a step further and says that the investor's required annual rate of return (a discount rate) is really a

# INCOME APPROACH (continued)

blend of the cost of equity capital and the cost of debt since companies typically employ both in the capital structure. Thus, the weighted average cost of capital is able to capture the effects of the cost of equity and the after tax cost of debt on the value of the forecasted cash flows today. The resulting value after discounting the cash flows of the business is called the “total invested capital value” of the company, without respect to how the company is financed. From this value is then subtracted the actual current value of the business’s interest-bearing long-term debt to arrive at the fair market value of the company’s equity, before other adjustments.

## Capitalization of Income Method Explained in General

Theoretically, in every business valuation the valuator could forecast year-by-year results into the future and then discount each individual income stream back to its present worth, as in the discounted future income method just described. That may be unnecessary, however, if the enterprise’s annual historic income is expected to grow in the future at a more or less stable annual rate of increase. In this circumstance, math comes to the rescue with elegant simplicity.

If a company’s annual income grows at a constant rate into the future, the valuator can obtain exactly the same value as with year-by-year forecasts simply by dividing the company’s historic income stream by a capitalization rate. Also called a “single period” valuation method, the formula is shown in **Table D**.

<b>Table D</b>	
<b>Formula for the Use of the Capitalization of Income Method</b>	
Value =	$\frac{\text{Income Stream for the Coming Year}}{(d-g)}$
<i>Where:</i>	
	$d = \text{Discount Rate (Required Annual Rate of Return For Risk)}$
	$g = \text{Annual Future Growth Rate}$

The “*d-g*” component above is called a capitalization rate and is determined by subtracting the estimated future long term annual growth rate of income from the rate of return for risk required for that income. The capitalization method simply says that value is a function of the elements of a company’s income, the risk associated with that income (reflected in the discount rate), and the income’s expected rate of future annual growth.

## Example Using the Capitalization of Earnings Method

The use of numbers illustrates how the method actually results in a value estimate (**Table E**). Suppose XYZ Company had historic annual net income for 2004 of \$500,000. Further, assume that income is expected to grow 5% annually (the “*g*”, or annual growth rate). Since 2005 income is expected to grow at this constant rate, the income for 2005 is an estimated \$525,000 (\$500,000 of 2004, plus 5% growth in 2005). After a full analysis of the business, the industry and other factors, the valuator estimates the annual rate of return required by a buyer for risk to be 25% (the “*d*”, or discount rate). Therefore, the preliminary value of the company by the capitalization of earnings method is \$2,625,000, calculated as shown in **Table E** below:

<b>Table E</b>		
<b>Calculating The Value By The Capitalization Of Earnings Method</b>		
Company Income, Coming Year	Divided By: Capitalization Rate	Equals: Value Estimate
\$525,000	0.20 (25%-5%)	\$2,625,000

Said another way, a capitalization rate of 20% (as in **Table E**) is the same as saying that the multiple applied to coming year earnings is 5 times (inverse of 0.20), assuming that earnings grow at a constant annual growth rate of 5%. Alternatively expressed, the buyer is expected to recoup his or her purchase price in 5 years through the income generated by the business.

Note that the method illustrated above was calculated by dividing coming year earnings by the capitalization rate. Suppose, instead, that the desire is to use the latest actual year earnings results (2004). Since the cap rate is to be applied to coming year earnings in the capitalization method, the cap. rate must be adjusted downward to back out the coming year’s assumed annual growth in earnings before the cap rate can be applied to the latest year’s actual results, as shown in **Table F**. The effect of backing out the coming year’s growth is to lower the capitalization rate.

If the latest year’s actual income of \$500,000 is divided by the capitalization rate of 19.05% the result is a value of \$2,624,672, differing from the earlier value only due to rounding in adjusting the cap rate to back out the coming year’s growth.

# INCOME APPROACH (continued)

Capitalization Rate, Coming Year	20.00%
Times: Adjustment for Assumed Growth 1/(1 + annual growth rate), or 1/(1 + 0.05) for 5% growth	X <u>0.9524</u>
<b>Equals: Capitalization Rate Used For Actual Latest Year Results</b>	<b>19.05%</b>

annual rate of increase each year into the future, into perpetuity. By contrast, the discounted future income method enables the valuator to forecast each specific year's anticipated results, thus capturing the impacts of changing growth rates, profit margins and other key factors. Selecting the appropriate method to use, or, if both are used, determining which method warrants the greater weight involves a number of different considerations discussed in the following sections.

