

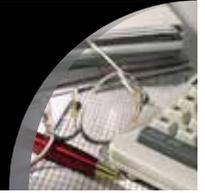
Attorney CLE Series



Thorny Issues with Applying the Income Approach in a Legal Setting



GROSSMAN YANAK & FORD LLP
Certified Public Accountants and Consultants



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



Bob heads our firm's Tax and Business Valuation Groups. He has over 35 years of experience in tax and valuation matters that affect businesses, both public and private, as well as the stakeholders and owners of these businesses. The breadth of his involvement encompasses the development and implementation of innovative business and financial strategies designed to minimize taxation and maximize owner wealth. As his career has progressed, Bob has risen to a level of national prominence in the business valuation arena.

His expertise in business valuation is well known, and Bob is a frequent speaker, regionally and nationally, on tax and valuation matters. Bob 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). He has served as an adjunct professor for Duquesne University and Saint Vincent College. He has also written articles for several area business publications and professional trade journals.

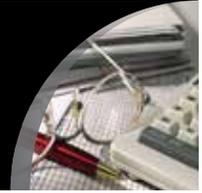
After graduating from Saint Vincent College in 1979 with Highest Honors in Accounting, Bob earned a Masters of Science degree in Taxation with Honors from Robert Morris University. He is a CPA in Pennsylvania and Ohio and is accredited in Business Valuation by the AICPA. Bob also carries the well-recognized 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 PICPA Pittsburgh Committee on Taxation. He has also served as Chair of the Executive Advisory Board of NACVA, its highest Board; as well as Chair of NACVA's Professional Standards Committee and its Education Board.

Bob received NACVA's "Thomas R. Porter Lifetime Achievement Award" for 2013. The award is presented annually to one of 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.

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

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



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



Melissa, a partner in the firm's Business Valuation & Litigation Support Services Group, has practiced in public accounting for more than 21 years. She has significant experience in business valuation and tax-related issues for privately held concerns and their owners.

Her business valuation experience is diverse, including valuations of companies in the manufacturing, oil and gas and technology industries. These valuations have been performed for various purposes such as financial reporting, equitable distributions, buy/sell transactions, dissenting shareholder disputes, Employee Stock Ownership Plans (ESOPs), value enhancement and gift and estate tax purposes. Melissa 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 two years with a local accounting firm in Pittsburgh. She joined Grossman Yanak & Ford LLP in 1997.

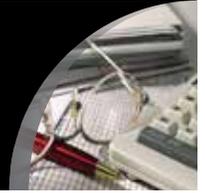
Melissa is a certified public accountant. She is accredited in business valuation and certified in financial forensics by the American Institute of Certified Public Accountants (AICPA). She has also earned the AICPA Certificate of Achievement in business valuation. Additionally, Melissa carries the credentials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

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

Melissa has written business valuation course-related materials and serves as a national instructor for NACVA. She has also authored articles appearing in professional publications.

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 also a mentor for women business owners through Chatham University's MyBoard program.

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



Brad W. Matthews, CPA, CVA



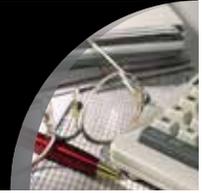
Brad has focused his career on providing valuation and litigation support services since joining Grossman Yanak & Ford LLP in 2011. His experience includes financial statement and historical financial trend analysis, financial modeling, business risk assessment, as well as performing calculations required for the preparation of business valuations and other consulting projects.

Brad has served clients in many industries including manufacturing, professional services, financial services, engineering, construction, retail, management consulting, oil and gas, and technology. He has played a significant role in providing business valuation services for a range of purposes including gift and estate tax planning, Employee Stock Ownership Plans (ESOPs), marital dissolutions, corporate divorce/shareholder disputes, financial and tax reporting, buy/sell transactions, and general business planning. Further, his litigation support experience includes the determination of lost profits and economic damages arising from various disputes.

Brad graduated from the University of Pittsburgh, earning a double major in Accounting and Finance with a minor in Economics. Currently, Brad is enrolled in Leadership Pittsburgh Inc.'s Leadership Development Initiative (LDI) program that hones the leadership skills of high-potential young professionals.

He is a certified public accountant (CPA) and has earned the Certified Valuation Analyst (CVA) designation conferred by the National Association of Certified Valuators and Analysts (NACVA).

In his spare time, Brad enjoys golfing, following Pittsburgh sports and spending time outside with his family. He lives in the North Hills with his wife, Alexis.



GYF CLE Course Offerings

The following courses have been presented by our professionals:

- *The Business Valuation Process*
- *Understanding Standards of Value and Levels of Value*
- *Income Approach to Business Valuation*
- *Market Approach to Business Valuation*
- *Cost/Asset Approach to Business Valuation*
- *Quantification and Application of Valuation Discounts*
- *S Corporations vs. C Corporations: Understanding Valuation Differences*
- *Special Purpose Valuations: ESOPs & Buy-Sell Agreements*
- *Special Purpose Valuations: Estate & Gift Tax Planning*
- *Economic Damages: Lost Profits Determinations*
- *Attorney's Guide to Financial Statements*
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- *Business Entity Selection & Structuring Transactions*
- *Fraud & Forensic Accounting*
- *Navigating the New Tax Laws: Recent Changes & 2013 Planning*
- *Intangible Assets: Identification, Valuation and Controversial Issues*
- *Understanding ESOPs and Their Use In Exit Planning*
- *Advising Individual Tax Clients for 2013 and Beyond*
- *Analyzing Financial Statements and Their Impact on Value*
- *Exit Planning: Considerations and Steps for Exiting a Business*
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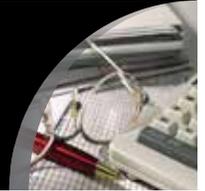
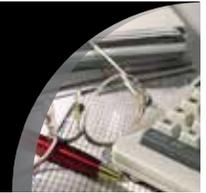


Table of Contents

I. Introduction	1
II. Standards of Value and Levels of Value.....	5
III. Basics of the Income Approach.....	13
IV. Complexities and Issues Relating to the Numerator.....	20
V. Complexities and Issues Relating to the Denominator	32
VI. Cases Illustrating Issues Addressed by the Court.....	43
VII. Conclusion and Practical Considerations	59

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Thorny Issues with Applying the Income Approach

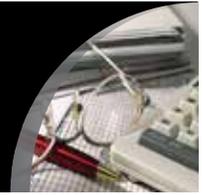
I. Introduction

A fundamental precept of valuation is that all value is “forward-looking.” In other words, one purchases a collectible, whether it be a classic car or a rare painting, with the expectation that the purchase price will be returned at some point in the future (possibly, far into the future). The collector expects that he or she will not only receive consideration equivalent to the original purchase price, but also some additional consideration for asset appreciation and to compensate for the fact that monetary funds were deployed to acquire that collectible, versus using those same funds in some alternative investment.

These same simple principles drive the valuation of publicly-traded stock. Though prices of shares adjust rapidly on the public markets as more information becomes available, it is evident that the prices are set on the market’s expectations as to future performance. This future performance is measured through estimates of expected future economic benefits. These economic benefits include cash distributions (generally, dividends) and capital appreciation. In setting the prices of any particular stock, the realization of these expected future economic benefits must be tempered by the risk associated with the receipt of the estimated amount of expected future benefits at the points in time when those economic benefits are expected to be realized.

In bringing the above-noted point home, think of yourself as an investor. In meeting with your advisors, you decide to purchase 100 shares of Apple company stock. As an investor, you have little interest in the economic benefits realized prior to your purchase as you did not hold the stock as those benefits were realized and have no claim whatsoever on those benefits. The price you are willing to pay for that investment reflects what you expect that stock to do for you in the future, i.e., how that stock will perform after you purchase it.

The investment principles encompassed in the forward-looking precept can be extended to privately held companies as well. There is no fundamental difference in evaluating expected future economic benefits for a privately held company versus one that is publicly held. The latter simply carries a reporting responsibility to a variety of governmental oversight agencies, the most important of these being the Securities and Exchange Commission (SEC). As a result, such companies are laden with a substantial amount of public information allowing analysts and market participants the opportunity to clearly discern the investment risks associated with buying a share of stock in that company. The views of these analysts and others following any stock, based on their research and study, generally drive the trading value of those shares and help set the value. Such information is inherently “missing” in the risk analysis of privately held businesses, shifting the onus of estimating value to the business valuation analyst as the need arises periodically.



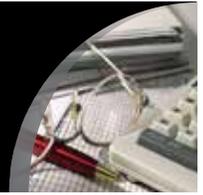
Thorny Issues with Applying the Income Approach

Such common applications extend to issues of value confronted in legal and litigation contexts. The breadth of issues entangled in setting an estimate of future expected economic benefits, and then determining the proper risk rate by which those expected future economic benefits can be reduced to present value at any particular date of interest, is an exercise that combines financial analysis with professional judgment. The degree of analysis, as well as the need for the valuation analyst to maintain a strictly objective and independent position throughout the entire process of the assignment, can often lead to what might seem to be a very cumbersome calculation of value. An ability to maintain clarity as an expert witness necessitates simplicity in approach. That requirement, in and of itself, often leads non-valuators to view the process as a difficult sell in mediation, arbitration and court settings.

The mechanical answer in making this determination of expected future economic benefit streams and the requisite risk assessment is most clearly established by applying an income approach. Under this approach, there are two primary methodologies: the discounted future economic benefit (usually defined as net free cash flow) method and the capitalized future economic benefit method. The former requires the preparation of a series of projections over a discrete period of time, with a terminal value calculation required at the end of that discrete period. The latter uses a single period as indicative of future performance, and is simply a shortcut method to applying the income approach. Given the same assumptions, the capitalized future economic benefit method will produce an identical result as the discounted future economic benefit method. Thus, future prognostication and prediction is inherent in both methods.

In truth, the use of an income approach to determine economic damages, lost profits and/or valuation solutions is an exceedingly clean and simplistic process, at least at the conceptual level. If one simply sees the future economic benefit stream as a numerator and then divides it by a risk rate that accounts for all of the risks associated with the attainment of that economic benefit stream, the result of the calculation is value. As an example, assume that a determination is made that the ongoing future cash flow of an enterprise is \$20,000. Further assume a risk rate (in this case, and as explained later, a capitalization rate) of 20%. Using these assumptions, the result is \$100,000 ($\$20,000/.20$), which can be viewed as the present value of the future cash flow, or the expected economic benefit.

With such simplicity, how does the use of the income approach to valuation, and the corresponding valuation methods used under that approach, lead to so much consternation and confusion? The answer begins again with the basic precept discussed earlier. If all value is forward-looking, the approach and its underlying methods essentially convey a need for prognostication. Prognostication requires prediction about the future, which entails, for financial modeling purposes, financial forecasts and projections. At the core of applying



Thorny Issues with Applying the Income Approach

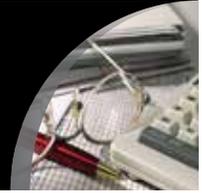
this approach and its underlying methodologies is the need to incorporate as much supportable information external of the valuation analyst as possible. A failure to do so leads to the inclusion of greater levels of professional judgment, much of which can be subjective.

In preparing expectations of future economic performance, historical performance can play a meaningful role, if that historical performance is deemed to be reflective of the likely future performance. However, even with quality historical information that is likely to continue into the future, there is often the need to modify that past history to reflect economic substance and realities that are critical to the proper use of the approach and the underlying methods.

The preparation of future financial forecasts and projections present great opportunity to manipulate detailed information in a way that allows experts to posture in a legal or litigation setting. Such is rarely the case when using quality experts to undertake such efforts. However, even when using professionals with strong reputations, those experts can differ in their interpretations of the supporting information driving their forecasts and projections. Simple posturing, as well as wide variances in interpretation of supporting information can, of course, lead to a broad range of conclusions among experts. These are, indeed, the very quandaries that face triers of fact in interpreting information submitted for the court's consideration in attempting to facilitate the appropriate decision in any proceeding.

The second area of contest in applying the income approach in attempting to quantify a particular financial matter in litigation is the risk rate determination. While most experts resort to commonly-accepted models for determining a discount rate and then converting it to a capitalization rate, there is significant room within the inputs to the models to facilitate a wide range of potential calculation results. Again, there is a need to conform the expert's answers with third-party empirical information to ensure that the determinations of the risk rate are as objective and market-based as possible. Unfortunately, the determination of the risk rate requires significant professional judgment, and this judgment, by definition, incorporates a healthy dose of subjectivity into the process.

As is always the case, a determination of value or economic damages is an exercise in establishing and proving fact. It goes without saying that minimization of conjecture and supposition and maximization of external third-party supporting information is always the best answer for any economic matter in a legal proceeding. However, given that the availability of external third-party supporting information is limited and that the methods under the income approach are imperfect, seasoned judgment must often be used to fill in gaps within the process.



Thorny Issues with Applying the Income Approach

Today's Continuing Legal Education session is intended to provide participants with a strong understanding of the income approach and the various methodologies that are most often applied under that approach. It is also intended to help participants evaluate a financial determination under this approach and easily identify where the assumptions and calculations might be suspect and leading to an inappropriate conclusion.

The topics that will be discussed, by chapter, include the following:

- *Chapter II – Standards of Value and Levels of Value*
- *Chapter III – Basics of the Income Approach*
- *Chapter IV – Complexities and Issues Relating to the Numerator*
- *Chapter V – Complexities and Issues Relating to the Denominator*
- *Chapter VI – Cases Illustrating Issues Addressed by the Court*
- *Chapter VII – Conclusion and Practical Considerations*

We truly appreciate your participation today and we thank you for attending. We hope that the information shared at today's session will assist you in your professional practice and that you have found your time spent with us worthwhile.

Should you have questions, comments or observations not fully addressed today, the authors will be available after the presentation, or please do not hesitate to contact them at a later date. Their phone numbers and email addresses are listed below.

