# Attorney CLE Series

# The Income Approach to Business Valuation

UNDERSTANDING THE METHODS AND THEIR BASIC APPLICATION

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presented by the GYF Business Valuation & Litigation Support Services Group

**GROSSMAN YANAK & FORD LLP** Certified Public Accountants and Consultants

### Grossman Yanak & Ford LLP

eadquartered in Pittsburgh, Grossman Yanak & Ford LLP is a regional certified public accounting and consulting firm that provides assurance and advisory, tax planning and compliance, business valuation and technology services. Led by five partners, the 24-year-old firm employs approximately 55 personnel who serve corporate and not-for-profit entities in Pennsylvania, Ohio, West Virginia and New York.

Our firm was founded on the idea that the key to successful, proactive business assistance is a commitment to a high level of service. The partners at Grossman Yanak & Ford LLP believe that quality service is driven by considerable involvement of seasoned professionals on a continuing basis. Today's complex and dynamic business environment requires that each client receive the services of a skilled professional with a broad range of experience and knowledge who can be called upon to provide efficient, effective assistance.

Grossman Yanak & Ford LLP combines a diversity of technical skills with extensive "hands-on" experience to address varied and complex issues for clients on a daily basis. We pride ourselves on bringing value-added resolution to these issues in a progressive and innovative manner. Our ability to produce contemporary, creative solutions is rooted in a very basic and ageless business premise – quality service drives quality results. Our focus on the business basics of quality technical service, responsiveness and reasonable pricing has enabled the firm to develop a portfolio of corporate clients, as well as sophisticated individuals and nonprofit enterprises.

Our professionals understand the importance of quality and commitment. Currently, the majority of the professional staff in our Assurance and Advisory Services and Tax Services Groups hold the Certified Public Accountant designation or have passed the examination and need to complete the time requirements for certification. Each of our peer reviews has resulted in the highest-level report possible, attesting to the very high quality of our firm's quality control function. The collective effort of our professionals has resulted in our firm earning an exemplary reputation in the business community.

### Grossman Yanak & Ford LLP...Quality You Deserve!

### Robert J. Grossman, CPA/ABV, ASA, CVA, CBA



b ob brings extensive experience in tax and valuation issues that affect privately held businesses and their owners. The breadth of his involvement encompasses the development and implementation of innovative business and financial strategies designed to minimize taxation and maximize owner wealth.

His expertise in business valuation is well known, and Bob is a frequent speaker, regionally and nationally, on tax and valuation matters. He is a course developer and national instructor for both the American Institute of Certified Public Accountants (AICPA) and the National Association of Certified Valuators and Analysts (NACVA) and served as an

adjunct professor for Duquesne University's MBA program. Bob has also written many articles for several area business publications and professional trade journals.

After graduating from Saint Vincent College in 1979 with Highest Honors in Accounting, Bob earned a Masters of Science degree in Taxation with Honors from Robert Morris University. He is a CPA in Pennsylvania and Ohio and is accredited in Business Valuation by the American Institute of Certified Public Accountants. Bob also carries the well-recognized credentials of Accredited Senior Appraiser, Certified Valuation Analyst and Certified Business Appraiser.

A member of the American and Pennsylvania Institutes of Certified Public Accountants (PICPA), Bob has previously chaired the Pittsburgh Committee on Taxation. He has also served as Chair of the Executive Advisory Board of NACVA, its highest Board. Currently Bob is the Chair of NACVA's Professional Standards Committee; he previously chaired its Education Board.

Bob received the NACVA "Thomas R. Porter Lifetime Achievement Award" for 2013. One award is presented annually to a single member, from the organization's 6,500 members, who has demonstrated exemplary character, leadership and professional achievements to NACVA and the business valuation profession, over an extended period of time.

Bob is a member of the Allegheny Tax Society, the Estate Planning Council of Pittsburgh and the American Society of Appraisers. He has held many offices and directorships in various not-for-profit organizations. He received PICPA's 2003 Distinguished Public Service Award and the 2004 Distinguished Alumnus Award from Saint Vincent College.

Bob and his wife, Susie, live in Westmoreland County. They have two grown children.

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# Melissa A. Bizyak, CPA/ABV/CFF, CVA



elissa has practiced in public accounting for 20 years and has significant experience in business valuation and tax-related issues for privately-held concerns and their owners. Her experience is diverse, with clients including both private and publicly-held companies in a wide variety of industries.

Melissa has performed valuations for various purposes, such as Employee Stock Ownership Plans (ESOPs), equitable distributions, buy/sell transactions, dissenting shareholder disputes, value enhancement and gift and estate tax purposes. She also provides litigation support services, including expert witness testimony.

After graduating from the University of Pittsburgh in 1994 with a B.S. in Business/Accounting, Melissa spent more than two years with a local accounting firm in Pittsburgh. She joined Grossman Yanak & Ford LLP in 1997.

Melissa is a certified public accountant. She is accredited in business valuation and certified in financial forensics by the American Institute of Certified Public Accountants (AICPA). She has also earned the AICPA Certificate of Achievement in business valuation. Additionally, Melissa carries the credentials of Certified Valuation Analyst.

Her professional affiliations include the AICPA and the Pennsylvania Institute of Certified Public Accountants (PICPA), as well as the Estate Planning Council of Pittsburgh. She is also a member and serves on the Executive Advisory Board of the National Association of Certified Valuators and Analysts (NACVA).

Melissa has authored articles appearing in professional publications and has written business valuation courserelated materials for NACVA and the AICPA. She serves as a national instructor for NACVA.

Melissa is a graduate of Leadership Pittsburgh, Inc.'s Leadership Development Initiative. She serves on the Board of Directors of the Children's Museum of Pittsburgh and is a member of the Executive Leadership Team for the American Heart Association's "Go Red for Women" initiative. Melissa is a mentor for women business owners in Chatham University's MyBoard program and serves on Robert Morris University's Professional Advisory Council.

Melissa resides in the South Hills of Pittsburgh with her husband and their two sons.

# GYF CLE Course Offerings

#### The following courses have been presented by our professionals:

The Business Valuation Process	(February 26, 2009)
Understanding Standards of Value and Levels of Value	(June 11, 2008)
The Income Approach to Business Valuation	(June 4, 2009)
The Market Approach to Business Valuation	(October 7, 2009)
The Cost/Asset Approach to Business Valuation	(February 4, 2010)
Quantification and Application of Valuation Discounts	(October 1, 2008)
S Corporations vs. C Corporations: Understanding Valuation Differences	(March 6, 2008)
Special Purpose Valuations: ESOPs & Buy-Sell Agreements	(June 3, 2010)
Special Purpose Valuations: Estate & Gift Tax Planning	(October 7, 2010)
Economic Damages: Lost Profits Determinations	(February 10, 2011)
An Attorney's Guide to Financial Statements	(June 15, 2011)
Marcellus Shale: Income Tax & Valuation Issues Related to Landowners	(October 11, 2011)
Family Limited Partnerships: The Realities of Estate Planning with FLPs	(February 8, 2012)
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Analyzing Financial Statements and Their Impact on Value	(May 29, 2014)
Exit Planning: Considerations and Steps for Exiting a Business	(October 2, 2014)

#### Handouts and slides from these presentations can be downloaded at www.gyf.com



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*Note:* Substantial portions of these materials were extrapolated from <u>Financial Valuation: Applications</u> <u>and Models</u>, Second Edition, Wiley Finance, edited by James R. Hitchner. Robert J. Grossman is a contributing author to this treatise and the materials utilized herein.

The opinions, expressed or implied, contained in this presentation material do not necessarily represent the views of the authors of this material and are the sole product of the experts whose views are contained herein. The reader of this material is responsible for his or her own use and due diligence in the application or interpretation of the material presented.

### Chapter I – Introduction

Before a user of a business valuation can properly interpret the findings therein, it is important to understand the fundamental principles of investment. An investor who makes a decision to enter any investment does so with the basic intent of recovering his or her initial capital, at some future point, as well as some compensatory remuneration for forgoing the current use of those invested funds.