## Capitalizing Earnings Is Not Just A Theory, But Is Evident In the Real World

It is a common reaction of business owners, attorneys and others not familiar with valuation theory to react with disbelief and skepticism at the idea of capitalizing a company's earnings into a value estimate. Typically, either the math makes no sense to them or they react with the notion that this is all just an exercise devised by esoteric academics in ivory towers.

For the best real world laboratory of why these theories actually work, simply follow the stock market daily and see what happens to public company share values. If a business comes out with a new product that brightens its future earnings outlook the share value rises as investors, in effect, "capitalize" the higher anticipated future stream of income. Or consider two competitors in the same industry and with the same annual income. One has just become the target of a product liability lawsuit, calling into doubt its future survival. Its share value is driven down due to an increase in its perceived risk (the "d," or discount rate discussion earlier), possibly combined with a diminished future earnings outlook ( a change in the "g," or annual growth factor earlier).

Values of private companies, large and small, are impacted by the same factors of risk and growth. If two companies have the same risk profile but one has a higher anticipated growth rate of earnings, the rational investor will pay more for the one with growth. Similarly, if two companies have the same income and growth outlook but one is much riskier, the one with greater risk will be worth less.

## Determining the Appropriate Income Method to Use- An Overview

The two income methods just described quantify value in two fundamentally different ways that have important implications about which one is appropriate in a given valuation assignment. This distinction arises from the different underlying assumptions used in each model. The capitalization method assumes that company income (however defined) grows at the same constant

## Specific Situations and Their Ramifications to the Method Indicated

**a. Rapid Growth Companies-** Going back to the importance of the time value of money, remember that the earlier in time an income stream is received, the greater its present worth today. Suppose the valuation assignment involves a rapidly growing company. In the latest historic year (year 0), the company had annual after-tax earnings of \$100,000. Over each of the next three years, management expects annual earnings to grow at a 35% annual rate of increase because of the market acceptance of a new product line. In years four and five the rate of growth is expected to slow to 8% increases, followed by a long-term growth rate of 5% from years six onward as the demand for the product reaches maturity.

In this example an explosion in earnings will occur in the next few years, therefore having a large impact on overall company value from the standpoint of the time value of money. How can this valuation impact best be captured? This situation is clearly difficult to handle in the context of a single period valuation model such as the capitalization of earnings method. Under that method the capitalization rate is determined by subtracting a sustainable and constant annual rate of growth from the discount rate. Use of a 35% constant annual growth rate is clearly not appropriate, as it is practically impossible for this to be maintained by any company on a long-term basis. If compounded long enough at 35% the company would eventually become larger than the entire U.S. economy! Alternatively, if 5% is used as the long-term annual growth rate, the company will be materially undervalued since the capitalization model will fail to capture the major impact of substantial near-term growth rates that are seven times higher than the long-term rate.

By contrast, the discounted future income method is perfectly suited to handle the rapid growth company and its valuation implications. Each individual year of the rapid growth phase can be separately forecasted and discounted back to a present worth. Then, the long-term growth would be captured by capitalizing

# INCOME APPROACH (continued)

<b>Table G</b> Using the Discounted Future Earnings Method to Capture The Impacts of Near-Term Rapid Growth							
	Actual Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Growth Rate of Earnings		35%	35%	35%	8%	8%	5%
Earnings	\$100,000	\$135,000	\$182,250	\$246,038	\$265,721	\$286,979	\$301,328
Present Value Factor @20% Discount Rate (Mid-Period Discounting)		0.9129	0.7607	0.6339	0.5283	0.4402	
<b>Present Value of Earnings</b>		<b>\$123,242</b>	<b>\$138,638</b>	<b>\$155,963</b>	<b>\$140,380</b>	<b>\$126,328</b>	

<p><b>Final Value Calculation:</b></p> <p>Present Worth of Annual Earnings <span style="float: right;">\$684,551</span></p> <p>Plus: Present Worth of Terminal Year <span style="float: right;"><u>\$807,358</u></span></p> <p><b>Equals Total Value <span style="float: right;">\$1,491,909</span></b></p>	<p><b>Terminal Value Calculation:</b></p> <p>Final Year Earnings <span style="float: right;">\$301,328</span></p> <p>Divided By Capitalization Rate (20% Discount Rate – 5% Annual Growth Rate) <span style="float: right;"><u>0.15</u></span></p> <p>Equals: Terminal Year (Continuing) Value <span style="float: right;">\$2,008,853</span></p> <p>Times: Present Value Factor @20% (From End of Year 5) <span style="float: right;"><u>X 0.4019</u></span></p> <p><b>Equals: Present Worth of Final Year Terminal Value <span style="float: right;">\$807,358</span></b></p>
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the final forecast year earnings, which represents the point at which this stabilized growth rate is reached. Reaching the final value is then simply a matter of adding the present values of the annual earnings streams together with the present value of the continuing value at the terminal year. **Table G** shows how the discounted future income approach is used to solve the earlier rapid growth example in a simple, yet accurate manner.