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We appreciate the support you have shown our Firm in the past, and we look forward to working with each of you in the future. Thank you again!



Thorny Issues with Applying the Income Approach

II. Standards of Value and Levels of Value

In order to understand the issues that can plague a business valuation utilizing the income approach, the user of a business valuation must first understand certain foundational concepts. These concepts include:

- **Standards of Value** – the definition of “value” in each particular valuation engagement, which will drive the specific valuation methods and models applied during the course of the valuation; and
- **Levels of Value** – which contemplate the specific control and marketability characteristics of the business ownership interest under analysis in the valuation engagement.

The ability of users to understand these concepts and how they relate to the application of certain procedures within a business valuation is critical. The onus of educating the users about the different standards and levels of value is on the valuation analyst, however, in almost all instances, the burden of determining the proper standard and level of value to be used in any individual engagement is in the hands of legal counsel.

Standards of Value

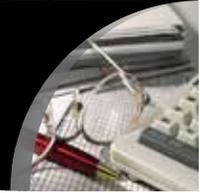
Understanding what exactly is a standard of value is not overly complex. Though labeled a “standard,” it is nothing more than a definitional explanation of different commonly-utilized types of value. However, it is incumbent upon the valuation analyst and the user of his/her work product to fully understand the ramifications and implications of each definition. The standards of value most commonly encountered by valuation analysts and users of business valuation work products are: Fair Market Value, Investment Value, Intrinsic/Fundamental Value and Fair Value. These standards of value are detailed briefly below.

Fair Market Value

By far the most common standard of value, fair market value, is applied in income, estate and gift tax, marital dissolution¹ and, often, non-shareholder oppression litigation. Fair market value is defined in the United States Treasury regulations [20.2031-1(b)] and Revenue Ruling 59-60, 59-1 CB 237 as:

...the price at which the property would change hands between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts. Court decisions frequently state in addition that the hypothetical buyer and seller are assumed to be able, as well as willing, to trade and to be well informed about the property and concerning the market for such property.

¹ Many states use the term “fair market value” in their marital dissolution cases. The definition of fair market value may vary from state to state and will not necessarily be the same definition applied for federal tax purposes.



Thorny Issues with Applying the Income Approach

This definition requires that the valuation result be driven by a hypothetical sale transaction. Given that the definition requires consideration of a hypothetical sale, it stands to reason, then, that focus and attention must be given by a valuation analyst to those hypothetical buyers and sellers and the types of concerns and issues that potential hypothetical buyers and sellers might consider prior to entering into a transaction.

A key component of this definition is that a value determination based on special motivations of either a specific buyer or a specific seller would not be considered fair market value. Fair market value also anticipates that both the hypothetical buyer and seller have the ability, as well as the willingness, to enter into the hypothetical transaction.

The definition of fair market value anticipates a value determination under prevalent economic and market conditions at a particular date of valuation. To assume an economic or market turnaround at a point in time beyond the date of valuation will result in a value other than fair market value.

The definition of fair market value also assumes that payment in the hypothetical transaction will be made in cash or its equivalent at the date of valuation. Thus, consideration of any deferred financing or special purchase arrangement is not appropriate when the goal is to identify fair market value.

Finally, fair market value, by definition, must allow reasonable time for exposure in the open market. For equity ownership interests requiring longer periods of exposure, marketability (or, rather, the lack of marketability), presents a greater investment risk and, therefore, a value detriment. Often this value detriment is addressed in the business valuation process as a discount.

Investment Value

Investment value is generally defined as the specific value of an investment to a particular class of investors based on individual investment requirements. In consideration of valuing an equity ownership interest, investment value differs from fair market value, which is not buyer- or seller-specific.

Often, investment value is also referred to as synergistic or strategic value. This reference reflects the impact of those synergistic or strategic benefits that one particular buyer may bring to the negotiating table in determining investment value. Such buyer-specific benefits might include:

- An ability to enhance future operating performance of the subject company,
- An ability to mitigate certain risks inherent in the subject company,
- An ability to more efficiently finance the acquisition of the subject company, and
- An ability to assimilate current operations synergistically with the subject company.



Thorny Issues with Applying the Income Approach

In most instances, investment value will exceed fair market value. This phenomenon is primarily the result of the supply and demand continuum for target companies. Simply put, demand for acquisition targets far exceeds available supply. As competitive bidding progresses in the negotiation process, the marketplace reveals that prospective specific buyers are generally willing to pay a premium beyond fair market value to close the deal. Very often, these premiums are justified on a cost-benefit approach by considering such items as the “cost to create” the target business in its current state and geographic location, as well as the time that it might require to recreate the target business. Additionally, anticipated post-acquisition cost reductions due to operational synergies may allow for the payment of a premium.

Intrinsic or Fundamental Value

Perhaps the most difficult standard of value to grasp, intrinsic value represents a specific analyst’s judgment of value based on the perceived characteristics inherent in the specific investment. The intrinsic value does not contemplate the specific motivations of a particular buyer, but rather, how that one analyst’s perception of the characteristics attendant to the subject equity ownership interest compares to other analysts’ perceptions.

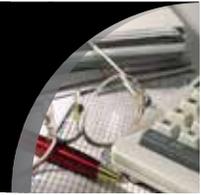
An easy way to envision intrinsic value is to consider how it might apply to a capital stock investment. Essentially, intrinsic value is that value, based on the analyst’s “fundamental evaluation” of all available information that the analyst believes reflects the “true” or “real” worth of that stock. When all analysts perceive the stock’s value as the same number, the intrinsic value moves to fair market value.

The term intrinsic value is often discussed in case law; however, it is rarely defined. Attempts to utilize this standard of value in New Jersey family courts have been met with controversy.

Fair Value under State Statutes

In most states, fair value is the statutory standard utilized to resolve shareholder disputes for both dissenting and oppressed shareholder lawsuits and civil actions. Thus, fair value is a legally created standard of value.

While most states have a fair value statute, the majority of those offer little insight into its computation. It is noteworthy that state courts have not considered fair value for these purposes as being equal to fair market value. Generally, damages to the harmed party are determined by the difference between the value of the dissenting shareholder’s percentage ownership interest before and after the corporation action, without consideration of any discounts for lack of control or lack of marketability.



Thorny Issues with Applying the Income Approach

Fair Value for Financial Reporting

As international accounting rules, including those used in the United States, move from a historical basis of accounting to a “fair value” basis of accounting, more attention has been focused on the definition of fair value for financial reporting purposes. Note that fair value for financial reporting has no relationship whatsoever to fair value under state statutes.

Issued by the Financial Accounting Standards Board (FASB) on September 15, 2006, Statement No. 157 (SFAS 157) is effective for financial statements issued for fiscal years beginning after November 15, 2007. Note: SFAS 157 is now referred to as FASB Accounting Standards Codification 820 (ASC 820) – *Fair Value Measurement and Disclosures*.

ASC 820 provides guidance on the measurement of fair value as a market-based measurement. A hierarchy for considering market-participant assumptions outlines and distinguishes between sources independent of the reporting entity and the reporting entity’s own assumptions.

ASC 820 gives a single definition of fair value:

Fair value is the price in an orderly transaction between market participants to sell the asset or transfer the liability in the market in which the reporting entity would transact for the asset or liability, that is, the principal or most advantageous market for the asset or liability.²

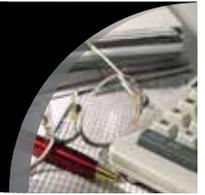
It is clear from FASB releases that fair value for financial reporting is not fair market value, as noted earlier. ASC 820 expands on the difference between fair value and fair market value:

The Board agreed that the measurement objective encompassed in the definition of fair value used for financial reporting purposes is generally consistent with similar definitions of fair market value used for valuation purposes. For example, the definition of fair market value in Internal Revenue Service Revenue Ruling 59-60 (the legal standard of value in many valuation situations) refers to “the price at which property would change hands between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts.”

However, the Board observed that the definition of fair market value relates principally to assets (property). Further, the definition has a significant body of interpretive case law, developed in the context of tax regulation. Because such interpretive case law, in the context of financial reporting, may not be relevant, the Board chose not to adopt the definition of fair market value, and its interpretive case law, for financial reporting purposes.³

² FASB ASC 820 – *Fair Value Measurement and Disclosures* (formerly SFAS 157), paragraph 5.

³ FASB ASC 820 – *Fair Value Measurement and Disclosures* (formerly SFAS 157), paragraph C50.



Thorny Issues with Applying the Income Approach

Issues Relating to Standards of Value

The proper standard of value for each valuation assignment should be determined prior to the commencement of valuation procedures. In the estate and gift tax realm, the standard of value will always be fair market value. However, in the litigation realm, the proper standard of value can be less clear-cut.

In the event of a shareholder dispute, first, consideration should be given to binding legal documents between the shareholders. In the event that a buy-sell agreement exists, it may direct the valuation analyst to an agreed-upon standard of value or an agreed-upon set of procedures to calculate value. However, formation documents can be vague or even silent with regard to how the value of an owner's equity interest in the business should be determined. In this instance, statutory decisions at the state level will determine the proper standard of value, and ultimately the procedures to be applied by the valuation analyst.

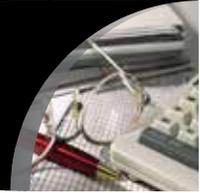
In most states, including Pennsylvania, fair value is the statutory standard utilized to resolve shareholder disputes, both for dissenting shareholder and oppressed shareholder lawsuits and civil actions. Fair value is defined in the Revised Model Business Corporation Act (RMBCA) as: "the value of the shares immediately before the effectuation of the corporate action to which the dissenter objects, excluding any appreciation or depreciation in anticipation of the corporate action unless exclusion would be inequitable."

This definition was revised most recently in 1999 to read, "the value of shares immediately before the effectuation of the corporate action to which the dissenter objects using customary and current valuation concepts and techniques generally employed for similar businesses in the context of the transaction requiring appraisal, and without discounting for lack of marketability or minority status except, if appropriate, for amendments to the certificate of incorporation pursuant to section 13.02."

The primary difference incorporated in the 1999 version is that the definition addresses the inapplicability of valuation discounts. Few states have integrated this update into their statutes, but the new definition has been referenced in several shareholder/equity owner dispute cases as support for the exclusion of valuation discounts. While there is currently no clear consensus among states on whether fair value calculations should include the application of discounts, the trend appears to be moving towards excluding them.

Depending on the jurisdiction, the following has been observed when applying fair value:

- Disallowing both discounts;
- Allowing both discounts;
- Allowing only a discount for lack of control; and
- Allowing only a discount for lack of marketability.



Thorny Issues with Applying the Income Approach

In Pennsylvania it has been observed that in employing the fair value standard, valuations appear to use fair market value without the consideration of either discount for lack of control or lack of marketability.

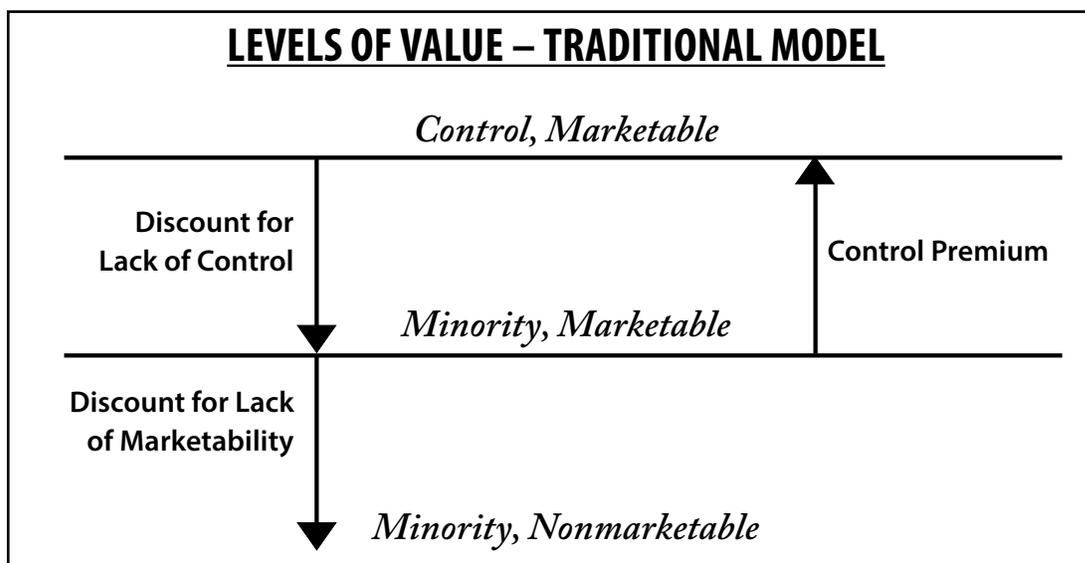
Selecting the correct standard of value and applying it properly is critical. Issues commonly arise when the two sides of a litigation matter have a different understanding of the proper standard of value. Certainly, if a defendant believes that the proper standard is the investment or strategic standard of value while the plaintiff believes that fair market value is appropriate, the difference in the resultant value conclusions can be significant.

Levels of Value

In the context of determining the value of a business ownership interest, the level of value relates to the characteristics of that ownership interest. Specifically, the levels are defined by the interest's attribute of control over the operations of the business, and the marketability of the interest.

Control and marketability attributes are inherently tied to the resultant value of a specific ownership interest. All other factors aside, owning an equity interest that allows the holder the perquisite of control over a business's operations is more valuable than an identical interest that does not allow for control. Marketability refers to the ability to quickly convert property to cash at minimal cost. An asset that cannot be quickly converted to cash, or is not marketable, is worth less to a hypothetical investor than an identical asset which can be converted to cash quickly due to the time and effort needed to liquidate the asset.