From this fundamental investment principle comes the basic business valuation concept that "all value is forwardlooking." In other words, no investor is willing to pay more today for any asset than the current value of all future economic benefits expected to be generated by virtue of holding that asset. How that asset has performed in the past is irrelevant, except to the extent that historical performance can serve as a proxy for the future.

Future economic returns are generally encompassed in two broad categories. The first is income distributions provided to the holder of the investment during the holding period. This category of return on investment is most often attributable to income-producing assets, such as equity and debt (bond) investments. The second category of future economic return is capital, or asset, appreciation. This category of future economic return cannot be realized until the asset is converted to cash in some future sale transaction. While this category of future economic return is attributable to income-producing assets, it is also relevant to investment decisions associated with the non-income-producing assets, such as collectibles and unimproved real estate.

In the valuation of privately-held businesses, and fractional interests therein, consideration of both categories of returns is necessary to determine value. The holding period return is provided through dividends, S corporation and/ or partnership distributions. The appreciation, or growth, in value of the subject interest will be realized through net "after-tax" sales proceeds received at a future transaction date.

Both returns are incorporated in the income approach by virtue of future projected economic benefits. These benefits can be defined in a number of ways, including "pre-tax" income, "after-tax" income, or net cash flow. As will be discussed later in these materials, net cash flow is the measure most often used by the business valuation community.

To determine a current value of those future economic benefits, it is necessary to apply financial "present value" calculations to the expected future returns. The present value factors are based on rates of return (interest rates) that are developed specifically for the company interest or asset under valuation. These rates are directly related to the perceived risks of the investment.

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### The Income Approach to Business Valuation

The income approach more closely aligns with the forward-looking aspect of business valuation than the market approach or the cost approach. Moreover, the use of the income approach directly involves specific operating criteria of the subject entity or ownership interest under valuation. Finally, the overall mechanical nature of the income approach makes it easy to understand for users.

Today's program is intended to familiarize attendees with the income approach, both theoretically and mechanically. We will address some general issues related to a valuation calculated under this approach and how to identify assumptions and errors in valuation reports. The course is structured as follows:

- Chapter I Introduction
- Chapter II Basics of the Income Approach
- Chapter III Normalization and Determination of Future Expected Cash Flows
- Chapter IV Cost of Capital
- Chapter V Application of Income Approach Methods
- Chapter VI Common Misuses and Mistakes
- Chapter VII Conclusion and Practical Considerations

As with all two-hour continuing legal education programs, it is not expected that you will leave today as an expert in all aspects of the concepts discussed in these materials. Rather, we do hope that the information conveyed will better prepare you to address these complex matters and guide you on how best to proceed in advising your clients to their best interests.

Thank you for attending today. We do appreciate that all of you are exceedingly busy, and to have you spend part of your day with us is an honor and privilege for Grossman Yanak & Ford LLP. Should you have further general questions, comments or observations, please feel free to contact us directly.

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### Chapter II – Basics of the Income Approach

The income approach is probably the most widely-recognized and often-used approach to determining the value of a privately-held business interest. The primary reason for this recognition and use by both business valuators and users of business valuations is the close alignment of the methods under the approach to the basic percept that all value is forward-looking. While all of the approaches contemplate a forward-looking premise, neither the market approach nor the cost/asset approach do so in a more direct fashion than the income approach.

What does forward-looking mean? If one presupposes valuation of an asset on Day 1, that value is predicated upon the investor's expectation of economic returns after Day 1. The income approach and this underlying and foundational expectation is based on the broad economic principle of "anticipation."

Assume that an investor buys a single share of Microsoft stock. Historical returns and how the stock performed through the date of purchase is of no consequence to the purchaser, except to the extent that the historical performance may be reflective of future returns. Such emphasis on future expectations of the stock's performance, then, is the basis on which the proper value is set for purchase and sale transactions.

The example is no less relevant for privately-held businesses and fractional equity ownership interests within those businesses. In these types of valuations, the forward-looking premise is captured in future expected economic benefit streams (usually, cash flows), as discussed later in these materials.

In essence, the operational and mechanical aspect of the income approach can be reduced to a simple mathematical fraction consisting of a numerator and a denominator. The numerator represents the future economic benefits that the holder of the investment is expected to incur, and the denominator represents a quantification of the associated risk and uncertainty of those future economic benefits.

In its very simplest form, where future economic benefits are estimated to be \$1,000 and the associated risk rate is estimated at 20%, value (V) can be expressed as follows:

$$V = \frac{\$1,000}{.20} = \frac{\$5,000}{.20}$$

As noted earlier, in valuing privately-held business interests, we generally think of the "future payments" or "future economic benefits" as "expected future cash flows." The primary reason behind the use of cash flow as the indicator of future economic performance is that the most commonly utilized sources of empirical data used to estimate risk rates or cost of capital (as discussed in Chapter IV of these materials) are based on cash flows after entity-level taxes.

Thus, using future expected cash flow as the numerator in the mathematical fraction ensures that the calculation properly matches the two variables.

Note that is possible to use net income (before or after tax) or even operating income as the numerator, though this is not as common as it once was in the business valuation discipline. The critical aspect of using a numerator defined by some proxy other than cash flow requires modification to the cost of capital determination. It is important to note that regardless of whether one uses cash flow or some other measure of expected future performance as the numerator in the fraction, proper matching of that numerator with the appropriate cost of capital should produce the same result, if correctly applied.

The second element in the fraction is the denominator. In the business valuation context, the denominator represents the rate of return required for the particular investment (privately-held equity or debt interest) represented by the cash flow in the numerator. In effect, the denominator reflects "opportunity cost" or the "cost of capital." In other words, this rate of return is the amount of return necessary to induce investors to put their funds in the investment represented by the cash flows in the numerator as opposed to some alternative investment vehicle.

The rate of return incorporates certain investor expectations relating to the future economic benefit stream associated with the investment. Discussed in greater detail in Chapter IV of these materials, these expectations include:

- *The "real" rate of return* the amount of return that investors expect for forgoing current consumption or letting someone else use their money on a risk-less basis
- *Expected inflation* the expected depreciation in purchasing power during the period when money is tied up
- *Risk* the uncertainty as to when, and how much, cash flow or other economic income will be received

The first item is essentially rent. Any investor electing to "lend" another party use of his or her funds would expect a rental fee or payment. The second is necessary compensation to adjust for a loss of purchasing power associated with deferring use of the invested funds. The final item captures investor expectations about the risks inherent in the specific investment or equity instrument.

Determination of value under the income approach can be accomplished through the proper application of three primary methodologies:

- 1. Capitalized cash flow (CCF) method,
- 2. Discounted cash flow (DCF) method, and
- 3. Excess cash flow (ECF) method.

Each method requires the determination of a "future benefit stream" – a numerator – and a rate of return (risk) – a denominator. The CCF method utilizes just one numerator and denominator, whereas the DCF method utilizes a series of fractions. The ECF method is really a hybrid method, combining elements of both the asset and the income approaches.

The basic concepts discussed within this chapter will be expanded upon throughout the remainder of this program. However, understanding the foundational aspects of the income approach is critically important to not just understanding the methods employed in the valuation report, but also interpreting the conclusions set forth thereunder.

### Chapter III – Normalization and Determination of Future Expected Cash Flows

Each method under the income approach depends on the present value of an enterprise's future cash flows, often based on historical financial data. Preferably, the financial data is in compliance with generally accepted accounting principles (GAAP). Valuation analysts, including CPA-analysts, are not responsible for attesting or verifying financial information or certifying GAAP statements when providing valuations. Often, they are given non-GAAP financial information as a starting point to derive income or cash flow; this information is often acceptable. However, analysts still should do their best to make appropriate adjustments to income statements and/or balance sheets within the scope of their engagement. The development of these adjustments is referred to as the normalization process.

As the value determinations under the income approach equal the present value of the investment's future economic benefits, it is critically important to properly determine future cash flows.

Note that the future cash flows should be projected on an economically "normal" basis and not necessarily GAAPor tax-basis accounting. The emphasis in this normalization process is to present future expected cash flow on the basis that a potential investor/buyer could expect to receive as a return on his or her investment. For that reason, most commentators refer to these economic benefits as "free cash flow."