**b. Cyclical Companies-** Some companies are highly cyclical, with earnings riding a periodic roller coaster tied to an overall industry or economic cycle. Such a company might have two or three years of rapid growth on the rebound from an economic slump, followed by a slowing growth in earnings as market demand is satiated, followed by a downturn and then potentially losses as the economy enters a recession. As the economy recovers from a recession, earnings rebound, and the cycle is repeated. Examples of industries that are typically highly cyclical include general contractors, industrial truck manufacturers and furniture manufacturers, to name just a few. As always, the facts and circumstances affecting a particular company will influence whether it is cyclical.

Consider the valuation dilemmas the cyclical company presents in the selection of the appropriate

valuation approach. If a company is at the very zenith of the cycle, capitalizing the highest earnings extrapolates this peak each year into the future, missing the negative impacts of the down years and therefore overvaluing the company. If a company is at the bottom of the cycle and losing money the capitalization method assumes this too will continue forever and gives an inaccurately low value by that method. If a rebound in income is likely to come soon then capitalizing trough year earnings fails to capture the effects of this recovery and leads to an undervaluation.

This situation is well suited to the use of the discounted future income method. However, there is one major caveat. For the discounted future income method to work in this situation, the general nature of the cycle must be reasonably predictable (i.e., as to the timing and length of each phase of the cycle) and the associated earnings for each year must be subject to estimation. This is easier said than done, since no two cycles are exactly alike. Also, determining the patterns of a cycle takes substantial time and effort and may require obtaining a long history of financial results to help gauge the trends of past cycles and their impacts. Finally, determining when the final long-term sustainable terminal year will occur (which should represent the midpoint of



# INCOME APPROACH (continued)

the cycle, i.e., between the high and the low points) is quite difficult. Determining the appropriate sustainable year requires the ability to forecast what year this midpoint will actually occur, as well as the earnings in that year.

Alternatively, the capitalization of earnings method brings substantial simplicity to the problem, but not without its own dilemmas. Positively, the valuator could simply select a multi-year average of historic earnings that captures the full range of the typical cycle. Thus, the value takes into account that neither the high or low years are extrapolated into the future, but rather the average year. Negatively, several problems arise with this method. For example, if the company is now entering a losing, recessionary phase that might last several years, it is certainly not likely to post an average profitable year for some time to come. The capitalization method then overstates company value from the time value of money standpoint. Additionally, simply using the historical average earnings pattern does not mean this will be the pattern in the future as the magnitude and duration of the current cycle may differ from those of the past.

Both methods clearly have their merits and shortcomings in dealing with the valuation needs of the cyclical company. Which one is appropriate to use will ultimately depend in large part on the judgment of the valuator in determining the predictability of earnings over the cycle and the nature of the cycle. However, real world buyer considerations might influence this decision-making process. Buyers of highly cyclical companies (particularly smaller companies where the buyer is often less sophisticated) might consider a discounted future income approach to be highly speculative and place their focus on the average results of the past as a known quantity. While business valuers might argue with whether or not the buyer is using the most theoretically correct method, they must not forget the realities of how buyers and sellers sometimes think.

**c. Start-Up Companies-** In a start-up company there is no historical income to enable the use of the capitalization of earnings method. In such a situation the discounted future income method might be the only valuation method available. As should be obvious, the real difficulty in using this method is the ability to estimate year-by-year results when the company has little or no actual record of accomplishment. However, the company may have a patent on a promising new technology that has the potential to generate substantial earnings. The fact that the company does not have a history of earnings does not therefore necessarily mean that the company has no value.

**d. Mature Companies-** A mature company is one that has normally passed a rapid growth phase and is probably at or near its sustainable long-term rate of growth. While not universally true, many mature companies will have stable and predictable earnings patterns. A soft drink bottler is a good example of a mature business. This fact set typifies the type of company for whom the capitalization approach is often best suited. Whether or not earnings, free cash flow or some other measure is the most appropriate income stream to capitalize is open to debate. It is often true that a mature company will generate sizeable cash flows that can lead to greater dividends to shareholders. Unless the company intends to use its excess cash resources to invest in new product lines or acquiring growing businesses, cash flow is often be a better valuation measure.