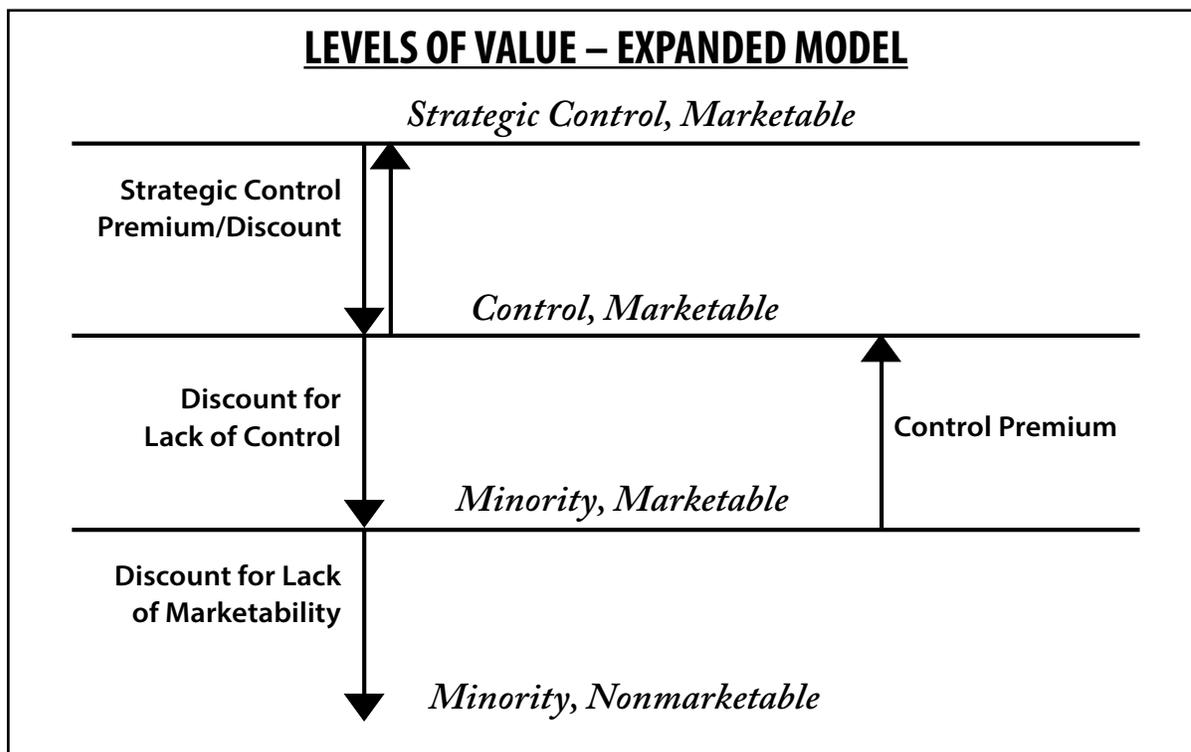
Historically, the business valuation and finance communities have assumed that the ownership of an asset can be categorized into one of three basic levels of value, which are often demonstrated in the following graphic.





Thorny Issues with Applying the Income Approach

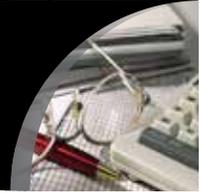
It has become apparent through the observation of market-driven information, that premiums paid in the marketplace for controlling interests in business enterprises also include a synergistic or investment premium. Such observation led to an expansion of the traditional levels of value model as illustrated in the graphic below.



It is important for the valuation analyst to understand the characteristics of the ownership interest under valuation as well as the standard of value, since this will determine the target level of value. Facts and circumstances embedded in the calculations during each valuation engagement will determine the level of value implied as a result of the valuation analyst's procedures. Further, depending on the methodologies employed, the valuation analyst will need to determine the applicability of additional discounts or premiums necessary to bring the calculated value to the target level of value.

Issues Relating to Levels of Value

Determining the proper level of value will impact a valuation in the potential misapplication of valuation discounts. Once a valuation analyst has completed his or her procedures, he/she must determine where on the level of value spectrum the calculated value falls. Applicable discounts for lack of control and marketability are then applied to bring the calculated value to the target level of value.



Thorny Issues with Applying the Income Approach

Specifically relating to the income approach, problems arise when a valuation analyst must determine if the implied level of value is on a controlling basis or on a minority basis. No matter the method utilized, the results of the income approach are always presumed to be on a marketable basis.

The determination of whether the value is on a controlling basis or a minority basis lies in the normalization adjustments made, if any, by the valuation analyst. Certain adjustments made by the valuation analyst carry the assumption of control. Thus, the resultant level of value is a controlling level of value. Alternatively, if no control adjustments are made in the quantification of the benefit stream in the income approach, the presumed level of value will be on a minority level of value.

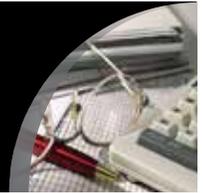
Problems can also arise when the valuation analyst does not clearly understand the specific control and marketability attributes of the subject ownership interest. For instance, if a shareholder agreement has a clause that a minority shareholder has the ability to put his ownership interest back to the company upon certain triggering events, there is an attribute of marketability that must be considered. Alternatively, if a shareholder agreement states that the company and/or other shareholders must approve the sale or transfer of shares to a third party, the subject shares are less marketable, which also must be considered by the valuation analyst.

Final Thoughts

The proper standard of value and level of value to be utilized in a valuation assignment should be determined prior to the commencement of any procedures. As noted, the valuation analyst must educate legal counsel on the various standards and levels of value, their meanings and the potential impact each may have on the resultant value conclusion. To determine the proper standard and level of value, legal counsel should consider:

- The purpose of the valuation assignment;
- Formation documents that speak to control and marketability attributes of the subject ownership interest;
- Corporate agreements that may define the proper standard of value or control the procedures to be completed by the valuation analyst; and
- Judicial precedents relating to the specific case.

Conclusions which are based under the incorrect standard of value or level of value can be detrimental to litigation and can often have a valuation analyst's report excluded from the court. Likewise, in the gift and estate tax planning arena, the application of procedures resulting in a conclusion under the incorrect standard of value or level of value can expose the taxpayer to an IRS audit as well as to potential penalties. While definitional in nature, these foundational aspects of the engagement will have a significant impact on the ultimate conclusion of value.



Thorny Issues with Applying the Income Approach

III. Basics of the Income Approach

In order to properly understand the issues which can arise in connection with the application of the income approach, the user of a valuation report must first understand the fundamental mechanics of the approach.

As discussed earlier, a foundational principle in all valuation is that value is forward-looking. The income approach is based upon the economic principle of anticipation. In theory, the value of a business or an interest in that business depends upon the future economic benefits that will accrue to it, with the value of economic benefits discounted or capitalized at an appropriate risk rate.

If one thinks of this concept in light of his or her own investment portfolio, it is easy to discern the importance of this foundational principle. As noted in the Apple stock example discussed earlier, market forces focused on future expectations drive the purchase price for that stock. While the past may be of some import in predicting the future, it is absolutely the future performance that sets the trading prices.

Under the income approach, the primary drivers that must be calculated by the valuation analyst are:

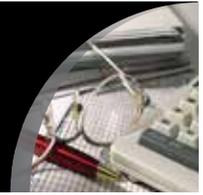
- The future expected economic benefit stream attendant to the business or an ownership interest in that business, and
- The risk associated with the realization of those future expected economic benefits at the time they are scheduled to be earned or paid and in the amounts that they are projected.

The balance of this chapter is dedicated to providing an overview of the methods utilized under the income approach in order to provide the user with a foundational understanding of the approach.

Fundamentals

The income approach is probably the most widely recognized and most often used approach to determining the value of a privately held business interest. The primary reason for this recognition and use by both valuation analysts and by potential users of those determinations, is the close alignment of the methods under the income approach to the basic precept that all value is forward-looking.

In the context of an income approach, the forward-looking premise is captured in future expected economic benefit streams (usually, free cash flows), as discussed later in these materials. The risk rate, also to be discussed later, is quantified by looking at the expected rate of returns on other types of investments, as well as risks of investment specific to the company under valuation and the attendant ownership interest in that company.



Thorny Issues with Applying the Income Approach

Note that the income approach is widely accepted and can be adopted to any number of uses beyond valuations of equity interests, including, most notably, economic damages calculations. In effect, any business decision predicated upon some future economic benefit stream can be analyzed under this approach, which provides a solid basis to make an informed decision.

Mechanics

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

As an example, 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 can be expressed as follows:

$$\text{Value} = \$1,000 \div 20\% = \$5,000$$

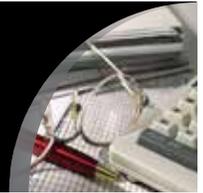
As noted earlier, it is generally accepted within the financial industry that “future payments” or “future economic benefits” are most often referenced as “expected future free cash flows.” The primary reason behind the use of free cash flow as the indicator of future economic performance is that the most commonly utilized sources of empirical data used to estimate risk rates or cost of capital is based on cash flow after entity-level taxes. Thus, using future expected cash flow as the numerator in the mathematical fraction ensures that the resultant calculation properly matches the two variables (numerator and denominator).

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 attributes of the company and the equity interest in the company.

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 into the investment (the company) based on the actual attributes and risk characteristics of the company or an equity interest therein, as a measure of expectations related to the cash flows in the numerator.

Summarily, the rate of return incorporates investor expectations relating to the future economic benefit stream associated with a particular investment. Discussed in greater detail later, 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-free basis



Thorny Issues with Applying the Income Approach

- **Expected inflation** – the expected depreciation in purchasing power during the period when money is tied up, i.e., the time value of money consideration
- **Risk** – the uncertainty as to when, and how much, future cash flow or other future economic income will be received

The first item is essentially rent. Any investor electing to “lend” another party use of his or her funds could expect a rental fee or payment. The second expectation 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.

As noted earlier, and as will be explained in the next chapter of these materials, the development of risk rates is a complex process fraught with subjectivity.

Methodologies

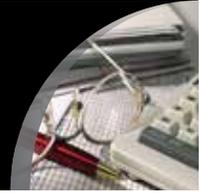
Determination of value under the income approach can be accomplished through the proper application of two primary methodologies:

- The Capitalized Cash Flow (CCF) method, or
- The Discounted Cash Flow (DCF) method

Each of these methods requires the determination of a “future economic benefit stream” – a numerator – and a rate of return (risk) – a denominator. For purposes of today’s program, we will assume going forward that the future economic benefit stream is defined as free cash flow, delineated herein as simply “cash flow.”

The CCF method utilizes just one numerator and denominator, and is often referenced as a shortcut method under the income approach. Alternatively, the DCF method utilizes a series of fractions predicated on a set of prepared projections over a discrete period of time with the addition of a single terminal value at the end of the discrete projection period.

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 mechanics employed in the application of the approach, but also in identifying problems and issues as well as interpreting the conclusions set forth thereunder.



Thorny Issues with Applying the Income Approach

Applying the Income Approach Methods

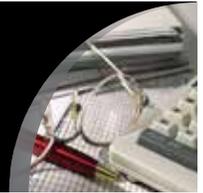
As discussed earlier, the income approach is simply a mathematical fraction, consisting of a numerator and a denominator, in which the numerator represents the “future economic benefits” (cash flow) expected from the investment and the denominator is the rate of return required (or yield) that an investor would have to forgo by investing in the subject investment instead of investing in comparable alternatives. The following section details the mechanical process of calculating value or economic damages under an income approach.

Capitalized Cash Flow (CCF) Method

As noted, the difference between the CCF method and the DCF method is driven by the future growth in the benefit stream and how that growth is algebraically captured in each model. 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, that is, future growth is presumed to be linear.

The basic steps utilized by the CCF method of calculating value under the income 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, non-recurring and non-operating items of income and expense are removed so that the value of the business operations of the enterprise can be assessed at the valuation date.
- The benefit stream that will be considered in the final computation is selected.
- A period of review (generally, five years or a business cycle) 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.
- Non-operating 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.



Thorny Issues with Applying the Income Approach

The CCF formula is as follows:

$$PV = \frac{NCF_1}{k - g}$$

Where: PV = Present value

NCF₁ = 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

EXAMPLE: CALCULATION USING THE CCF METHOD

Assumptions:

Discount rate (k)	24%
Long-term growth rate (g)	4%
Year 0 cash flow	\$1,000

Capitalized Cash Flow Method:

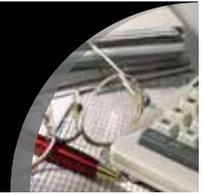
Year 0 cash flow	\$ 1,000
One year growth factor	<u>1.04</u>
Year 1 cash flow	1,040
Capitalization rate	<u>.20</u>
Value Result	<u>\$ 5,200</u>

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. The CCF method can be applied either on an end-of-year convention (meaning that economic benefits are received at year-end) or a mid-year 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 but relies upon a multi-period rather than a single-year analysis. 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 a discrete period forecast and an estimate of the cash flows beyond the discrete period forecast (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 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. 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.



Thorny Issues with Applying the Income Approach

Since specific projections or forecasts 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 forecast period and, from this information, develop the terminal value. The expected stream of future benefits includes the terminal value.

The steps utilized by the DCF method of calculating value under the income approach are as follows:

- The benefit stream that will be considered in the final computation is selected.
- A discrete period forecast 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.
- Non-operating 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.