Free cash flow is the amount of cash flow that could be withdrawn from the enterprise each year without disrupting normal operations. That is to say, cash flow after all normal operating expenses, capital acquisitions, debt service and working capital needs have been satisfied to meet the business's operational needs.

#### Common Normalization Adjustments

As noted, the normalization process involves the restatement of the historical financial statements to "value" financial statements, i.e., statements that can be used in the valuation process. Normalization generally involves five categories of adjustments:

- For ownership characteristics (control versus minority);
- For GAAP departures, extraordinary, nonrecurring and/or unusual items;
- For nonoperating assets and liabilities and related income and expenses;
- For taxes; and
- For synergies from mergers and acquisitions, if applicable.

Generally, the second, third and fourth categories of normalization adjustments are made in all valuations, whether the ownership interest being valued is a minority or a control interest. The first category of normalization adjustments is not always necessary if the ownership interest being valued is a minority interest. The fifth category is most often used to derive investment value.

#### Adjustments for Ownership Characteristics

Controlling interest holders are able to extract personal financial benefits beyond fair market amounts in a number of ways. For instance, in a privately-held enterprise, it is not unusual for the controlling shareholder to take compensation in excess of going market rates that might be paid for the same services. Since the "willing buyer" of a control ownership interest could reduce compensation to market levels, often it is appropriate to add excess compensation to cash flow to reflect the additional economic benefits that would be available to the "willing buyer."

*Note:* By choosing to make certain adjustments to the future economic benefit (i.e., the numerator), the analyst can develop a control or noncontrol value.

#### Other examples of common control adjustments include:

- Excess fringe benefits, including healthcare and retirement;
- Excess employee perquisites;
- Excess rental payments to shareholders;
- Excess intercompany fees and payments to a commonly-controlled "sister" company;
- Payroll-related taxes;
- Reimbursed expenses;
- Nonbusiness travel and entertainment of shareholders and/or key individuals;
- Related-party transactions (e.g., leases between shareholder and entity);
- Sales/purchases to/from related entities;
- Capital structure; and
- Excess or insufficient interest on loans to/from shareholders.

*Note:* Normalization adjustments affect the pre-tax income of the entity being valued. Consequently, the control adjustments will result in a corresponding modification in the income tax of the entity, if applicable.

The content of the numerator drives the type of value (control or minority) produced. As such, if the numerator includes adjustments related to control, the value conclusions will be a control value. By excluding adjustments related to control, the value conclusion is a minority value. If control adjustments are included in the normalization, and the resulting value is a control value, a minority interest discount may be used to adjust from control to minority value.

There are often situations in which no control adjustments are necessary, and the company's control owners run the company to the benefit of all the owners. In this situation, the value would be the same for minority and control. However, some analysts still apply a minority discount to reflect the risk of a potential change in the control owner or his or her management philosophy.

EXAMPLE: CONTROL VS. MINORITY				
Assume an entity with \$700 in cash flow is paying \$300 in excess compensation to the control shareholder.				
	<u>Control</u>	<u>Minority</u>		
Cash Flow	\$ 1,000	\$ 700		
Rate	20%	20%		
Value	\$ 5,000	\$ 3,500		
Difference	\$ 1,500	Minority Discount		
Percentage Discount	30%			

*Note:* When there are controlling interest influences in the benefit stream or operations of the entity, and a minority interest is being valued, it may be preferable to provide a minority value directly by not making adjustments. Doing this will eliminate the problems related to determining and defending the application of a more general level of minority discount.

The debate as to whether to make these control adjustments in a minority valuation is ongoing. Some analysts prefer to make adjustments, then apply a minority discount. They argue that by not making these adjustments, one could:

- Understate value,
- Overstate the minority discount, or
- Possibly "double count" the minority discount.

Those who believe that one should not make control adjustments (that is, leave cash flows on a minority basis) assert:

- Minority interests have no say in compensation and perquisites to controlling shareholders, and cash flows must reflect this fact.
- The amount of these adjustments may be difficult to justify or verify.
- Almost all of the difference in control versus minority value in the income approach is found in the numerator (expected income) rather than in the denominator (discount or capitalization rate).

#### Adjustments for GAAP Departures, as well as Extraordinary, Nonrecurring and/or Unusual Items

In analyzing historical financial statements, it is important to "smooth" the financial data by removing all items that would not be indicative of future operating performance. The goal is to present a normal operating picture to project earnings into the future. Because conclusions of value are based on future return expectations, and because most analysts use historical financial information as the starting point for estimating future returns, it would be appropriate to consider the following adjustments:

- Departures from GAAP,
- Extraordinary items,
- Nonrecurring items, and
- Unusual items.

Note that, depending on the situation, statements prepared on a "tax basis" or "cash basis" may have to be adjusted to be closer to GAAP and/or normalized cash flow.

One-time advertising expenditures or unusually high equipment repairs in a single year are just two simple examples of the types of items that might be considered nonrecurring or not part of a normal operating cycle. Other examples include the effects of catastrophic events (such as a plant fire, hurricane damage, labor strikes) and/or insurance premium collections due to such events as the death of a key executive.

Other adjustment items also can be found in historical balance sheet and cash flow accounts. For example, if a company purchased a level of fixed assets far beyond its historical norm and funded the purchases from cash flow from operations, it may be necessary to "smooth" the depreciation and corresponding cash flow to reflect a more normal pattern.

*Note:* As with the control-oriented adjustments, extraordinary, nonrecurring or unusual item adjustments affect the profit or loss accounts of a company on a pre-tax basis. Thus, certain income tax-related adjustments may be necessary.

#### Adjustments for Nonoperating Assets and Liabilities and Related Income and Expenses

The application of most commonly-accepted income approach methodologies results in a valuation of the company's operating assets, both tangible and intangible. Therefore, it is often necessary to remove all nonoperating items from the company's balance sheet and income statement. After the value of the operating assets has been determined, the net nonoperating assets generally are added back at their respective values as of the valuation date.

Examples of nonoperating assets and liabilities include airplanes, unsold plant facilities that have been replaced, significant investments in unrelated companies, equity investments, excess cash or working capital and loans to support any of these. The interest, dividends and rental income, as well as any related expenses (loan interest, depreciation and other carrying costs) associated with these nonoperating assets, must be removed from the operating benefit stream. Once again, these types of adjustments will alter the pre-tax operating income.

Methodologies for the valuation of nonoperating assets and liabilities will vary depending on the nature of the asset or liability. Usually more significant fixed assets, such as an airplane or building, are separately appraised. Investments in privately-held enterprises may require separate entity valuations. In many cases, the nonoperating assets will have appreciated since acquisition and may require a consideration of the potential tax implications of any gain associated with this appreciation. If nonoperating assets exist and are to be added to the operating assets, they must be adjusted to their respective fair market values, including an adjustment for discounts (if applicable).

When valuing a minority interest, some experts do not add back nonoperating assets since minority shareholders have little or no control over the assets. However, this often results in a very large implied discount on the nonoperating assets, particularly those with low income or high expenses.

Note that specialists in the valuation of particular nonoperating assets may need to be hired. Engagement letters should clearly set out these responsibilities and the related appraisal expenses.

#### Adjustment for Taxes

The question of whether to tax-affect or not tax-affect income in pass-through entities is a highly debated issue in business valuation. However, the selection of tax rates can also be an issue.

Income tax expenditures represent a very real use of cash flow and must be considered carefully. If both federal and state taxes are to be reflected, they should be based on the future income that was determined in the valuation process, including the appropriate tax rate(s) to use. Determining the tax on future income can incorporate the actual tax rate, average tax rate or highest marginal tax rate.

<u>EX</u>	AMPLE: TAXES ANI	D VALUE	
	<u>Actual Tax Liability</u>	Average <u>Tax Rate (35%)</u>	Highest Marginal <u>Rate (39%)</u>
Pre-tax income	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000
Tax on the taxable income	222,500	350,000	390,000
After-tax cash flows	777,500	650,000	610,000
Capitalized value at 20%	\$ 3,887,500	\$ 3,250,000	\$ 3,050,000

The lowest value, which uses the highest marginal rate, is almost 22% below the highest value, which uses the actual tax liability – this is a significant difference. Taxes can vary from year to year for a variety of reasons. As such, undue reliance on one year may lead to a faulty valuation.