**e. Synergistic Acquisitions-** In some industries there exist opportunities for an acquiror to purchase a similar company or competitor and eliminate duplicative overhead costs, achieve distribution or marketing efficiencies, and realize other benefits. As a result, the sum of the parts may generate more together than they each could separately. Arguably this “synergy,” in some cases, represents investment value to the specific buyer, and not fair market value. However, if acquisitions in an industry are driven by synergism and there are numerous transactions occurring, the fair market value of companies may converge on their synergistic value.

Realizing the benefits of synergism sometimes takes several years or more to be fully implemented and realized. Additionally, initial restructuring costs and outlays might be incurred, divisions sold, and other factors come into play. All of these factors are best capturing using the discounted cash flow method. However, its implementation may require forecasting of substantial complexity.

**f. Companies with Multiple Subsidiaries or Divisions-** The overall earnings and cash flows of a company with multiple divisions or subsidiaries is really the sum of the respective results of each individual operation. Each division might have different growth rates and forces at work that bear little similarity. One division might be mature, growing slowly, and generating substantial cash flows, while another might be rapidly growing and consuming cash to support the demands of rapid growth. It is sometimes the case that this type of valuation engagement is best captured by the use of the discounted future income method. Forecasts are developed for each division or business unit, and then aggregated into overall company results. If subsidiaries or divisions are few and if a second business unit is

# INCOME APPROACH (continued)

immaterial to overall results, or if the business units are similar and both mature, it might be that a simple capitalization method for the entire enterprise will suffice.

## **g. Finite Contracts or Joint Ventures-**

Companies or joint ventures are sometimes formed to fulfill a single purpose or to perform a contract having a specified duration. Alternatively, a contract might have a strong likelihood of non-renewal at the end of the contract term. The latter case raises a question as to management's ability to successfully re-deploy company assets into another business at the termination of the contract. Because capitalization methodologies assume earnings or cash flows will continue indefinitely, they are not appropriate for use in valuing the finite-lived venture. In contrast, the discounted future income method is well suited to this scenario.

**h. Liquidation-** If liquidation is pending or in progress, many of the same issues present in valuing the finite venture or contract also come into play. If the timing of the liquidation will occur in a matter of months, the impact from a time value of money standpoint may be negligible. This suggests that the use of the discounted future income approach might be inappropriate. However, the longer the duration of the liquidation process, the more important a role the time value of money aspect will play in affecting the present value of shareholder cash returns, leading, in turn, to the use of the discounted future income method.

Liquidation does not necessarily imply a bankrupt or failing company. A winding down may simply be the natural course of business. An excellent example is a real estate venture where the developer originally purchased raw land, put in roads and sewer service, and has begun marketing the lots for sale for some commercial or residential use. As lots are sold and development loans are paid down, the project begins to generate cash payouts to its shareholders or partners. Unless some new project is undertaken, the ultimate impact is that the development venture is in a steady but deliberate state of liquidation, perhaps better described as a winding down process. The developer might have a history of lot sales, prices realized per lot, and an estimate of the time required for the market to absorb the remaining lot inventory. From these and other inputs it is relatively straightforward to construct a simple discounted cash flow valuation forecast that captures the associated impacts on value of the cash returns these lots will generate.

**i. Size of the Company Being Valued and the Sophistication of Typical Buyers and Sellers-** Valuators must not disregard the marketplace and how real buyers

and sellers think and act. Even though both discounted future income and capitalization methodologies might well be warranted, the marketplace might influence the final weightings or emphasis on the findings of each in arriving at a final value. For larger corporate buyers, institutional investors, venture capital firms and financially sophisticated parties, there is a clear bias towards the use of the discounted future income method, and, more specifically, the discounted cash flow technique. By contrast, the individual purchaser of a very small business is often financially unsophisticated and might look entirely at the actual results of the company, placing no credence on forecasts. Thus the decision about which method to use and the weight to put on each in arriving at a final value must be carefully considered in each case.

**j. The Purpose of the Valuation-** As odd as it may seem, the purpose of the valuation might dictate the relevant income methodologies used. For example, North Carolina equitable distribution case law suggests that the post-marital efforts of the spouse are considered his or her separate property since they occur after the marriage has ended. Does this suggest that discounted future income method is not appropriate in this case? Some attorneys have argued this is the case, suggesting that only historic capitalization results should be used. The problem with their suggestion, however, is that a capitalization method always involves a future forecast. The only difference is that the assumed rate of annual growth in the capitalization method is assumed constant.