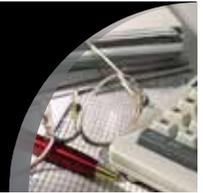
The DCF formula is as follows:

$$PV = \sum_{i=1}^n \frac{E_i}{(1+k)^i}$$

- Where:
- PV = Present value
 - Σ = Sum of
 - n = The last period for which economic income is expected
 - E_i = Expected future economic income in the i^{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:

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



Thorny Issues with Applying the Income Approach

EXAMPLE: CALCULATION USING THE DCF METHOD

Assumptions:

Discount rate (k) 24% Long-term growth rate (g) 4% Year 0 cash flow \$1,000

Discounted Cash Flow Method:

<u>Projected year</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>Terminal yr*</u>
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)	<u>\$ 5,200</u>					

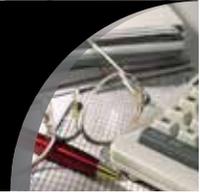
*Terminal Year: $CF_n \cdot (1+g)/k-g = \$ 6,327$

As the examples illustrate, using the CCF and the DCF, with the same set of assumptions, will produce identical valuation conclusions. This is an important point as, often, valuation analysts will err in confirming one of these two methods with the other. Such confirmation is incorrect, illogical and challengeable as wrong inputs into both models will produce the same result.

Final Thoughts

As noted, the income approach is the most widely recognized approach to valuing a privately held business and an interest(s) 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. While such a premise is common to every valuation approach and method, no other valuation approach or method so directly incorporates this fundamental concept.

The courts' acceptance of the use of the income approach is less than comforting as will be demonstrated in the discussion of case law later in this presentation. Suffice at this point to simply point out that, by definition, the future invokes a need for prognostication. And, by definition, prognostication requires forecasts of future events. Historically, triers of fact have been more comfortable focusing on actual facts to the date of measurement rather than looking to conjecture about the future. The flaw in this thinking, however, is that by using historical information and extrapolating the data into the future, the trier is, indeed, forecasting future events through the assumption that the past performance is equally applicable to the future.



Thorny Issues with Applying the Income Approach

IV. Complexities and Issues Relating to the Numerator

As noted in the previous chapter, the income approach focuses on the value of the future economic benefit streams derived from a business. As such, it is always necessary when using the income approach, and the methods thereunder, to develop a forecast or projection of future cash flows. Whether developed from historical results or future forecasts, value is predicated on the present worth of an anticipated series of future income streams.

In other words, the income approach answers the question as to what economic benefit income the buyer receives as a return on his/her investment after taking into account the risk that the income may not continue as expected.

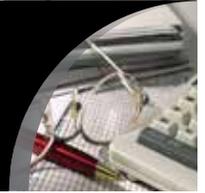
Defining the Benefit Stream

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 free cash flow. Note that, in many small companies, income and cash flow are the same or similar.

- **Net Income** – 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-tax 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.
- **Free Cash Flow** – In recent years, free 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.

Normalization Adjustments

Each method under the income approach calculates the present value of an enterprise's future benefit stream, usually quantified, at least as a preliminary step, with the company's historical financial data. Preferably, the financial data is in compliance with generally accepted accounting principles (GAAP).



Thorny Issues with Applying the Income Approach

Valuation analysts, including CPAs, are not responsible for attesting or verifying financial information or certifying GAAP statements when providing valuations. Often, especially on smaller assignments, non-GAAP financial information is provided as a starting point to derive income or cash flow. In many cases, this information can be acceptable. However, valuation analysts still must make appropriate adjustments to income statements and/or balance sheets within the scope of the engagement. The development of these adjustments is referred to as the normalization process.

Note that the financial information that is used as a starting point for calculating the benefit stream should be projected on an economically “normal” basis and not necessarily GAAP or 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 its capability to continue 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 continuing future operational needs.

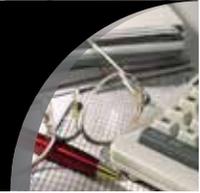
Common Normalization Adjustments

As noted, the normalization process involves the restatement of the historical financial statements to “value” or “economic” financial statements, i.e., statements that can be used in the valuation process or in a determination of certain economic damages. Normalization generally involves five broad categories of adjustments:

- For ownership characteristics (control versus minority);
- For GAAP departures, extraordinary, non-recurring and/or unusual items;
- For non-operating 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 under valuation is a minority or non-controlling interest. The fifth category is most often used to derive investment value.⁴

⁴ Note that making normalization adjustments to historical financial information to reflect expected strategic or synergistic benefits will change the standard of value to “investment” value rather than “fair market value.”



Thorny Issues with Applying the Income Approach

Note that by choosing to make certain normalization adjustments to the future economic benefit stream (i.e., the numerator), the valuation analyst can develop a control or non-control level of value. For example, in a privately held enterprise, it is not unusual for the controlling shareholder to take compensation in excess of fair value rates that might be paid for the same services to an independent party. Since the hypothetical “willing buyer” of a control ownership interest in such an entity could reduce compensation to market levels, it is often appropriate to add excess compensation to cash flow to reflect the additional economic benefits that would be available to that “willing buyer.”

While the scope of these materials does not include a detailed analysis of normalization adjustments, it is important to understand that, regardless of the benefit stream selected, normalization adjustments are an important and necessary part of the valuation procedures. Users of business valuation reports should specifically review any and all normalization adjustments made to the economic benefit stream, to evaluate the reasonableness of the adjustments and to discern the overall impact on the resultant cash flow benefit stream.

Defining Free Cash Flow

Free cash flow is defined differently depending on the method of the income approach selected. The characteristics of the beneficiary or recipient of the expected cash flows can be critical to valuation analysts. Over the years, finance, accounting and business valuation professionals alike have defined free cash flow differently, depending whether the desired free cash flows are those inuring to the benefit of the equity capital holders or those inuring to the invested capital holders.

Invested capital holders represent both equity capital holders and debt capital holders. We refer to these two groups, respectively, as the direct equity method and the invested capital method. Within the DCF method or a CCF method, the valuation analyst can elect to develop and rely on cash flows to the direct equity holders or the cash flows to the invested capital holders. Both methods, if applied properly should produce similar results.

The next sections present the components of free cash flow.

Cash Flow Direct to Equity (Direct Equity Method)

The cash flows using this method 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. The direct equity method requires that an appropriate discount rate to cash flows to equity be applied to those cash flows, i.e., the discount rate developed must match the defined economic benefit stream. No other discount rate is applicable.



Thorny Issues with Applying the Income Approach

The calculations used in this method can be illustrated as follows:

Normalized net income after tax
Plus: Depreciation, amortization and other non-cash 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

Cash Flow to Invested Capital (Invested Capital Method)

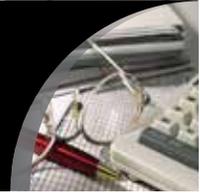
The cash flows here are those available to service invested capital, i.e., equity and interest-bearing debt. The cash flows exclude interest expense and debt principal payment. It is a debt-free model in the sense that all interests and related debt capital are removed.

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 valuation analyst subtracts the actual debt of the subject company from the value of invested capital to produce a value of equity capital.

Again, the invested capital method requires that a discount rate appropriate to cash flows for all invested capital be applied. No other discount rate is applicable.

The calculations used in this method can be illustrated as follows:

Normalized net income after tax
Plus: Interest expense (tax-affected)
Plus: Depreciation, amortization and other non-cash changes
Less: Incremental “debt-free” working capital needs
Less: Incremental capital expenditure needs
Equals: Net cash flow to invested capital



Thorny Issues with Applying the Income Approach

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

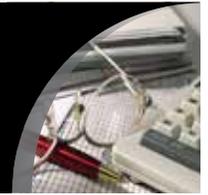
In each case, the valuation analyst uses normalized historical data, management insights and trend analyses to analyze formal forecasts for the explicit period. These forecasts take into account balance sheet and income statement items that affect the defined benefit stream and involve not only projected income statements, but also may include forecasted 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.

CCF Model versus DCF Model

As discussed in the previous chapter, the CCF method uses a single measure of the “expected” annual future economic benefit as a proxy for all future benefits. Under the DCF method, discrete “expected” future economic benefits are forecasted 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.

A valuation analyst must determine which of these methods most accurately aligns with the future benefit streams of the subject company. The primary difference in the two methods is the stability in future growth of the benefit stream. If the future benefit stream of a company is expected to grow in a linear fashion, the CCF methodology can be applied. In a CCF model, growth is incorporated into the capitalization rate (denominator) and is presumed to be constant into perpetuity. This is a critical assumption, but it is often appropriate.



Thorny Issues with Applying the Income Approach

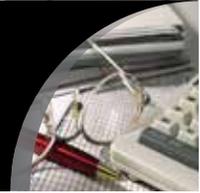
Alternatively, a valuation may involve a company that is either embarking on or involved in a period of rapid or uneven growth as of the date of valuation. This growth may be caused by a myriad of reasons including the introduction of a new product/service, expansion of geographic reach or the elimination of a significant competitor in the marketplace. Regardless of the specific circumstances, adequate consideration must be given to applying the most appropriate model under the income approach.

An area where issues can arise with respect to the numerator in applying the income approach is in the selection of a single-year (capitalization) model or a discounted cash flow model. Since a capitalization method assumes a stable long-term growth rate, it is likely that it will not accurately capture the impact of rapid or uneven growth experienced in the near- to mid-term. Using a capitalization method in this case could undervalue a company with near- to mid-term high growth and, in an uneven growth environment, it could fail to produce an accurate result. As such, where growth is erratic or non-linear in the near- to mid-term, the DCF is a more appropriate method to use in valuation.

As noted earlier in these materials, the DCF model involves forecasting a company's anticipated future cash flow streams on an annual basis. The forecasts are typically for five or more years during a rapid growth phase with a convergence of the final year of the forecast (known as the "stabilized year") with a long-term sustainable growth rate. Therefore, since value is based on the present worth of a future benefit stream, the closer in the future to the valuation date that the growth occurs, the greater the impact that cash flow will have on the present value of the business.

The critical skill in using the DCF method lies in the development of reasonable forecasts. Judges and triers of fact have been skeptical of the DCF method, maintaining that the past is the best proxy of the future, and forecasts are too speculative. Note that by capitalizing historical cash flow, however, we are, by definition, making a prediction about future results despite the fact that the operations and financial condition of the company is changing rapidly.

The selection of a model under the income approach is driven by the facts and circumstances specific to the subject company. Simply because a company may not have the personnel in place to prepare forecasts does not mean that the DCF model is precluded from being utilized. If the valuation analyst deems it appropriate to apply such a model, the management team of the company, with help from its accountants and the valuation firm, can work together to enable management to prepare forecasts that are representative of the future economic benefits of operating the company. The authors of this material have, in the past, provided templates to clients to enable them to input key assumptions that will form a set of forecasted financials.



Thorny Issues with Applying the Income Approach

Duration of Forecast Period

Once it is determined that a forecast will be used in connection with a valuation project, one issue that may arise is determining the duration of the forecast, i.e. how many years does the forecast need to encompass? In a typical DCF model, the valuation analyst will discount to present value the cash flow that the company anticipates to receive over a discrete period. This discrete period should include those years of non-linear growth until a year of ongoing stabilization is achieved. An issue often encountered is that the discrete forecast period has successive years of exceptionally high growth, in terms of revenue and income, and there is no consideration given to a leveling-off of the period of high growth in the later years of the discrete forecast period.

Many valuation analysts will request a five-year discrete period forecast, only to realize later that the forecast needs to consider additional years to approach more normalized growth rates. A forecast should include the appropriate number of years to illustrate the expectations of the non-linear growth years as well as when management of the company expects the growth rates to begin leveling off. It is not possible for a closely held company to continue to achieve 20% or greater growth year-over-year for an extended period of time.

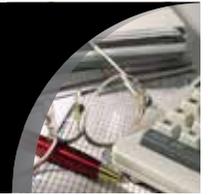
There are also circumstances in which a company is rebounding from poor performance years (for any number of reasons) and, therefore, a forecast may only need to be prepared for three or four years to establish the future trends after poorer performance years.

Once the proper number of years of the discrete period forecast is determined, the next step is the terminal year calculation. A DCF model will include a terminal year calculation unless there is a liquidation or exit event anticipated at the end of the discrete forecast period. The terminal value is “the present value of the stabilized benefit stream capitalized into the future.”⁵ The future is the company’s cash flow beyond the initial discrete (near-term) forecast. It is not uncommon for the terminal value to account for 50% or more of the total value of the subject company produced under the DCF method. The shorter the discrete forecast period in any DCF calculation, the greater percentage of total value that the terminal value calculation will produce.

Valuation analysts use numerous methods to calculate terminal value, however, these are beyond the scope of these materials. Note, that there are methods that can assist valuation analysts in bridging the gap between high-growth years and a stabilized year from which a terminal year value can be determined.

Understanding that the number of periods (or years) included in the forecast should be meaningful rather than arbitrary, is critical. Illogical levels of growth rates embedded in the forecasted cash flows or the terminal value, which are unsustainable, will lead to an incorrect conclusion in the DCF model.

⁵ *Understanding Business Valuation*, 4th edition, Gary Trugman (American Institute of Certified Public Accountants, Inc., 2012)



Thorny Issues with Applying the Income Approach

Quality and Validity of Forecasts of Future Benefits

The phrase, “garbage in, garbage out” definitely has meaning in the context of using forecasts in connection with the application of the income approach. The ability to forecast earnings and cash flow with accuracy in the out years of a discrete forecast period diminishes as the range of possible outcomes widens. One of the most common criticisms of DCF models is that any forecast beyond two or three years is suspect; leading to the assumption that investors in privately held businesses are in a better position using near-term forecasting. Conversely, erroneous assumptions in the early years of the forecast can amplify variances in later years.

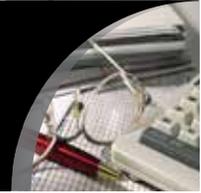
The quality of the underlying assumptions used to prepare a forecast is of critical importance in applying a DCF model. Each of the financial items related to the generation of cash flow including collection of receivables, personnel and fringe benefits costs, purchasing of raw materials and turnover of inventory, capital investment and loan repayments, to list just a few, must all be carefully considered and analyzed. Developing the assumptions underlying a financial forecast in a vacuum without consideration of specific company factors (including capacity and critical risks), as well as the outlook for the industry (including competitive landscape) and economy, will likely result in forecasts of future cash flow that are invalid.