The tax issue becomes even more controversial when the entities involved are pass-through entities, such as S corporations and partnerships. Since these entities have little or no federal and state tax liability, applying after-tax discount and capitalization ("cap") rates to pre-tax income would result in a higher value for the pass-through entity, all other things being equal.

EXAMPLE: APPLYING AFTER-TAX CAP RATE TO PRE-TAX CASH FLOW		
Pass-Through Entity	<u>"C" Corporation</u>	
\$ 1,000,000	\$ 1,000,000	
0	\$ 350,000	
\$ 1,000,000	\$ 650,000	
\$ 5,000,000	\$ 3,250,000	
	TAX CAP RATE TO PRE-1         Pass-Through Entity         \$ 1,000,000         0         \$ 1,000,000         \$ 5,000,000	

#### Adjustments for Synergies from Mergers and Acquisitions

Synergistic adjustments may be needed in mergers and acquisitions engagements. These adjustments will vary in complexity. For example, synergy adjustments could be as simple as adjusting for savings in "office rent" due to the consolidation of office facilities. Synergy adjustments also can include the results of in-depth analyses of increased sales, decreased production costs, decreased sales and marketing costs and other improvements due to anticipated economies of scale. Note that synergistic value is investment value, which may not be fair market value.

#### Determination of Future Benefits Stream (Cash Flows)

Under the CCF method, a single measure of the "expected" annual future economic benefit is used as a proxy for all future benefits. Under the DCF method, discrete "expected" future economic benefits are projected for a specified number of years in the future and, then, a single measure of economic benefit is selected for use into perpetuity after the specified period, which is referred to as the terminal value.

Both the cap rate and discount rate are intended to encompass investor expectations regarding the risk of receiving future economic benefits in the amounts and at the times assumed in the models. Given the forward-looking nature of these methodologies, the valuation analyst will want to properly assess the potential future economic benefits to produce a valuation conclusion that is accurate and supportable.

#### Defining the Benefit Stream

Both single-period benefit streams (CCF) and multi-period benefit streams (DCF) can be defined in a variety of ways, depending on which definition is most appropriate in a given circumstance. The most common definitions of future economic benefits are net income and net cash flow. Note that, in many small companies, income and cash flow are the same or similar.

- <u>Net Income</u> Net income is the measure of an entity's operating performance and, typically, is defined as revenue from operations less direct and indirect operating expenses. Its usefulness as a measure of economic benefit for valuation purposes lies in its familiarity through financial statements. It can be either pre- or after-tax. The problem with using net income as the economic benefit is that it is more difficult to develop discount and cap rates relative to net income; cash flow rates of return are more readily available using traditional cost of capital techniques.
- <u>Net Cash Flow</u> In recent years, net cash flow has become the most often-used measure of future economic benefit because it generally represents the cash that can be distributed to equity owners without

threatening or interfering with future operations. Net cash flow is akin to dividend-paying capacity, and as such, it can be seen as a direct proxy for return on investment. Finally, it is the measure on which most commonly-accepted empirical data on rates of return are based.

#### Defining Net Cash Flow

Net cash flow is defined differently depending on the method of the income approach selected. As stated earlier, the characteristics of the beneficiary or recipient of the expected cash flows are critical to analysts. Over the years, finance and business valuation analysts alike have segregated cash flows into two groups: (1) cash flows to the equity shareholders and (2) cash flows to invested capital, which represents cash flows to equity shareholders and holders of interest-bearing debt. We refer to these two groups, respectively, as the direct equity method and the invested capital method. Whether using a DCF or a CCF, the analyst can elect to rely on the direct equity method or the invested capital method. The next sections present the components of net cash flow.

Note that cash flows for financial statement purposes are generally not used in business valuations. Because cash flows are normalized to estimate cash flows into perpetuity, specific changes in current assets and liabilities, specific purchases and specific borrowings and repayments are ignored.

#### Cash Flow Direct to Equity (Direct Equity Method)

Net income after tax Plus: Depreciation, amortization and other noncash changes Less: Incremental working capital needs Less: Incremental capital expenditure needs Plus: New debt principal Less: Repayment of debt principal Equals: Net cash flow direct to equity

The cash flows here are "direct to equity" because debt has been serviced by the inclusion of interest expense and debt repayment, and what is left is available to equity owners only. This is a debt-inclusive model. The direct equity method requires that an appropriate discount rate to cash flows to equity be applied to those cash flows. No other discount rate is applicable.

Cash Flow to Invested Capital (Invested Capital Method)

Net income after tax *Plus:* Interest expense (tax-affected) *Plus:* Depreciation, amortization and other noncash changes *Less:* Incremental "debt-free" working capital needs *Less:* Incremental capital expenditure needs *Equals:* Net cash flow to invested capital

The cash flows here are those available to service invested capital, i.e., equity and interest-bearing debt. The cash flows exclude interest expense and debt principal payment. It is a debt-free model in the sense that all interests and related debt capital is removed. The value determined by this method is invested capital, which is typically interest-bearing debt, capital leases and equity. To derive equity value using this method, the analyst subtracts the actual debt of the subject company.

The invested capital method requires that an appropriate discount rate to cash flows to invested capital be applied to those cash flows. No other discount rate is applicable.

#### Analyses for Application of the Income Approach

Note that there are only four types of analyses for application of the income approach. The graphic below illustrates these types of analyses.

	Direct Equity	Invested Capital
CCF	1	2
DCF	3	4

Note that, in some circumstances, the past is not indicative of the future. Analysts must exercise care in analyzing projected performance in these situations. Adequate support must exist for the assumptions upon which the projections are based.

If the value measure selected is net cash flow, it is necessary to establish projections of working capital needs, capital expenditures, depreciation and, if using a direct equity method, borrowings and repayments of debt. Each item may restrict or provide free cash flow, affecting the return on equity.

A question sometimes arises as to why analysts may need future balance sheets and statements of cash flow when using a DCF model. The interactive nature of the balance sheet, income statement and statement of cash flows operates to ensure that all aspects of future cash flow have been addressed and that assumptions utilized in the projection of the income statement work properly through the balance sheet. This is not always necessary or available.

Note that the valuation analyst uses normalized historical data, management insights and trend analysis to analyze formal projections for the explicit period. These projections take into account balance sheet and income statement items that affect the defined benefit stream and involve not only projected income statements, but also may include projected balance sheets and statements of cash flow.

The cash flows utilized under the income approach will either be a single proxy for future expectations, if the CCF method is being used, or a series of cash flows, if the DCF method is selected as the appropriate model.

### Chapter IV – Cost of Capital

The income approach and the methods utilized thereunder incorporate two critical elements into the valuation function:

- The economic benefit stream (typically cash flow); and
- The risk involved in reviewing the economic benefits in the proper amounts and timeframes anticipated (i.e., the discount rate).

An important third element critical to the determination of value under the income approach is the expected growth potential of the company being valued, both in the short and long term.

The value of any enterprise will vary directly with its expected level of economic benefits and the expected growth of such benefits. The value will vary inversely with the riskiness of the anticipated economic benefit stream because the increase in risk demands a higher rate of return. Often, a business enterprise, particularly in the small and midsize markets, is focused on the benefit stream and growth potential variables, while too often the risk is left to chance. Assuming no change in the first two variables, reducing the risk attributes of a business will increase its value.

#### Characteristics of the Cost of Capital<sup>1</sup>

The cost of capital for an enterprise represents the economic cost of attracting and retaining capital in a competitive environment in which investors carefully analyze and compare all investment opportunities. Some basic concepts follow:

- The cost of capital is the *expected rate of return* that the market requires to attract funds to a particular investment. It is based on investor expectations. Actual past returns are relevant to an estimate of the cost of capital <u>only</u> to the extent that they are believed to be representative of future expectations.
- The cost of capital depends on the investment, not the investor that is, *it depends on the riskiness of the investment* rather than the risk characteristics of the investor.
- In economic terms, the cost of capital is an *opportunity cost* that is, the cost of forgoing the next best alternative investment (equivalent risk at a higher expected return or lowered risk at the same expected return.)