Another example where the purpose can dictate the method involves the valuation of medical practices or other health care entities for purchase or sale by tax-exempt hospitals. The Internal Revenue Service and the U.S. Department of Health and Human Services (which administers Medicare) is highly suspicious of these transactions. Their primary concern is the great potential for hospitals to overpay the selling physicians in a purchase of the practice (or sell a practice to physicians at an abnormally low price) as an inducement or kickback to continue to generate patient referrals to the hospital after the purchase (or sale). Such a kickback is a felonious violation of the Medicare Fraud and Abuse Statutes. As a result, internal IRS valuation training manuals for their agents (which are not meant to represent official policies or positions), nonetheless give some indication of possible Service thinking on valuation methodologies.<sup>1</sup>

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<sup>1</sup>*Integrated Delivery Systems and Joint Venture Dissolutions Update- CPE Update for 1994/1995, Internal Revenue Service*, by Charles Kaiser, Phyllis Haney and T.J. Sullivan.

# INCOME APPROACH (continued)

The IRS manual (albeit now very dated, but the only item available) appears to give an indication of the Service's preference for the discounted cash flow valuation approach. Since the Service requires the valuation to take into account the planned post-transaction annual compensation and benefits to be paid by the hospital to the selling physicians in determining the pre-transaction value of the practice, it appears that the Service is emphasizing the use of the discounted cash flow method. In a hospital purchase of a medical practice, the Government is concerned that the selling physicians will continue to realize compensation or benefits that equal or exceed what they made as owners prior to the sale, with the result being that the acquiring hospital might actually realize little or no cash return on its investment. Hence, by not taking the post transaction compensation into account, the selling physicians would have their cake and eat it too- being paid compensation as if they were still owners, yet receiving a selling price based on their working at salaried employee levels. Similarly, the hospital would have paid for goodwill it never actually received in the form of cash returns. This in essence, is the payment of a kickback to the selling physicians. By modeling the post-transaction cash flows (and taking into account the planned physician compensation if the hospital is purchasing the practice), the Service believes that the discounted cash flow method enables the determination of the real economic substance of the transaction and the actual value to be transferred to the hospital.

This is obviously a complex area that is subject to change over time, as the Service either explicitly makes its position officially known, or policy is established through case law decisions. Therefore, the valuator considering the valuation of a medical practice or another type of health care entity (with any potential for Medicare fraud and abuse issues) should consult a competent health care law attorney. The ramifications of an improperly or poorly prepared valuation could be the loss of a hospital's tax-exempt status, fines or penalties, or possibly even a felony charge.

During the mid and late 1990s, the trend was for hospitals to acquire medical practices. However, many of these acquisitions did not work out well for hospitals, many of whom lost large amounts of money on the practices that they purchased. As a consequence, during the current century the trend is now in the other direction- many hospitals are divesting of their medical practice holdings, typically selling them back to the physicians, transactions which also have Medicare fraud and abuse implications. In addition, hospitals are constantly

forming new joint ventures with physicians and valuation issues become critical to the determination of the capitalization of these ventures and the resulting ownership positions of the parties.

A final example of how the valuation purpose influences the methods selected involves the valuation of financially distressed companies operating under bankruptcy court protection. Although the subject company might potentially be awash in debt, the relevant approach in some cases may be to value the company without respect to its current actual debt load, but rather based on some normal debt level. This sometimes is the appropriate method to use so that the Bankruptcy Court can then determine how it will allocate the continuing value of the business across the various classes of secured and unsecured creditors and equity holders. This can be used by the Court to set the stage to enable the company to emerge from bankruptcy protection.

## Conclusion

The income valuation approach is a powerful way of estimating a company's value, offering the valuator several different methods including the capitalization of income, and the discounted future income techniques. Both methods ultimately derive value from the underlying notion that the present worth of an investment is simply the present worth, today, of a future return or series of returns, whether from income, cash flow, dividends, or a future sale or liquidation. This present worth is tied to an annual investor required rate of return (a discount rate), which encompasses risk and the time value of money. Both methods have their pros and cons and one or the other, or both, might not be appropriate for a given valuation assignment. This article has covered broad issues in deciding how to make practical judgments in the valuation process. ♦

**George B. Hawkins** is co-author of the *CCH Business Valuation Guide* and a Managing Director of Banister Financial, Inc., a business valuation firm in Charlotte, North Carolina. He can be reached at [ghawkins@businessvalue.com](mailto:ghawkins@businessvalue.com) or 704-334-4932.

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