The valuation analyst should review the forecasts and underlying assumptions prepared by management of the subject company for reasonableness prior to undertaking a discounted cash flow calculation. To provide an opinion of value that meets current professional standards, it is first necessary to intimately understand all of the qualitative information about the company’s management and its operations.

Again, if one thinks of stock pricing in the public stock market, a great deal of weight is placed on the judgment of stock analysts, whose job it is to keep abreast of historical, current and expected future management and operational events that might influence the subject stock’s value. These individuals are generally knowledgeable of a very broad spectrum of company-specific information.

This type of information is just as critical to the valuation analyst when determining the value of a privately held company. Intimately understanding where the company has been and where it intends to go requires the business valuation analyst to carefully assess all of the available information.

Knowledge of the company’s background and history should be used to determine the subject company’s competitive strengths and weaknesses, as well as its risks and opportunities. The valuation analyst should gather information regarding the subject company’s operations, customers, suppliers, competition, employees (including management structure) and any and all other information that may have an impact on value. It is nearly impossible to begin to develop a forecast of future expectations without having a sense of where the company has been and how it has come to be in its current state. This knowledge provides insight as to the reasonableness



Thorny Issues with Applying the Income Approach

of assumptions related to growth, based on current capacity and capabilities, or the necessity to make investments in technology, equipment or uniquely-qualified professionals.

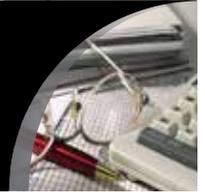
The valuation analyst will perform research to determine the outlook for the industry in which the company operates. Research should uncover key drivers for demand, historical and expected financial performance of the industry, barriers to entry, competitive landscape, typical cost structure of industry participants and overall industry outlook. This will provide key information and insight into expectations relative to industry growth, demand determinants, possible new industry and market entrants and whether specific sectors of the industry will outperform others. The valuation analyst will use industry information to the extent that it is relevant and applicable to the subject company in assessing the reasonableness of certain assumptions underlying the forecast.

General valuation theory requires that analysis of the economy be undertaken in conjunction with the determination of value. As value is forward-looking, it is incumbent upon an investor to consider current and forecasted economic conditions and their potential impacts on the subject company. Research relative to the economic outlook depends on the operations of the subject company, as the economy can be viewed from a global, national or regional perspective. The research undertaken for a local restaurant will differ significantly from a company with international sales and offices across the country.

The valuation analyst must gain an understanding of the industry in which the subject company operates to grasp where the company fits into the industry, as well as which industry factors are most relevant to the company. Research should be analyzed to evaluate how the subject company is affected by shifts in demand, changes in technology and shifts in the competitive landscape. Abundant sources of information are available to assist valuation analysts and interested users in gaining an understanding of the outlook for the economy as well as the industry in which the subject company participates.

An in-depth historical financial statement analysis should be performed prior to reviewing forecasts prepared by management of a company. Historical financial statements of the subject company should be gathered for at least five years (or a full business cycle). If the company has not been in business for five years, financial statements need to be obtained since inception.

Financial statements, which can be audited, reviewed, compiled or, in some cases, internally-prepared, should provide sufficient detail for analysis purposes; therefore, in the circumstance where the company's financial statements are in a summary format, a detailed general ledger should be obtained. The analysis of historical financial statements should include common-size (each item shown as a percentage of sales) and growth analysis of the company's income statements and common-size analysis (each asset, liability and equity shown as a percent of total assets) of the balance sheet to uncover anomalies and to track historical trends. The knowledge gleaned from this analysis should be insightful in determining the reasonableness of the assumptions driving the forecast.



Thorny Issues with Applying the Income Approach

In conjunction with undertaking the historical financial statement analysis and obtaining a working knowledge of the company history and background, interviewing key members of management is critical. The interview process provides the valuation analyst with more than one perspective regarding the outlook for the company, and it may provide greater detail on various aspects of the business.

Finally, the valuation analyst should request prior forecasts prepared by management. This will allow an assessment of how the company performance compared to what was forecasted. Generally, the valuation analyst will rely on the reputation of the individual or team preparing the forecast. More weight is generally placed on forecasts based on underlying assumptions, which include the input of operations and project managers in addition to financial professionals.

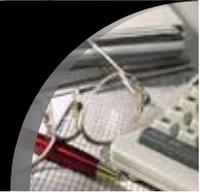
The aforementioned procedures, undertaken in conjunction with the application of the income approach and the process of valuing a company, can assist in identifying sources of economic value creation and destruction within the company. Assessing the reasonableness of management forecasts can be a daunting task; however, diligence in this process will result in a meaningful conclusion of value.

Note that there are occasions in which a valuation analyst may be unable to obtain all information necessary to arrive at a conclusion of value due to unavailability or other limitations on the scope of the work performed. In such instances, the parties may accept (or must accept under the circumstances) something less than a conclusion of value, as long as the valuation analyst is comfortable providing a qualified valuation based on the information obtained.

Issues and Mistakes

A sampling of some of the key issues and mistakes encountered in the use of the income approach generally, and, specifically, in the production of appropriate indicators of future economic benefits, include the following:

- Companies invariably must invest in the business via working capital, capital investment and head count in order to fund growth. Therefore, when sales are forecasted to increase dramatically without corresponding increases in working capital, headcount or purchases of machinery and equipment to support such growth, the annual cash flow being forecasted may not be valid. This can lead to an issue of overvaluing the company due to the lack of consideration of the cash outflow that must be expended to fund the growth necessary to achieve the forecasted higher sales levels.
- An issue arises when a company expects to invest in significant capital equipment over the discrete period without any consideration of debt financing. Typically, a company's cost of capital is weighted



Thorny Issues with Applying the Income Approach

between debt and equity capital. Therefore, large purchases of equipment would most often include some form of financing in addition to a use of operating cash flow. Failure to incorporate some level of debt financing and accompanying interest expense could result in an invalid conclusion of value.

- The forecast contains certain income or expenses associated with non-operating assets. These items should be removed from the forecast as the objective is to obtain cash flow resulting from the operations of the business. Typically, non-operating assets and liabilities will be removed in the “normalization” process and added back or subtracted from the operating value of the business. Thus, failure to properly consider these items could result in the overvaluation or undervaluation of a company.
- Management forecasts the same growth rate with regard to top line revenue, net income and free cash flow. This is rarely accurate as a company typically has fixed expenses (expenses that will be the same amount regardless of changes in the amount of sales) in the form of rent, insurance, depreciation, leases and management salaries. Therefore, as sales grow, more income should flow to the bottom line by virtue of the fixed expenses. Failure to account for fixed expenses will likely undervalue the subject company.
- Issues can arise when management forecasts are more goal-oriented. Typically, these forecasts are prepared to provide aggressive sales goals for members of the management and sales teams. Forecasts prepared for these purposes generally do not depict the “most likely” set of circumstances for the future. The forecasts and underlying assumptions for valuation purposes should reflect the most likely financial results going forward. Note that one methodology to produce the most likely financial results is to probability weight a set of aggressive forecasts with a set of conservative forecasts to achieve the most likely results. More sophisticated means include using a variety of statistical models.
- Neglecting to have an understanding of whether the cash flow being forecasted is available to a minority equity interest holder, a controlling equity interest holder or both can be problematic. Forecasted cash flow may not reflect modifications via normalization adjustments that result in the future benefit streams available to a control buyer of the common equity. Therefore, the valuation analyst needs to clearly understand the type of cash flow, which ultimately leads to conclusion on a specific level of value (i.e. controlling versus minority).
- It is a daunting task to prepare forecasts in circumstances where the subject company is in a start-up (or pre-revenue) or development stage. There is no history or proven track record established that would provide a basis for developing a set of underlying assumptions from which a forecast can be developed. There are models, including binomial lattice models and the Monte Carlo simulation, which allow the valuation analyst to see all possible outcomes of certain assumptions used in a forecast and to assess the impact of risk. Accepting forecasts from early-stage companies without any type of quantitative or qualitative verification will likely result in an invalid conclusion of value.



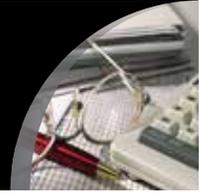
Thorny Issues with Applying the Income Approach

Final Thoughts

As should be obvious from this chapter, application of the income approach and, specifically, developing the numerator of the calculation, goes well beyond the simple formula cited herein.

It is the responsibility of the valuation analyst to assess the circumstances surrounding the company at the date of value in an effort to determine the proper method to apply under the income approach. The future economic benefit stream should be carefully constructed and analyzed to ensure a valid conclusion is ultimately achieved. The one overriding principle governing cash flow estimation is the need to match the forecasted cash flows to an appropriate discount rate.

The discount rate and/or capitalization make up the denominator in our valuation fraction. The next chapter of these materials will address many of the common issues relative to the development of the denominator in the income approach calculation.



Thorny Issues with Applying the Income Approach

V. Complexities and Issues Relating to the Denominator

The second part of the fundamental application of the income approach is to develop a risk rate appropriate for the expected future economic benefit stream determined under the processes discussed in the previous chapter. The risk rate carries with it several key elements that must be considered before it can be ascertained whether the result calculated under the income approach methodology is reasonable and correctly applied.

From a risk adjustment standpoint, there are three main categories of factors that may influence the capitalization or discount rate. Some specific factors affecting risk are listed below for each category.

External Factors

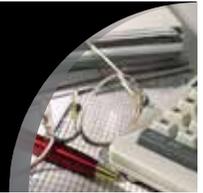
- Expectations of the general economy
- Existing conditions of the general economy
- Expectations of a particular industry
- Existing conditions of a particular industry
- Competitive environment of a particular industry

Internal Factors

- General expectations of the particular business being valued
- Financial position/condition of the business being valued
- Competitive position of the business being valued
- Size of the business being valued
- Nature of the business being valued
- Quality and depth of the organization and staffing of the business being valued
- Reliability or stability of the earnings of the business being valued

Investment Factors

- Risk factors associated with the investment itself
- Amount invested in the particular business, relative to other investments in the portfolio
- Expectations of capital appreciation of the investment
- Expectations of liquidity of the investment
- Level of the expected management burden of the investment



Thorny Issues with Applying the Income Approach

Most valuation analysts agree that each of the above factors theoretically impacts the determination of an appropriate discount or capitalization rate. However, there is no simple, generally accepted or practical way to quantify these factors.

Discount Rates and Capitalization Rates

The risk rate is most often defined as a discount rate in the context of valuing privately held businesses and interests in those businesses, as well as for economic damages and lost profits cases. As noted, the discount rate measures the expected risk of actually achieving the projected economic benefit streams in the amounts projected and at the dates that those economic benefit streams are expected to occur. In other words, a discount rate reflects the inherent risk in attaining the projected future economic benefit streams.

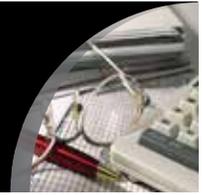
The use of a discount rate is limited to the DCF method under the income approach. As illustrated earlier, once determined, the discount rate is converted into a time-value-of-money factor, which is then applied to the expected future free cash flows by period. Because each period of a discrete projection varies, a separate present-value factor is used for each year. As a result, the process essentially looks at an amount of free cash flow due (or projected to be due) at a future date(s) and values those free cash flows, then at their present values.

As discussed, the DCF method is most appropriate in cases where growth over the near-term to mid-term is likely to vary. In these instances, a discrete projection period (perhaps 5-10 years) allows for varying growth expectations to be included in the benefit stream itself. By comparison, the alternative methodology, the CCF method, assumes that growth is even throughout the entire future life of the business.

To successfully calculate the value of a business or business interest under a CCF methodology, it is necessary to apply a capitalization rate. As was discussed earlier, a capitalization rate inherently has a relationship with a discount rate, but it is important to recognize that the two are not identical. The reconciling element between discount rates and capitalization rates is growth.

Growth is inextricably tied to the concept of value and must be considered in every exercise of this type. To convert a discount rate into a capitalization rate, all that is required is to subtract from the discount rate a proxy for long-term sustainable growth. Thus, if free cash flow is the selected future economic benefit being used to measure value, and if it is deemed that free cash flows are expected to grow by approximately 4%, then the discount rate should be reduced by that amount.

Note, that growth is accounted for differently in the two methods available under the income approach. In the DCF method, growth is considered in the expected future benefit stream, but in the CCF method, growth is considered in the capitalization rate itself.



Thorny Issues with Applying the Income Approach

By way of example, an equity capital discount rate might be 24%. If the growth rate is expected to be 4%, then the capitalization rate is 20%. As noted, the two are not identical and therefore, they are not interchangeable in the models.

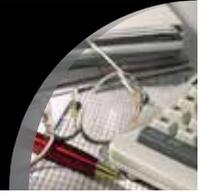
An interesting dichotomy between discount rates and capitalization rates is that the latter is directly observable in the markets, while the former is not. This market presence, although limited to capitalization rates, generally allows for some level of market confirmation of the rates developed by experts in the course of their assignments. Though the market information, and resultant confirmation, can be somewhat limited and less than perfect, it can often still serve a useful purpose as an outside reasonableness test for the determined rates.

Capitalization rates can also be verified as reasonable by comparing them with market multiples in the acquisition arena. Mathematically, a capitalization rate is the simple inverse of an acquisition multiple. Thus, if an acquisition multiple is four times cash flow, it equates to a fraction of $\frac{1}{4}$. The inverse of this fraction is, of course, $\frac{1}{4}$, suggesting a capitalization rate of 25%.

To illustrate, consider the following example. In the capitalization method, assume an expected future free cash flow of \$100,000 per year. If the parties were to apply a market multiple method and selected valuation multiple of four, as appropriate to that benefit stream, the result is \$400,000. Alternatively, if the CCF method under the income approach was applied and 25% was selected as the capitalization rate, the result would also be \$400,000 ($\$100,000/.25$). Effectively, then, both methods produce the same result.