<sup>1</sup> Cost of Capital: Estimation and Applications, Fifth Edition, Shannon P. Pratt

- The cost of capital concept is based on the *principle of substitution* an investor will not invest in a particular asset if there is a more attractive substitute.
- The cost of capital is *market driven* it is the competitive rate of return available in the market on a comparable investment (i.e., an investment with equivalent riskiness).
- The most important component of comparability is *risk*, which is the degree of certainty (or lack of it) that the investor will realize the expected returns at the times specified. Since risk cannot always be observed directly, analysts have developed several ways to estimate it using available market data (generally based on some past period of time).
- Each component of a company's capital structure (e.g., debt and equity) has a cost of capital.

#### Investor Expectations as Quantified by the Cost of Capital<sup>2</sup>

Three basic components of investor expectations are captured in the cost of capital:

- <u>The "real" rate of return</u> the amount that investors expect to obtain in exchange for letting someone else use their money on a risk-less basis.
- *Expected inflation* the expected depreciation in purchasing power while the money is tied up.
- <u>*Risk*</u> the uncertainty about when, and how much, cash flow or other economic benefit will be received.

The combination of the first two expectations is sometimes referred to as the "time value of money." This can vary for different investors, although the market tends to form a consensus regarding a particular investment or category of investments. That consensus forms the cost of capital for investments of varying levels of risk.

#### Cost of Capital Equals Discount Rate

The cost of capital is also referred to as the discount rate. It equals the total expected rate of return for the investment – that is, dividends or withdrawals, plus expected capital appreciation over the life of the investment. This rate, when applied to the appropriate income or cash flow stream of a company, will give an estimate of the company's value.

#### Cost-of-Capital Methods

Several methods are available to calculate the cost of capital or discount/capitalization rate for a specific investment. Some of the more common methods include:

- Buildup method (BUM),
- Capital asset pricing model (CAPM) method,
- Modified capital asset pricing model (MCAPM) method,
- Weighted average cost of capital (WACC) method, and
- Price/earnings method.

Most often, practitioners preparing business valuations for privately-held entities use the BUM, the MCAPM or the WACC. The WACC is really not a method for determining an equity rate, but rather, an overall invested capital rate encompassing both debt and equity capital. Due to the constraints of this program, only the BUM and WACC will be covered. The other methods may be discussed at your convenience with the presenters.

#### Value Equals Future Performance

As noted throughout these materials, the value of an interest in a closely-held business typically is considered to be the present value of the future economic benefit stream – typically, cash flow. This economic benefit is discounted at an appropriate discount rate to reflect the risks associated with the certainty of receiving such future economic benefits.

No one buys a business or other property simply because of what it has accomplished in the past or even what it consists of at present. Although these may be important considerations in determining what the business or other property is likely to do in the future, it is the anticipated future performance of a business that gives it economic value. It is important to remember that values are reflections of the future, not the past nor even the present.

#### Discount Rate, Capitalization Rate and Anticipated Growth

A discount rate is used to calculate the present value of future projections of a benefit stream when growth will vary from year to year. The projections reflect the growth of the business over a discrete period of time. However, if growth is estimated to remain level throughout the future life of the investment, a capitalization rate is often used. The relationship between a discount and a capitalization rate can be summarized as:

The application of the DCF method with constant growth will result in the same value as the CCF method.

One of the critical areas in which analysts are required to exercise their professional judgment is the assessment of future growth prospects for the subject entity. Over the past several decades, the public markets have witnessed many companies that have experienced high short-term growth rates.

For example, in December 1998, analysts announced that the projected growth rates for CISCO Systems, Inc. would taper from 55% in 1998 to 25-30% for the next five years.<sup>3</sup> Very few companies, if any, can sustain such high growth rates forever. This creates a need for longer-term growth assumptions. However, usually no long-term growth rates are forecasted. Since most companies are valued into perpetuity, short-term growth rates are helpful but incomplete.

The meteoric rise and fall of short-term growth rates for whole market sectors have created problematic valuation data and circumstances. There is often a need to identify companies capable of "sustainable growth," that is, a level of continued growth that the enterprise can reasonably be expected to sustain over the long term.

Valuation analysts regularly value entities whose growth is either highly erratic or currently advancing at a much higher rate than can be sustained into perpetuity. In both instances, it is likely that analysts will select a discount rate by which to value such "abnormal" benefit streams during a limited future period and, then, use a terminal year capitalization rate to value the perpetual benefit stream once true sustainable growth can be achieved. This can be achieved by using the DCF method of the income approach. The challenge is to determine the appropriate adjustment for long-term sustainable growth and to convert the discount rate used during the abnormal period to a capitalization rate to be used into perpetuity once the economic benefit stream has stabilized.

Note that using a higher short-term growth rate in place of long-term sustainable growth rates can often lead to substantial overstatement of value.

Since 1926, the U.S. economy has been able to sustain a nominal growth rate of approximately 6.0% to 6.3% over time.<sup>4</sup> This is a combination of the real growth rate and inflation of 3.0%.<sup>5</sup> Some analysts believe that, in a capitalistic society, it is reasonable to assume that any business entity's growth, regardless of short-term prospects, will eventually plateau at the 6% to 6.5% long-term level of growth for the economy. This change in average economic growth is due to competition, which initially is attracted to higher-growth industries, putting pressure on profit margins and growth.

A thorough evaluation of the subject company's historical growth can be utilized to assist in this growth determination. Published estimates of industry growth rates, such as those compiled by Duff & Phelps, can also be relevant

<sup>&</sup>lt;sup>3</sup> "Cisco Bear's Den," *The Motley Fool*, Paul Larson

<sup>&</sup>lt;sup>4</sup> Bureau of Economic Analysis

<sup>&</sup>lt;sup>5</sup> 2014 Valuation Handbook, Published by Morningstar, Inc.

analytical tools. Many analysts use a long-term sustainable growth rate between 3% and 6 to 6.5%, depending on the underlying characteristics of the subject entity, its industry and its future prospects. Some analysts use the anticipated inflation rate, which has historically averaged approximately 3%. However, this rate assumes no real growth in the underlying business.

#### Relationship Between Risk and the Cost of Capital

Financial economics divides risk into three major categories: maturity, systematic, and unsystematic. Maturity risk is the reflection of changes in interest rates over the term of the investment. Systematic risk is the uncertainty of future returns owing to the sensitivity of the return on the subject investment to movements in the returns for a composite measure of marketable investment. Unsystematic risk is a function of the characteristics of the industry, the individual company and the type of investment interest.<sup>6</sup>

#### Maturity Risk

Maturity risk (also called horizon risk or interest rate risk) is the risk that the value of the investment may increase or decrease because of changes in the general level of interest rates. The longer the term of an investment, the greater the maturity risk. For example, market prices of long-term bonds fluctuate much more in response to changes in levels of interest rates than do short-term bonds or notes. When we refer to yields of U.S. government bonds as risk-less rates, we regard them as free from the prospect of default, but recognize that they do incorporate maturity risk: the longer the maturity, the greater the susceptibility to change in market price in response to changes in market rates of interest.

#### Systematic Risk

Systematic risk can be defined as the uncertainty of future returns due to uncontrollable movements in the market as a whole. This type of risk generally arises from external, macroeconomic factors that affect all economic assets within the economy as a whole. Diversifiable risk, on the other hand, is based on firm-specific factors.

#### Unsystematic Risk

Unsystematic risk is the uncertainty of future returns as a function of something other than movements in market rates of return, such as the characteristics of an industry, enterprise or type of investment. Examples of circumstances that can create or increase unsystematic risk include high product or technological obsolescence, unforeseen loss of management expertise and negative changes in labor relations.

<sup>&</sup>lt;sup>6</sup> Cost of Capital: Estimation and Applications, Fifth Edition, Shannon P. Pratt

Classical financial theory assumes that rational investors will eliminate their exposure to unsystematic risk through maintaining fully-diversified portfolios. However, this assumption is based on the existence of other interlocking assumptions, the absence of which, in a privately-held company setting, requires the valuation analyst to identify and quantify unsystematic risk as a part of an overall rate of return. Some of these assumptions include: investors have access to perfect information for decision-making purposes; there are no taxes to be considered; and the decision-maker is fully rational.