The process of confirming the reasonableness of the capitalization rate either through direct market confirmation or via the use of completed transaction market approach multiples can be extended to the discount rate by simply reverse engineering the growth rate. If there is an observable comparable company in the marketplace with a capitalization rate of 15%, and if one is able to discern that the growth rate implicit in the observed capitalization rate is 4%, reversing the conversion process would require adding 4% to the observed capitalization rate of 15%. As a result, the discount rate would be 19%.

The discussion above is not intended to make experts of the participants in today's seminar. It is, however, intended to demonstrate that there are interrelationships among discount rates and capitalization rates, and that both can often be confirmed from available market data. Such should give those involved in a valuation or economic damages matter in a legal setting some comfort that they are NOT at the whim of expert reports as submitted. Again, while the market information is seldom perfect, too great a variance from this information can often lead to opening the door for factual challenge to the propriety of the information developed by the expert.



Thorny Issues with Applying the Income Approach

Basic Tenets of Risk Rates in Valuation and Economic Damages Matters

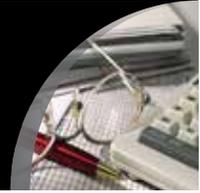
- The higher the risk rates, both discount rates and capitalization rates, the lower the computational conclusion. Higher identified investment risk is reflected by higher risk rates. By nature, it is expected that these higher risks will logically result in lower values and economic damages calculations.
- A capitalization rate is not the same thing as a discount rate.
- The sole difference between a capitalization rate and a discount rate is growth.
- Discount rates consider growth in the expected future benefit stream (the numerator) and capitalization rates includes growth in the risk rate (the capitalization rate, or the denominator).
- Capitalization rates are observable in the marketplace.
- Capitalization rates are the inverse of acquisition multiples.
- Most determinations of risk rates are based on economic models for developing a discount rate from which growth may be deducted to derive a capitalization rate.
- Both discount and capitalization rates can be developed specifically for determining the cost of equity capital or, alternatively, both equity capital and debt capital (more often referred to as weighted average cost of capital, or WACC).

Construction of a Discount Rate

The general technical aspects of developing a discount rate, and then converting that rate to a capitalization rate, were discussed previously and will not be repeated here. However, it is important to understand that these rates are almost always the result of expert development under a mechanical rate construction process. As such, an overview of that construction process and what is commonly accepted within the financial services industries, including those areas where expert judgment plays a more substantial role, is addressed below.

While numerous formulas and theories have evolved that enable the determination of the risk rates, there are three primary models that have become more accepted and common in usage. All three are based on the Capital Asset Pricing Model (CAPM), but due to limitations with that original model, the variations have become more commonly accepted in the valuation of privately held businesses and interests in those businesses.

The primary models used are the Modified Capital Asset Pricing Model (MCAPM), Build-Up Model (BUM) and Weighted Average Cost of Capital (WACC) Model. The WACC is really not a method for determining an equity rate but, rather, an overall invested capital risk rate encompassing both debt and equity capital.



Thorny Issues with Applying the Income Approach

Focus below will first be on the MCAPM and BUM methodologies. The MCAPM is primarily the same as the CAPM, excepting for the addition of additional risk factors for size and specific industry/company risk. The BUM is the most common methodology employed by valuation practitioners to estimate the future cost of equity capital for a privately held business. The formulas for each are as follows:

Modified Capital Asset Model

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

Where: K_e = Discount rate applicable to future cash flow

R_f = Risk-free rate (Treasury bond rates)

R_{pm} = Equity risk premium (market over risk-free rate)

B = Beta

R_{ps} = Risk premium for size, and

R_{pu} = Specific-industry/company risk

Build-Up Model

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

Where: K_e = Discount rate applicable to future cash flow

R_f = Risk-free rate (Treasury bond rates)

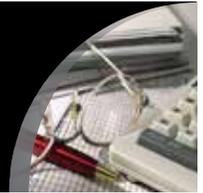
R_{pm} = Equity risk premium (market over risk-free rate)

R_{ps} = Risk premium for size, and

R_{pu} = Specific-industry/company risk

Note, that the only difference between the two models is the use of beta in the MCAPM, where none is used in the BUM. In function, a beta measures systematic risk. Systematic risk is that risk of market movements of particular stock or equity instrument against market movements for the market as a whole.

Comparisons of such market movements are based on a factor of 1. If the specific stock or equity instrument moves in perfect alignment to the overall market, it will have a beta of 1. However, if the specific company is more volatile than the market, it would have a beta greater than 1, denoting increased risk. Less volatility would result in a beta of less than 1 because it would be perceived to be less risky than the overall market.



Thorny Issues with Applying the Income Approach

In the BUM, there is a presumed beta of 1. If the stock is felt to have greater volatility than the overall market, the additional risk must be considered in the specific industry/company risk.

Due to the similarity between the two most common methodologies, all specific analysis in the following section regarding development of the discount rate will focus on the BUM.

When using the BUM to develop the appropriate risk 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 increased 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 (CRSP) Deciles Size Premia Study*, published annually in the Duff and Phelps (D&P) *Valuation Handbook*,⁶ using a supply-side model for estimating the equity risk premium.

The supply of stock market returns is generated by observing 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 currently 6.03%. This premium is added to the bond yield and produces an average market yield.

⁶ Duff & Phelps 2016 *Valuation Handbook*, Published by John Wiley & Sons, Inc.



Thorny Issues with Applying the Income Approach

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 \$1.963 million and \$209.406 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 5.6%.

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%, but higher adjustments may be valid when facts dictate. 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 BUILD-UP MODEL

Valuation date (February 10, 2017) long-term U.S. Treasury Bond Yield	2.75%
+ Equity risk premium – stocks over bonds	<u>6.03%</u>
Valuation date average company return	8.78%
+ Risk adjustment for size in relation to comparative companies	5.60%
+ Other risk factors specific to the company	<u>4.00%</u>
= CASH FLOW DISCOUNT RATE – EQUITY	<u>18.38%</u>

Weighted Average Cost of Capital (WACC)

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, and the net “after-tax” cost of debt in proportions that are representative of future expected debt/equity structures.



Thorny Issues with Applying the Income Approach

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.

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 3.75%. 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 3.75% 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:

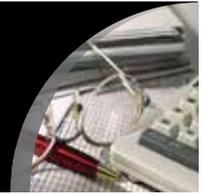
$$\begin{aligned}\text{After-tax borrowing rate} &= k_d (1 - t) \\ &= 3.75\% (1 - 35\%) \\ &= 3.75\% (65\%) \\ &= \underline{2.44\%}\end{aligned}$$

$$\begin{aligned}\textit{Where: } k_d &= \text{Cost of debt} \\ t &= \text{Tax rate}\end{aligned}$$

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 on the following page.

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 (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.



Thorny Issues with Applying the Income Approach

$$\begin{aligned} \text{WACC} &= (K_e * W_e) + [(K_{dpt} (1-t)) * W_d] \\ &= (18.38\% * 49\%) + [(3.75\% * (1- 35\%)) * 51\%] \\ &= 9.01\% + [(3.75\% * 65\%) * 51\%] \\ &= 9.01\% + (2.44\% * 51\%) \\ &= 9.01\% + 1.24\% \\ &= 10.25\% \end{aligned}$$

Where:

$$\begin{aligned} K_e &= \text{Cost of equity} \\ W_e &= \text{Weight of equity} \\ K_{dpt} &= \text{Pre-tax cost of debt} \\ t &= \text{Tax rate} \\ W_d &= \text{Weight of debt} \end{aligned}$$

Identification of Potential Issues

While each element of the construction of a discount rate requires some degree of subjective judgment, less judgment is required where third-party empirical information is available to be used as proxies for risk in any specific company. Certain sources of this information have become broadly accepted as reasonable proxies for the information and allow for some level of comfort in discount rate determinations from individuals using that information. However, care must still be taken to ensure that the developer of the discount rate has utilized the appropriate resources, and that the information has been determined correctly.

For example, the risk-free rate, as noted above, is generally taken as the spot rate trading on United States securities (Treasury bonds) with a 20-year investment period on the date of valuation or determination. Most often, this information is taken from the *Wall Street Journal* or the *Federal Reserve Bulletin*, and there is little room for misinterpretation.

The beta developed in the MCAPM is based on industry data collected from a variety of published sources and then adjusted for debt loads at the specific company versus the industry. The problem with beta determinations that must be overcome is the likelihood that each of the various services computes the industry betas in a different manner. As such, it is often necessary to reconcile beta differences from alternative sources prior to incorporation in the MCAPM.



Thorny Issues with Applying the Income Approach

Similarly, modifications to the discount rate (generally upward) for size premiums are based on published empirical information, but require modifications specific to the company under consideration in the valuation or the economic damages calculation.

Finally, the issue most pressing in any determination of a discount rate build up is that risk premium added for specific industry/company risk. A Company-Specific Risk Premium (C-SRP) is generally defined as, “the uncertainty of expected returns arising from factors other than those factors correlated with the investment market as a whole.” As no empirical information exists for this estimation, the amounts used are always totally subjective. This subjectivity leaves the determination open to challenge and modification.

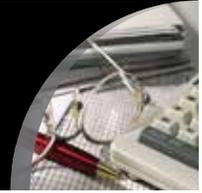
Chancellor Strine of the Delaware Court of Chancery, who presided over the *Delaware MRI* case (discussed further in the following chapter), expressed his opinions on the calculation of company-specific risk premiums:

The calculation of a company-specific risk is highly subjective and often is justified as a way of taking into account competitive and other factors that endanger the subject company's ability to achieve its projected cash flows. In other words, it is often a back-door method of reducing estimated cash flows rather than adjusting them directly.

...To judges, the company-specific risk premium often seems like the device experts employ to bring their final results into line with their clients' objectives, when other valuation inputs fail to do the trick.

The *Delaware MRI* case is the most direct example of the Courts' position as to the unreliability of this aspect of determining discount rates. While valuation analysts provide qualitative support for such adjustments, quantitative evidence measuring such premiums are rarely provided. Examples of such adjustments can include items similar to the following list, not all-inclusive:

- Concentration of customer base
- Key person dependence
- Key supplier dependence
- Abnormal present or pending competition
- Pending regulatory changes
- Pending lawsuits
- Other specific factors that exist, which could lead to an ending of the business



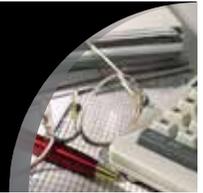
Thorny Issues with Applying the Income Approach

Final Thoughts

To summarize, the following actions should be taken to properly determine risk rates in a legal setting:

- Ensure that the discount rate matches the stream of economic future benefits for which it was intended
- Ensure that the real and nominal discount rates are properly matched with real and nominal expected future economic benefits
- Ensure that the risk-free rate is consistent with the time period under consideration
 - For valuation purposes, that rate is generally a 20-year Treasury bond rate
 - For economic damages, the rate will match the period for which damages are alleged
- If beta is being used (as in the MCAPM), use a number of alternative calculations to determine beta and reconcile mechanical calculations
- Ensure that geographic risk is included in the company-specific risk premium (this may be exceedingly important in foreign country projects)
- Test reasonableness of the discount rate determination by alternative means, and reconcile to market rates, if possible

Variations in discount rate determinations can have a profound effect on the answers produced under the income approach. Careful attention paid to the considerations noted above can lead to the proper determination of such rates and result in answers that are fair and defensible.



Thorny Issues with Applying the Income Approach

VI. Cases Illustrating Issues Addressed by the Court

The following is a compendium of cases in various courts and jurisdictions that have addressed the income approach. The cases that follow provide members of the legal community with a look at a variety of issues, with some more complex and detailed than others. Please note, that the cases are not intended to be all-inclusive.

More Support for Using More than One Method (DCF) in Current Valuations⁷

In re Chemtura Corp. (I), 2010 WL 4272727 (Bkrcty. S.D. NY.), October 21, 2010

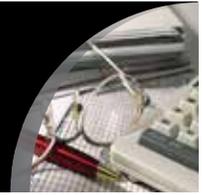
The Court found that the comparable analysis was more meaningful than the DCF approach and, therefore, assigned this method the greatest overall weight in the case, where business cyclicity, as well as economic uncertainty, weighed heavily on the value derived through the DCF approach.

The subject company was the Chemtura Corporation, a specialty chemical maker and its affiliates. In March 2009, the subject company filed for bankruptcy. A year later, the debtors of the corporation proposed a plan of reorganization and settlement of claims. No creditors objected, except the equity shareholders, who claimed it substantially undervalued the company.

The bankruptcy Court held an independent valuation hearing, in which both the equity committee and the debtors presented expert evidence of total enterprise value, and the creditors presented a rebuttal expert to critique their approaches. All of the experts were from large investment banking firms, which played various advisory roles during the restructuring.

- Both the debtors' expert and the shareholders' expert considered the income approach, as well as the market approach, in their analysis.
- Both experts used a discounted cash flow (DCF) analysis, with a similar range of discount rates. Both relied on forecasts provided by the debtors, which assumed the national economy would recover and the company's earnings would grow all five years of the forecast period.
- The experts differed significantly in their calculations of the terminal value. The shareholders' expert applied multiples to the earnings for the final forecast year, whereas, the debtors' expert applied multiples to normalized EBITDA.
- The experts debated the extent of the debtors' cyclicity, with the shareholders' expert claiming that using normalized earnings drove the value down. The debtors' expert claimed that using the final year forecasted EBITDA, which exceeded all historic levels, significantly inflated the value. The creditors' rebuttal expert, as well as the Court, shared this skepticism.

⁷ *More Support for Using More than One Method (DCF) in Current Valuations*. Business Valuation Update. January 2011. www.BVResources.com.