Unsystematic risk has four primary sources:

- <u>Size</u> the smaller the company, the greater the risk.
- <u>Macroenvironment</u> six forces (economic, technological, sociocultural, demographic, international and political) that companies must monitor to minimize the negative effect of sudden macroenvironmental changes the ability of companies to influence these forces is minimal.
- <u>Industry</u> five forces (threat of new entrants, bargaining power of suppliers, bargaining power of customers, threat of substitutes and rivalry), which can be influenced by company actions.
- <u>Specific-Company Attributes</u> companies must monitor change and adapt accordingly.

#### Buildup Model

The BUM is the most common methodology employed by valuation practitioners to estimate the future cost of equity capital for a privately-held business. In its most basic form, the method can be expressed in the following formula:

$$K_e = R_f + R_{pm} + R_{ps} + R_{pu}$$

<u>*Where:*</u>  $K_e = Discount rate applicable to future cash flow$ 

$$\begin{split} R_{f} &= Risk-less \ rate \ (Treasury Bond \ rates) \quad R_{pm} &= Equity \ risk \ premium \ (market \ over \ risk-less \ rate) \\ R_{ps} &= Risk \ premium \ for \ size, \ and \qquad R_{pu} &= Specific-industry/company \ risk \end{split}$$

Of the four variables in the formula, only  $R_{pu}$  is the result of a subjective determination. The other three elements are developed through national economic data and well-accepted economic studies conducted by respected third-party sources.

#### Developing the Discount Rate

The rate used to discount the expected future cash flows to present value is the estimated rate of return currently available in the market on alternative investments with comparable risk. As illustrated above, the estimate of the discount rate (required rate of return) is derived from market evidence and is the sum of:

- A risk-free rate, and
- A premium for risk, which is the sum of the following:
  - An equity risk premium, which is the expected premium over the risk-free rate that investors expect to earn by investing in a broad index of the common stock market (such as the Standard & Poor's 500 stock composite average),
  - An additional premium for the additional risk associated with the small size of the company compared to the average size of comparable public companies in the marketplace, and
  - An additional premium for other risk factors specific to the company.

The risk-free rate is developed by starting with the 20-year U.S. Treasury Bond yield as of the date of valuation. A premium is then added to compensate for differences between average market returns in the stock market and investments in "safer" Treasury bonds. This premium is taken from the Center for Research in Security Prices (the CRSP) Deciles Size Premia Study, published annually in the Duff and Phelps (D&P) Valuation Handbook, using a supply-side model for estimating the equity risk premium.<sup>7</sup>

The supply of stock market returns is generated by the productivity of the corporations in the real economy. The model is based on four types of earnings, three of which are supplied by companies (inflation, income return and growth in real earnings per share), and a fourth based on investors' predictions of future growth in earnings as reflected by the price to earnings (P/E) ratio. The arithmetic average of the supply-side equity risk premium is 6.18%. This premium is added to the bond yield and produces an average market yield.

In the construction of a discount rate that properly compensates potential willing buyers for risks attendant to a specific equity interest, valuation analysts often add a risk premium for "size" for smaller companies. Risk premiums for size are broadly analyzed in the CRSP Deciles Size Premia Study, based on the market value of equity capital. Historical information (as published in the CRSP Deciles Size Premia Study) verifies that small companies have earned higher rates of return than larger companies over long-term periods. For purposes of the CRSP Deciles Size Premia Study, a small company is deemed to have a market capitalization between \$2.395 million and \$338.829 million. In its analysis, the CRSP Deciles Size Premia Study has determined that the additional small stock premium to be added to the average market rate of return is 5.99%.

<sup>&</sup>lt;sup>7</sup> 2014 Valuation Handbook, Published by Morningstar, Inc.

Finally, in determining the adjustment for other risk factors that should be provided for the subject company, specific factors that add additional risk to the potential investment were considered. Typically, company-specific risk factors range between 1% and 5%. However, each valuation study is fact-sensitive, and results can vary widely. The following example illustrates the computation of a discount rate under the BUM

EXAMPLE: CALCULATING DISCOUNT RATE USING THE BUILDUP MODEL				
Valuation date (June 30, 2014) long-term U.S. Treasury Bond Yield	3.08%			
+ Equity risk premium-stocks over bonds	6.18%			
Valuation date average company return	9.26%			
+ Risk adjustment for size in relation to comparative companies	5.99%			
+ Other risk factors specific to the company	4.00%			
= CASH FLOW DISCOUNT RATE – EQUITY	<u>19.25%</u>			

#### Weighted Average Cost of Capital

As its name implies, the WACC utilizes an approach that looks to a company's overall cost of capital. A company's total invested capital is comprised of debt capital (generally, with a fixed cost) and equity capital. The WACC computation essentially combines the cost of equity, as determined under the BUM (discussed previously), and the net "after-tax" cost of debt in proportions that are representative of future expected debt/equity structures.

The first step in determining the appropriate WACC is to develop a cash flow discount rate applicable to the risks associated with holding an equity capital position in the company. Second, the company's borrowing rate at the date of valuation must be identified. The rate will require tax-affecting adjustments. Finally, an appropriate debt/equity mix for the company should be considered. As a controlling interest holder would have the ability to modify the debt/equity structure, the weights assigned to each element of capital are market weights based on a normalized capital structure.

#### Determination of the Borrowing Rate

After determining the cost of equity capital under the BUM, the second step in the determination of the WACC is to determine the company's cost of borrowing. Assume that, as of the date of valuation, the prime rate was 3.25%. Further assume that the interest to be valued is a controlling interest, and as such, the purchaser would likely finance

the company at market rates. Therefore, the 3.25% interest rate is deemed appropriate in the determination of the WACC for a potential buyer of the company. The after-tax borrowing rate is determined as set forth below:

After-tax borrowing rate =  $k_d (1 - t)$ = 3.25% (1 - 35%)= 3.25% (65%)= 2.11% *Where:*  $k_d$  = Cost of debt t = Tax rate

#### Weighting the Components of Total Capital

The final step in the determination of the WACC is to apply the appropriate weights to the equity capital and the debt capital to produce a weighted average cost of capital. Since the initial determination of value will be on a controlling basis, the market weightings of debt and equity are applied to the WACC. A potential purchaser of a controlling interest would have the ability to modify the debt/equity structure.

The weights assigned to each element of capital are based on the industry standards. For illustration purposes, debt is assigned a market weighting of 51% and equity is weighted at 49%. The calculation of the WACC (assuming a controlling shareholder interest) is illustrated below.

$$\begin{aligned} \text{WACC} &= (K_{c} * W_{c}) + [(K_{dpt} (1-t)) * W_{d}] \\ &= (19.25\% * 49\%) + [(3.25\% * (1-35\%)) * 51\%] \\ &= 9.43\% + [(3.25\% * 65\%) * 51\%] \\ &= 9.43\% + (2.11\% * 51\%) \\ &= 9.43\% + 1.08\% \\ &= 10.51\% \end{aligned}$$

$$\begin{aligned} \text{Where:} \quad K_{c} &= \text{Cost of equity} \\ W_{c} &= \text{Weight of equity} \\ W_{c} &= \text{Weight of equity} \\ K_{dpt} &= \text{Pre-tax cost of debt} \\ t &= \text{Tax rate} \\ \text{Wd} &= \text{Weight of debt} \end{aligned}$$

It is very important to note that in those instances in which the valuator uses a WACC as opposed to a direct equity discount rate, the proper application of the income approach will produce a value of all invested capital, i.e., both debt and equity. To determine the value of equity under an invested capital model, care must be taken to reduce the value of invested capital by the value of debt. The net amount is the value of equity. Note that the same result for equity value is produced under either method.

#### Comparison to Market Multiples

Many transactions for the purchase and sale of a business are based on multiples of free cash flow; earnings before interest, taxes, depreciation and amortization (EBITDA); or earnings before interest and taxes (EBIT). Generally, EBITDA is most common. While EBITDA does not generally equate exactly to free cash flow, it has come to be used as an expediency in the merger and acquisition arena, primarily due to an inability to determine future free cash flow from public financial statements.