Thorny Issues with Applying the Income Approach

- The Court found that although, in most cases, it is more widely accepted to use the final year cash flow projections to calculate the terminal value, in this case, the effect of the slow economic recovery, coupled with the cyclical nature of the business, supported the use of adjusted cash flows. The best normalization analysis captures an entire business cycle, which the debtors' expert did not do, yet the Court found his analysis to be more persuasive due to the overall economic conditions at the time.
- Additionally, the Court was not happy that the shareholders' expert did not conduct a comprehensive analysis of comparable companies and transactions to provide an independent value indicator. Instead, he used the market approach merely to test the reasonableness of the DCF value.
- The Court found that the comparable analysis was more meaningful than the DCF approach and assigned this method the greatest overall weight in the case.
- The Court found that the debtors' analysis had substantial weight because it examined both domestic and foreign companies (operating in the same global markets and tax regulatory environments as the subject company). The shareholders' expert did not include any foreign comparables.
- Further, the shareholders' expert included two large multinational corporations in his analysis, but excluded a smaller specialty chemical company, which ultimately inflated the multiples. The debtors' expert excluded the large multinationals as well as the smaller company.
- Both experts conducted a sum-of-the-parts analysis, but the debtors' expert used the 2010 actual and projected numbers to derive his multiples, whereas, the shareholders' expert used the more reliable multiples derived from the 2011 earnings forecast.
- Both experts applied the comparable transaction approach. The debtors' expert reviewed deals conducted between 2004 and 2010, but due to the global economic crisis, only relied upon three transactions occurring after September 2008. The shareholders' expert only examined deals that closed prior to September 2008. Further, he did not use the derived multiples to develop a value; instead, he took his estimated total enterprise value range to back out certain EBITDA multiples. Since these back-calculated multiples were less than the average multiple, he concluded his value estimates did not exceed the debtors' actual value.
- The Court found the shareholders' expert's heavy reliance on pre-crisis transactions was a serious flaw, noting that advanced economies have changed and are fundamentally different. Thus, relying on multiples from a time period before the crash was inappropriate. Additionally, the Court found flaws with the comparables selected by the debtors' expert.
- The Court stated that if it had to find a specific value for the debtors, it would have chosen an amount at the low end of the debtors' range. However, since the purpose was to confirm the proposed reorganization plan as fair and reasonable, it needed only to find that the debtors' value did not exceed the value underlying the plan.



Thorny Issues with Applying the Income Approach

The following factors also influenced the Court's decision:

- During its restructuring attempts, the debtors cooperated with the equity committee in trying to find a buyer for the company, contacting nearly 20 potential investors using the committee's range of value. However, there were no takers or offers at that price, nor at any price that may lead to such a value. No members of the equity committee willing to invest their own money into the debtors at that, or even a lower, price.
- Under the proposed plan, the majority of creditors and bondholders elected to take their recovery in cash rather than company stock. These stakeholders were highly sophisticated hedge funds and other distressed debt investors with the ability to dispose of stock. If they thought the plan undervalued the company, they would have purchased the stock at the price offered by the equity committee. Their failure to do so, and their preference for cash, suggested they did not believe the stock was worth as much as the shareholders contended.
- The Court also found exceptional instances of witness bias in this case. The opinions of all the experts were influenced to some extent by their prior activities with the debtor, the circumstances under which they testified and inconsistent testimony.
- Similarly, both the debtors' and the creditors' experts received million-dollar fees upon the consummation of a plan. Although these fee provisions are fairly common ways to incentivize the investment bankers, the Court could not ignore the fees when the same bankers testified, finding that the payment terms materially and adversely affected the experts' credibility.
- Finally, both experts failed to change the midpoint of their valuations after the passage of time, and in the face of seemingly different circumstances, which the Court believed undercut the persuasiveness of each. In both cases, the Court found the coincidences were unlikely, prompting it to be more proactive in making its own valuation judgment, rather than to accept the proffered ones.

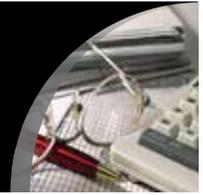
Ultimately, the Court found the proposed reorganization plan fair and reasonable. Further, the Court declined to disband the equity committee, leaving it intact to appeal the decision, if need be.

Perils of DCF without Good Expert Evidence⁸

In re Greater Southeast Community Hospital Corp. (III), 2012 Bankr. LEXIS 618, February 22, 2012

The Greater Southeast Hospital Corp. had filed for Chapter 11 bankruptcy. Subsequent controversy arose regarding the debtor's prior purchase of a hospital in 1998, which the trustee tried to recover as a fraudulent conveyance under federal and state law (Illinois).

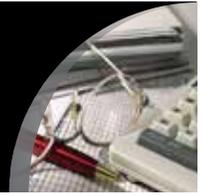
⁸ *Bankruptcy Court Exposes "Perils" of DCF Without Good Expert Evidence*. Business Valuation Update. May 2012.



Thorny Issues with Applying the Income Approach

The Court ultimately denied the trustee's claims under a ruling that the debtor had received "reasonably equivalent value" in exchange for the purchase price. The Court conducted its own DCF analysis based largely on the parties' expert valuations to support the conclusions. The trustee moved that the findings of the Court be reconsidered, as the DCF analysis contained four significant flaws.

1. **Double counting net working capital** – the trustee asserted that the Court had double counted net working capital by including it as an add back at the end of its calculations as well as incorporating it into its net free cash flow calculations.
 - The Court ultimately rejected this claim on the grounds that it had specifically excluded net working capital from its calculations as there was insufficient evidence regarding the hospital's historic collection rates. As such, the Court had elected to factor net working capital requirements into free cash flow on an accrual basis, emphasizing that "such future accounts receivable, not in existence on the transfer date, were distinct from the [\$20.7] million that was in existence." The trustee failed to provide any analysis that factored the \$20.7 million of net working capital in place into the income stream calculations.
 - The Court further acknowledged that it had not discounted the separate pre-existing net working capital to present value; instead, it had added it as a lump sum. The Court faulted the trustee and its expert for failing to provide a method or evidence that would permit for the appropriate adjustment for the time value of money.
 - Lastly, the trustee argued that the Court should not have added the existing net working capital figure on a dollar-for-dollar basis. However, the Court noted that the net working capital was not a typical non-operating asset because all of the costs of collecting the amounts had already been attributed to expenses associated with the hospital's collection department. As such, the Court found that it was appropriate to treat the asset similarly to excess cash with no liquidation costs, at a dollar-for-dollar basis.
2. **Marketability discount** – the trustee argued that a discount for lack of marketability should have been applied to the Court's valuation, citing various business valuation texts.
 - The Court responded that the texts cited referred to an ownership interest in a company, rather than "a set of assets purchased by a company." Under a fraudulent conveyance action, the question rests upon whether the debtor paid too much for the assets acquired, a separate consideration from what shares could be sold for.
3. **Professional fee expenses** – the trustee further argued that the Court had made an error in its calculation of variable professional fee expenses (i.e. payments for non-employee doctors).
 - The Court responded that any error was a result of the evidence (or lack thereof) presented at trial.



Thorny Issues with Applying the Income Approach

4. **Depreciation and amortization expense** – the trustee claimed that the Court had made an error in its calculation of depreciation and amortization expense in its terminal value calculation. The alleged error related to higher-than-normal depreciation expense related to one-time capital expenditures being capitalized in the terminal value calculation.
 - The Court responded that the trustee’s expert had identified the capitalized year as being the year of “stabilized operations” and that the trustee did not contend at trial, nor did the expert in his report, that depreciation should be adjusted nor that a later year should be used in the terminal value calculation. The Court ruled that it was improper to allow a new issue to enter in post-trial proceedings.
 - The Court further considered that adjusting the depreciation as requested would result in a value approximately 6.7% below the purchase price, which was not significant enough for the Court to alter its findings given the standard of value. The Court emphasized that the issue in fraudulent conveyance cases is “not whether fair market value was received” but, rather, “whether reasonably equivalent value was received.”

Ultimately, the lack of expert evidence left the Court to deal with a great amount of uncertainty. There was no testimony by anyone with expertise in hospital operations, and the Court admitted its own lack of expertise on the matter. However, the trustee bore the burden of proof. The Court ultimately denied the motion to reconsider.

Expert’s Solid DCF and Industry Research Sways Court⁹

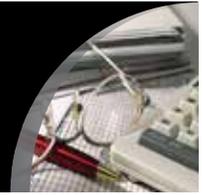
Wright v. Irish (Hudson Valley Clean Energy, Inc.), 2014 N.Y. Sup. Ct. Index No. 2111/2014, November 7, 2014

An expert’s valuation was discredited for many errors and lack of consideration of critical facts. Additionally, the Court found that “the law does not limit the DLOM to the goodwill of a corporation in all instances.”

In the early 2000s, two brothers-in-law formed a solar energy company that installed panels on houses and commercial properties in upstate New York. Due to federal government policies, they ran into early success, but by 2010 the market became flooded with competitors. Some competitors gained an advantage by offering leasing programs, which the company did not. Further, there was uncertainty regarding the duration of the tax incentives that the business was privy to. As a result, the company’s share of the market dropped substantially.

Friction between the owners ensued over the direction of the business. The petitioner did not agree with the proposed strategic growth plan adopted by the board, which called for expansion into new markets. He subsequently filed for dissolution of the company. The respondent and his wife (co-respondent) opted to buy out the petitioner following a fair value proceeding.

⁹ *Expert’s Solid DCF and Industry Research Sways Court*. Business Valuation Update. January 2015. www.BVResources.com.



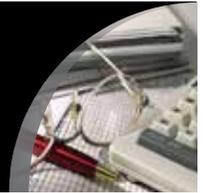
Thorny Issues with Applying the Income Approach

The petitioner's expert used both the income and market approaches for his calculation of value.

- The income approach relied upon the DCF method, in which he used the five-year projections that the management board had approved, but applied a company-specific risk premium to account for forecast risk.
- At the end of the forecast period, he reduced the growth rate to inflationary growth in the terminal value.
- He assigned the value derived from the DCF 75% of the weight.
- Under the market approach, he used a group of 12 guideline public companies that were operating in the same industry and facing similar risks as the subject company. To account for the fact that many of the comparables were much larger and more geographically diverse than the subject company, he used the lower quartile of values in calculating multiples for EV/EBITDA and EV/Sales.
- During cross examination, he acknowledged that there was an unnecessary EBITDA adjustment in the analysis due to a misunderstanding. However he was able to recalculate the equity value on the stand. He assigned this value 25% of the weight.
- He used a 21.4% DLOM, which he only applied to the company's goodwill.

The respondent's expert also used the income and market approaches, but his methodology was different.

- Under the income approach, he used the capitalization of weighted earnings method, which assumes the company would experience long-term, stable cash flow.
- During cross examination, he conceded that even though the company was profitable for years, its cash flows and earnings were not stable during the preceding four years.
- He did not include a growth rate, nor did he consider management's projections. He admitted that he was unaware of the growth strategy that had fueled the owners' dispute and that the board of directors had adopted. He also admitted that the DCF was his preferred approach.
- Under the market approach, he relied on actual closed transactions of companies that operated in the same sector as the subject company. He used an appropriate database, but did not follow the methodology that the database's user guide prescribed.
- He did not filter for profitability or closely held companies; instead, he chose comparables that were as much as 10 times smaller than the subject company and did not make appropriate adjustments.
- He proposed a 25% DLOM, applicable to the entire equity value. He also weighted the results of the two approaches.



Thorny Issues with Applying the Income Approach

The Court discredited the respondent's expert's valuation for its many errors, and lack of consideration of critical facts. Accordingly, the Court adopted the opinion of the petitioner's expert almost in its entirety. The point of disagreement was the DLOM – the question was not whether to apply a DLOM but, rather, if the DLOM was applicable to the entire equity value or just the goodwill value. The Court found that “the law does not limit the discount to the goodwill of a corporation in all instances,” and concluded that there was no reason to limit DLOM to the goodwill in this case. The Court adopted the petitioner's expert's 21.4% rate and applied the rate to the expert's proposed value.

Blindly Accepting Projections

Thomas E. Perez v. GreatBanc Trust Company, Sierra Aluminum Company and the Sierra Aluminum Company Employee Stock Ownership Plan, 5-12-cv-01648-R-DTB, June 2, 2014

The U.S. Department of Labor filed a lawsuit against GreatBanc Trust Company in relation to its violation of the Employee Retirement Income Security Act (ERISA) with respect to the Sierra Aluminum ESOP.¹⁰ The suit alleged that GreatBanc failed to adequately inquire into the report of the independent appraiser of Sierra Aluminum Company, which contained overly aggressive projections for the Company's future financial performance. GreatBanc failed to perform its fiduciary duty when it allowed the ESOP to pay more than fair market value for Sierra Aluminum stock.¹¹

As a result of the suit, the Department of Labor and GreatBanc reached a settlement, whereby, in addition to incurring significant financial repercussions, GreatBanc agreed to follow numerous protocols in its future dealings as a trustee to ESOPs.¹² As this agreement was entered into with the Department of Labor, the broader ESOP community would be wise to take into consideration the provisions set forth in the agreement as best practices for plan trustees reviewing independent valuation reports.

Some key provisions under the aforementioned agreement are focused on the following topics:¹³

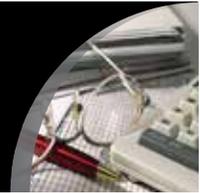
- Selection and Use of a Valuation Advisor
- Oversight of a Valuation Advisor
- Financial Statements
- Fiduciary Review Process
- Preservation of Documents
- Fair Market Value

¹⁰ US Labor Department sues to recover losses suffered by participants in employee stock ownership plan of California based Sierra Aluminum, United States Department of Labor. News Release. October 2, 2012.

¹¹ Ibid.