No exact models or studies are available to reconcile acquisition multiples to cost of capital determinations by the business valuation industry. However, so long as acquisition multiples are in a similar range as cost of capital determinations under the most commonly-accepted methods, users of business valuations can be comfortable that the results therein are appropriate.

### Chapter V – Application of Income Approach Methods

The income approach is simply a mathematical fraction, consisting of a numerator and a denominator, in which the numerator represents the "future economic benefits" expected from the investment and the denominator is the rate of return required (or yield) that an investor would have to forego by investing in the subject investment instead of investing in comparable alternatives.

#### As noted in Chapter II, there are three methods of the income approach:

- 1. Capitalized cash flow (CCF) method
- 2. Discounted cash flow (DCF) method
- 3. Excess cash flow (ECF) method

This chapter will provide an overview of these methods, as well as algebraic formulas (out of necessity) and simplistic quantitative examples of each method.

#### Capitalized Cash Flow (CCF) Method

The CCF method is an abbreviated version of the DCF method, in which both growth and the discount rate are assumed to remain constant into perpetuity. The steps utilized by the CCF method of calculating value under the income-based approach can be summarized as follows:

- Historical financial information is analyzed as of the date of valuation to assess the overall financial well-being of the company. In this process, "normalization" adjustments are applied to properly reflect the true economic performance of the entity being valued.
- Extraordinary, nonrecurring and nonoperating items of income and expense are removed so that the value of the business operations of the enterprise can be assessed at the measurement date.
- The benefit stream that will be considered in the final computation is selected.
- A period of review (generally, five years) is determined, and the selected benefit stream is constructed on a year-by-year basis.
- A weighting of each period's benefit stream is then considered in light of the likelihood of that year's economic benefit stream and projected long-term performance of the company recurring.
- The selected weighted economic benefit stream is chosen as a base for purposes of the value calculation.
- A discount rate is calculated and converted to a capitalization rate.

- The economic benefit stream is divided by the capitalization rate to produce the value of the operating enterprise.
- Nonoperating assets and liabilities are added to, or subtracted from, the value of the operating business to arrive at the overall value of the company before discounts and adjustments.

#### The CCF formula is as follows:

PV	T	=	$\frac{\text{NCF}_1}{\text{k}-\text{g}}$
Where:	PV	=	Present value
	NCF <sub>1</sub>	=	Expected economic income in the full period
			immediately following the effective valuation date
	k	=	Present-value discount rate
	g	=	Expected long-term growth rate in NCF

<b>EXAMPLE: CALCULATION USING THE CCF METHOD</b>			
Assumptions:		Capitalized Cash Flow Method:	
Discount rate (k)	24%	Year 0 cash flow	\$ 1,000
Long-term growth rate (g)	4%	One year growth factor	1.04
Year 0 cash flow	\$1,000	Year 1 cash flow	1,040
		Capitalization rate	.20
		Value Result	<u>\$ 5,200</u>

The expected economic income is typically in the form of cash flow. The cash flow benefit stream can either be available to all invested capital (both debt and equity holders) or equity capital, as discussed earlier in this material. The CCF method can be applied either on an end-of-year convention – meaning that economic benefits are received at year-end – or a midyear convention, which reflects economic benefits being received evenly throughout the year.

#### Discounted Cash Flow (DCF) Method

The DCF method is similar to the CCF method. While the model may appear more complicated, its fundamental precept – value is equal to the present value of an expected future economic benefit stream – is the same.

The DCF method is comprised of two components: a discrete period projection and an estimate of the cash flows beyond the discrete period projection (or a terminal period). The terminal value is extremely important, as it typically represents a substantial portion of the total value of an entity.

The DCF method is used when the recent history is not a proxy for the future of the subject entity. This method is practical to the extent that the projections used are reasonable to the decision-maker for whom the valuation is being prepared. The discrete projections should be prepared for a period until stabilization in the benefit stream is reached; at such point, a terminal value can be computed.

Since specific projections of future benefits beyond a foreseeable number of years generally are not meaningful, valuation analysts typically make some assumptions about normalized expected growth beyond the specific projected period and, from this information, develop the terminal value. The expected stream of future benefits includes the terminal value.

The steps utilized by the discounted cash flow method of calculating value under the income-based approach can be summarized as follows:

- The benefit stream that will be considered in the final computation is selected.
- A discrete period projection of the selected benefit stream is constructed on a year-by-year basis to a point of stabilization.
- The terminal value is determined by growing the adjusted terminal year base (making adjustments to the final year of the projection) by a stabilized growth rate this growth rate is the expected long-term rate into perpetuity.
- An appropriate discount rate is calculated to match the selected benefit stream (e.g., debt free cash flow).
- The discrete period economic benefit streams and the terminal year are discounted to present value.
- Nonoperating assets and liabilities are added to, or subtracted from, the value of the operating business to arrive at the overall value of the company before discounts and adjustments.

The DCF formula is as follows:

		n	
PV	=	Σ	$\mathbf{E}_{i}$
		i = 1	$(1 + k)^{i}$

Where:	PV	=	Present value
	Σ	=	Sum of
	n	=	The last period for which economic income is expected
	$\mathbf{E}_{i}$	=	Expected future economic income in the $i^{\rm th}$ period in the future
	k	=	Discount rate
	i	=	The period in the future over which the prospective economic
			income is expected to be received

The formula can be expanded as follows:

PV = 
$$\frac{E_1}{(1+k)^1}$$
 +  $\frac{E_2}{(1+k)^2}$  + ... +  $\frac{E_n}{(1+k)^n}$ 

<b>EXAMPLE: CALCULATION USING THE DCF METHOD</b>							
<u>Assumptions</u> : Discount rate (k) 24%	Long	-term growth rate (g)	4%	Year 0 cash flow	\$1,000		
Discounted Cash Flow Method:							
Projected year	1	2	3	4	5	Terminal yr*	
Cash flow (CF)	1,040	1,082	1,125	1,170	1,217	6,327	
Present value factor	.8065	.6504	.5245	.4230	.3411	.3411	
Discounted cash flow	839	704	590	495	415	2,158	
Value Result (rounded)	\$	5,200					
*Terminal Year: $CFn^{(1+g)/k-g} = $ \$ 6,327							

As the examples illustrate, using the CCF and the DCF, with the same set of assumptions, will produce identical valuation conclusions.

#### Excess Cash Flow (ECF) Method

The ECF method, or the "excess earnings method," is a blend of the asset and income approaches. The method was first introduced in the 1920s by the *Treasury Department, Appeals and Review Memorandum (ARM) No. 34* to estimate the intangible value of breweries and distilleries lost as a result of prohibition. The method was later updated in Revenue Ruling 68-609.

The method requires the valuation analyst to make a separate determination of the fair market value of the net tangible assets, as well as the intangible assets, of an entity. The overall cash flow of an entity is segregated into such amount attributable to tangible assets and to intangible assets.

The ECF method has become popular in valuing businesses in connection with marital dissolutions. The method has been useful in jurisdictions in which goodwill is considered a nonmarital asset and, therefore, must be bifurcated.

The steps utilized by the excess cash flow method of calculating value under the income-based approach can be summarized as follows:

- The fair market value of the entity's net tangible assets is determined. Independent real and personal property appraisals may be used in this step.
- A normalized economic benefit stream (typically, cash flow) is developed based on future expectations.
- An appropriate return for the net tangible assets is selected.
- The normalized cash flows attributed to the net tangible assets are calculated using the appropriate rate of return.
- The cash flows attributable to the net tangible assets are subtracted from the total normalized cash flows to determine the cash flows attributable to the intangible assets.
- An appropriate return for the intangible assets is selected.
- The fair market value of the intangible assets is calculated by capitalizing the cash flows attributable to the intangible assets by an appropriate capitalization rate, as determined in the prior step.
- The fair market value of the net tangible assets is added to the fair market value of the intangible assets.
- Interest-bearing debt is subtracted to provide a value of the equity of the entity.
- A reconciliation of the overall capitalization to determine the reasonableness of the returns used in the calculation is prepared.

EXAMPLE: CALCULATION USING THE EC	F METHOD
Assumptions:	
Value of net tangible assets	\$500
Return on net tangible assets	10%
Return on intangible assets	20%
<u>ECF Method</u> :	
Normalized cash flow	\$ 100
Less cash flow attributable to tangible assets	50
Cash flow attributable to intangible assets	50
Intangible asset rate of return	20%
Value of intangible assets *	<u>\$ 250</u>
Value of net tangible assets	\$ 500
Value of intangible assets	250
Value of invested capital	\$ 750
Less: Interest-bearing debt	(100)
Value of equity	<u>\$ 650</u>
* Uses CCF method	

The example above is a simplistic illustration of the method. It is important to note that the ECF method is often misused and misunderstood. Careful consideration must be given to the rates of return applied to the types of assets, which can have a significant impact on value.

The income approach is the most widely-recognized approach to valuing an interest in a privately-held business. The approach focuses on a forward-looking premise by calculating a value that is equal to the present value of the expected future benefits of ownership. No other valuation approach incorporates this premise. All three methods described in this chapter must consider all relevant factors and be carefully applied.

### Chapter VI – Common Misuses and Mistakes

While the concepts and formulas of the methods appear basic, the application of the methods under the income approach provide countless opportunities for misuses and mistakes. It is important for legal counsel to be aware of some of these mistakes, which can have a material effect on the valuation conclusion. The following is a description of the more common errors made in connection with the specific methods under the income approach.

- *Failure to normalize earnings.* The future expected earnings of a business must be normalized, including the removal of nonrecurring and nonoperating income and expenses (among other adjustments) to correctly define the base to which the risk rate will be applied.
- *Mismatching the discount rate with the economic income measure.* This includes applying a discount rate in real terms to an economic benefit stream in nominal terms or discounting a very risky projected benefit stream by a rate equivalent to a Treasury bill. Mismatching also includes applying the incorrect discount rate to the selected benefit stream. A WACC should be applied to cash flow to invested capital (debt-free), while a direct equity discount rate should be applied to net cash flow to equity (after interest expense.)
- *Interchanging discount and capitalization rates.* A discount rate is applied to all prospective economic benefit streams, while a capitalization rate is applied to a particular economic benefit stream (e.g., weighted average historical earnings or cash flow.) A discount rate is converted to a capitalization rate by subtracting a long-term sustainable growth rate. These rates generally do not equal one another.
- *Inappropriately relying on the recent past to provide the best estimate of future results.* This instance would include using historical results as a proxy for the future when circumstances existing at the company at the date of valuation suggest something to the contrary. In this instance, a discrete period projection should be prepared for a time period until the company's economic benefit stream reaches stabilization.
- *Projecting growth beyond what can be supported.* It is generally held that as a business grows, it typically requires additional working capital and capital expenditures to support the increased level of operations. There have been mistakes in income approach models in which growth is projected and sufficient reductions to cash flow for working capital and/or capital expenditures are not considered.
- Discounting future economic benefits using a year-end convention when a midyear convention is more appropriate. In the instance that an investor receives cash flows evenly throughout the year, the value added as a result of receiving the benefits sooner will not properly be reflected using a year-end convention. Therefore, discounting future economic benefits using a midyear convention produces a greater value than that using a year-end convention.

• *Failure to identify control versus noncontrol cash flows.* The valuation analyst must properly differentiate between the cash flow available to a controlling shareholder and the cash flow available to a non-controlling shareholder. Failure to identify the proper level of cash flow can lead to unreliable conclusions by way of the application of inappropriate valuation adjustments.

#### Sampling of Cases

The following presents several cases in which mistakes and misuses of the income approach were brought to light during the proceeding. The following is not intended to be all-inclusive of such cases.

#### Wall v. Commissioner, T.C. Memo 2001-75; 2001 Tax Ct. Memo LEXIS 97, March 27, 2001

- Both experts used a market approach and an income approach
- Petitioner's expert's income approach used an average of the company's historical results and one-year forecast to develop her "normalized" free cash flow and applied a capitalization rate of 22.75%, less a 5% assumed growth rate
  - Expert included only an income approach in her report after criticism by the respondent
- Respondent's expert used a similar method of determining cash flow, as well as a 15% discount rate (calculated from the long-term 'BAA' corporate bond yield rate of 9% and a 6% additional risk premium)
  - Expert did not explain his assumptions or choice of discount rates adequately
- The Court determined that both income approaches were unreliable, as it was difficult to predict the Company's future income at the date of valuation

#### Estate of Adams v. Comm., T.C. Memo 2002-80, 2002 Tax Ct. Memo LEXIS 84, March 28, 2002

- Both experts used income approaches and estimated discount rates using the BUM (risk-free rate plus additional risk premiums), the experts agreed to a cap rate of 20.53% after factoring in a growth rate of 6.34%
- Estate's expert increased his cap rate to 31.88% to make it a before-corporate-tax rate instead of an after-tax rate
- Court found that the expert's cap rate was improper, citing *Gross v. Commissioner*, which dealt with applying after-tax rates to pre-tax income of an S corporation

#### Re Nellson Nutraceutical, 2007 Bankr. LEXIS 99, January 18, 2007

- Federal bankruptcy case
- Valuation expert learned (after the fact) that the long-range financial plans provided by management did not represent management's "best and most honest thinking"
- Investors prepared a "puffed up" business plan for the debtors, which layered on growth initiatives with inflated revenues and EBITDA projections; ignored price compressions and increased market competition; and eliminated "millions" in capital expenditures
- The Court struck the expert's report for his use of the "maverick" capital expenditure metric in his DCF analysis, stating,

"In sum, [the investors] utilized [their] control over [the debtors] to manipulate both the business planning and valuation process to come up with an artificially inflated enterprise value...to claim some residual value for their existing equity position. There is no other credible interpretation of the evidence before the Court."

- The Court exonerated the experts, who applied "usual and customary" valuation techniques; and who "justly relied" on the debtors' information, which was "deliberately inaccurate"
- Accordingly, the Court decided to: (i) accept all three expert opinions; (ii) adjust them for perceived errors and inaccuracies; (iii) weigh them according to credibility; and (iv) adjust the weighted average to account for the debtor's performance since the appraisals

#### Re Lear Corp., 2007 Del. Ch. LEXIS 88, June 15, 2007

- Breach of fiduciary duty case heard by the Delaware Court of Chancery
- Plaintiffs offered an expert appraisal opining on Lear's per-share value at the time of merger negotiations
- Court reviewed the report and found several flaws in the expert's DCF analysis, including a miscalculation of the discount rate and a failure to consider current industry circumstances
- After the errors were corrected, the Court noted that the merger price appeared reasonable, especially in the context of a traditional (and correct) DCF valuation

### Chapter VII - Conclusion and Practical Considerations

There can be little debate that the income approach presents significant room for promoting the position of one party or another in any pending transaction or litigation setting. The complexities in the models lend the ability to influence the conclusions attained if the valuation analyst assumes a position of advocacy versus objectivity in his or her work.

Careful and well-thought input into the modeling process is imperative to producing a result that is defensible, as well as reasonable and appropriate, under the facts of the case. One need only consider the ability to modify, or if one dares, manipulate, the future expected benefit streams in one direction or the other to influence the conclusions. Moreover, the ability to increase or decrease specific-company risk within the cost of capital determinations, as well as long-term sustainable growth, can have a profound effect on the conclusions reached.

With those limitations identified and considered, it is still safe to say that the logic behind this approach, as well as its direct mechanical tie-in to the future economic performance of the company under valuation, makes the income approach very popular among producers and users of business valuation reports.

Further, as professional standards require consideration of all applicable approaches in every assignment, it is incumbent upon the business valuator to focus on this approach and its underlying methodologies in every valuation involving an operating entity.

Finally, it should be noted that the income approach has grown significantly in the litigation arena as an appropriate approach from which value is determined. Properly prepared and documented, the methods under this approach can often serve to shed a more accurate reflection of value for the fact-finder than either the market or the cost/asset approaches.

Understanding of this approach by members of the legal community will allow for greater capabilities in reviewing any number of legal matters, including, but not limited to, intangible asset valuation, damage calculations, business valuation and other time-value-of-money transactions.

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