¹² Settlement Agreement. U.S. District Court Central District of California. *Thomas E. Perez, Secretary of the United States Department of Labor (Plaintiff) v. GreatBanc Trust Company, et al., (Defendants)*. Agreement Concerning Fiduciary Engagements and Process Requirements for Employer Stock Transactions (Exhibit A)

¹³ Ibid.



Thorny Issues with Applying the Income Approach

Issues in Estimating the Discount Rate¹⁴

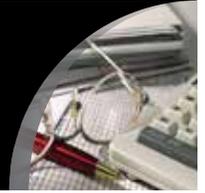
Bachrach Clothing, Inc. v. Edgar H. Bachrach, Bankruptcy No. 06-06525, Adversary No. 08-00726, October 11, 2012

In an Illinois bankruptcy case, two experts arrived at significantly different enterprise values using DCF models, despite beginning with the same set of cash flow projections. The difference was so severe, that the higher of the two enterprise value estimates was more than six times greater than that of the lower.

The Court noted that the large disparity shed light on the importance of verifying a valuation estimate using more than one approach. Further, the large difference in enterprise value using the same cash flow projections is evidence of a frequent criticism of DCF models, namely that the models can easily be manipulated to produce a desired output. As both experts utilized the same cash flow projection in this instance, the difference in enterprise values is largely attributable to each expert's calculation of the applicable discount rate.

- Further convoluting the review of each expert's analysis, it was apparent that the experts tended to select inputs that were favorable to their desired valuation outputs (higher vs. lower). In deciphering why the two expert's opinions on enterprise value differed so significantly, one of the experts identified the following three primary drivers specific to the discount rate:
 - Capital structure used to arrive at the weighted average cost of capital (WACC)
 - Estimation of the equity risk premium
 - Estimation of the size premium
- All three factors impact the discount rate (in this case, the WACC used to determine the present value of future cash flows). A lower WACC will create a higher enterprise value estimate than a higher WACC.
- The other two factors (the equity risk premium and size premium) are both used in determining the appropriate cost of equity. Higher estimates for both of these inputs will increase the cost of equity and will cause a proportional increase in the overall weighted average cost of capital.
- Due to differences in each experts' inputs used to calculate the WACC, the applicable discount rates used in each expert's discounted cash flow model were 19.5% and 11.0%.
- The Court ultimately favored the lower discount rate and higher valuation, noting that the expert with the higher discount rate had weaker supporting arguments for each of the above noted inputs.
- In relation to capital structure, it was noted that the expert with the higher discount rate had incorrectly used an industry average debt and equity ratio to determine the WACC instead of the subject company's specific capital structure. The application of an industry average capital structure was not backed up by any literature and was not well explained to the Court by the expert.

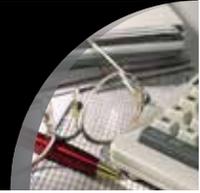
¹⁴ Memorandum Opinion. *In re: Bachrach Clothing, Inc. v. Edgar H. Bachrach, et al.*, Case No. 06-06525. Chapter 11. Hon. Pamela S. Hollis.



Thorny Issues with Applying the Income Approach

- As such, the company-specific capital structure was favored. Using the company's actual capital structure created a significant decrease in the company's weighted average cost of capital, from 19.5% to 12.3%.
- Moreover, it was noted that the expert with the higher discount rate had likely overstated the equity risk premium by using a longer historical period in deriving the parameter.
- The expert supported his longer historical period by referencing literature that stated although some analysts exclude earlier periods (1920s-1940s) from their estimates of the equity risk premium due to the occurrence of a significant number of unusual events, all periods contain unusual events and, as such, older historical periods should still be included. Thus, the expert felt the longer period was appropriate.
- The opposing expert noted that the shorter period was a better estimate of the equity risk premium as the underlying economic environment had changed in recent years due to globalization allowing for the international diversification of markets. The expert argued that the impact of globalization warranted a lower equity risk premium better reflected in the shorter historical time period. The expert using the longer historical period had not considered whether globalization would have changed the risk embedded in the current market.
- Both experts cited Aswath Damodaran, a valuation expert, to further support of the lower equity risk premium. Literature written by Damodaran supported an equity risk premium lower than that used by both experts, giving further validation for the lower of the two expert's proposed equity risk premiums.
- Lastly, both experts had relied on the same data set to determine the applicable size premium (used to approximate the additional risk inherent in smaller companies) in arriving at the cost of equity.
 - The expert who had arrived at the higher discount rate had selected a 9.80% size premium, while the other expert utilized a 4.02% size premium.
 - The difference was a result of the decile (based on market capitalization) the subject company fit into.
 - The expert with the higher discount rate estimate had used an estimate from a subset of the decile containing the smallest of the small companies, ultimately resulting in a higher size premium.
 - It was further noted that supporting literature for the size premium data stated that using the sub-decile would lower the statistical significance of the data input as compared to using the entire decile.
 - The expert with the lower discount rate used a size premium based on both the 9th and 10th deciles. He supported his election to use the 9th and 10th deciles through industry-specific strengths specific to the subject company that would suggest a lower size premium compared to the market in aggregate.
 - Using the estimate across both the 9th and 10th deciles was deemed a more statistically reliable estimate of the risk premium attendant to size for a micro-cap company.

This case highlights that the applicable discount rate can vary significantly from expert to expert. Logical and well-documented support for all inputs used in a valuation model are essential to its credibility.



Thorny Issues with Applying the Income Approach

À la Carte Valuation¹⁵

The Estate of Gallagher v. Commissioner, Docket No. 16853-08, T.C. Memo 2011-148, June 28, 2011

This decision provided insight into how the Tax Court views application of the DCF method and how to appropriately estimate the cost of capital (discount rate) used under that method. The Tax Court was presented with valuations performed by an IRS expert and a valuation expert hired on behalf of the taxpayer. Ultimately, both experts relied on the DCF method to some extent in arriving at their valuation estimates. However, their DCF methods differed from each other in several significant ways that were addressed directly by the Tax Court.

Projections

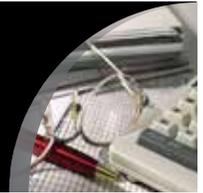
IRS Expert

- Revenue
 - Projected expected revenues using historical revenue growth trends that company management warranted as being reflective of expected future revenue growth; included a planned acquisition of a target by the company in projections
- Operating Income
 - Estimated operating income by applying a percentage of sales (derived from recent historical and budgeted financial information) to projected revenue
- Other Income
 - Elected to include other income in cash flow projections

Taxpayer's Expert

- Revenue
 - Projected revenue using a long-term average growth rate derived from comparable companies; did not include company's planned acquisition of a target company in projections
- Operating Income
 - Arrived at operating income projections by way of approximating overhead expenses, adjusting for historical self-insured insurance and increasing cost of goods sold, in an effort to capture the expected increase in newsprint costs expected to be borne by the subject company
- Other Income
 - Excluded other income in cash flow projections; added the subject company's over-funded pension balance to the company's enterprise value

¹⁵ *The Estate of Gallagher: Tax Court's Valuation is a Smorgasbord*. Katherine A. Gilbert and C. Ryan Stewart. Summer 2012 Insights. Willamette Management Associates. www.Willamette.com.



Thorny Issues with Applying the Income Approach

Tax Court Selection and Commentary

- Revenue
 - The Tax Court ruled in favor of the IRS expert's revenue growth forecast and inclusion of the planned acquisition, as the historical revenue growth of the company seemed to be a more reliable estimate of future growth; ruled that the inclusion of the planned acquisition was appropriate in estimating the expected future cash flow of the subject company
- Operating Income
 - The Tax Court favored the IRS expert's operating income margin but adjusted it by the depreciation assumption made by the taxpayer's expert; the underlying reason for ruling out the taxpayer expert's operating income assumptions was that the assumptions lacked sufficient support
- Other Income
 - The Tax Court adopted the IRS expert's inclusion of other income; felt that the taxpayer's expert had not sufficiently explained the calculation of the pension adjustment to enterprise value and had further failed to explain why the over-funded pension plan did not provide an annual cash flow benefit

Tax-Affecting Earnings

The subject company in the case had elected S corporation status and had no plans to terminate the election as of the date of valuation.

IRS Expert

- Elected not to tax the company's earnings

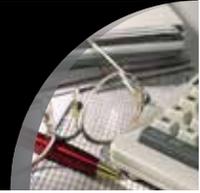
Taxpayer's Expert

- Elected to tax the company's earnings; used two different tax rates to tax-affect earnings and to calculate the after-tax cost of capital

Tax Court Selection and Commentary

- Noted, "Since most data on which stock valuation is based is derived from publicly-traded C corporations, appraisers may tax-affect an S corporation's earnings to reflect its S status in its stock value"¹⁶
- Further noted that the taxpayer's expert used a different tax rate to tax-affect earnings than to calculate the cost of capital attributable to the company and failed to explain the reason for the difference
- Ultimately, decided that the taxpayer's expert had failed to provide support for ignoring the benefit inherent in the S corporation election, and that tax-affecting was, therefore, unjustified and inappropriate

¹⁶ *Estate of Louise Paxton Gallagher v. Commissioner*, T.C. Memo 2011-148 (June 28, 2011) citing *Estate of Hendrickson v. Commissioner*, T.C. Memo 1999-278 (Aug. 23, 1999).



Thorny Issues with Applying the Income Approach

Normalization Adjustments

In arriving at projected cash flow, the experts differed in their opinions on incremental working capital and capital expenditure needs.

IRS Expert

- Relied on historical trends evident for the subject company to project working capital and capital expenditure needs

Taxpayer's Expert

- Made assumptions lacking sufficient support to project working capital and capital expenditure needs

Tax Court Selection and Commentary

- Adopted the projections estimated by the IRS expert for working capital and capital expenditures because the taxpayer's expert lacked sufficient support for his underlying assumptions

Cost of Capital Adjustments

Both valuation experts used a WACC to arrive at their discount rates. The Tax Court noted that they had previously held that the WACC was an inappropriate measure to apply to a small private company with little chance of becoming a publicly traded company. However, because both experts had used a WACC, its use was permitted. Consistent with the ruling on not tax-affecting earnings, the Tax Court deemed it inappropriate to tax-affect the WACC.

The experts further disagreed on the appropriate capital structure and cost of capital estimates (equity and debt) used to determine the WACC.

IRS Expert

- Cost of Equity
 - Estimated using the build-up method (BUM)
- Cost of Debt
 - Reviewed the company's historical pre-tax cost of debt, the average yield of Baa corporate bonds at the date of valuation, as well as several other industry and company-specific factors; estimated the cost of debt to be approximately 6.6%
- Capital Structure
 - Relied on the subject company's book values (debt and equity) as of the date of valuation; stated that a non-controlling shareholder (as was the instance in this valuation) would not be able to change the capital structure



Thorny Issues with Applying the Income Approach

Taxpayer's Expert

- Cost of Equity
 - Estimated using the capital asset pricing model (CAPM)
- Cost of Debt
 - Considered the company's historical cost of debt, financial condition and the interest rate environment; estimated the cost of debt to be 5.0%
- Capital Structure
 - Based the applicable capital structure on the capital structures of guideline companies that he had previously determined to be insufficiently comparable to the subject company in his rejection of the guideline publicly traded company method

Tax Court Selection and Commentary

- Cost of Equity
 - Elected to use the BUM, noting that the CAPM fails to capture the unique characteristics of closely held equity securities; disagreed with the IRS expert's company-specific risk premium used in the BUM; ultimately, adjusted the cost of equity capital downward from the IRS expert's estimate
- Cost of Debt
 - Selected the more-conservative 6.6% as a reasonable estimate for the subject company's cost of debt
- Capital Structure
 - Concluded that capital structure should be determined by using market values; as the subject company did not have readily available market values to use in determining the capital structure, Tax Court ruled in favor of using book values; did not provide any weight to the capital structure provided by taxpayer's expert as it was contradictory to his stance on the guideline public company method

Delaware Chancery - Merger Price¹⁷

Huff Fund Investment Partnership v. CKx, Inc. (II), 2014 Del. Ch. LEXIS 82, May 19, 2014

The Delaware Court of Chancery found that the merger price, rather than the value resulting from the DCF analysis, was the most reliable indicator of the fair value of the subject company.

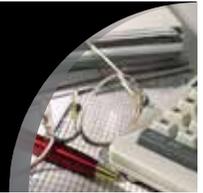
- Subject company was a publicly traded company that owned entertainment assets, including a business with rights to *American Idol* and *So You Think You Can Dance*.

¹⁷ DE Chancery Plumbs Merger Price for Speculative Value Elements. Business Valuation Update. August 2014.



Thorny Issues with Applying the Income Approach

- *American Idol* had been on the decline for several years and, around the time of the merger, the contract in place with Fox was set to expire. However, the company had limited ability to use leverage in its negotiations, as Fox had a perpetual license to renew its contract to broadcast the show.
- The company hired a financial advisor that ultimately deemed the transaction price of the merger to be fair. However, certain stockholders refused to take the cash-out price resulting from the sale and asked the Chancery for an appraisal.
- At trial, the valuation appeared to hinge on the reliability of management's five year projections, which made the assumption that revenues under the yet-to-be negotiated *American Idol* contract would increase by approximately \$20 million per year.
- The parties disagreed as to whether the revenue projection was a true prediction of future revenue or merely a marketing ploy used in an attempt to generate a higher bid.
- The petitioner's expert included the revenue amount in his DCF analysis and developed a comparables analysis, while the company's expert excluded the revenue amount in his DCF calculations.
- The Chancery dismissed the comparables analysis and also found that both expert's DCF analyses were unreliable, citing that DCF models may produce meaningless values without reliable projections.
- The Court considered the merger price to be reflective of the outcome of a sales process that was "thorough, effective, and free from any spectre of self-interest or disloyalty."
- The Court did not find material evidence of any improper synergy value embedded in the sales price, but allowed the parties the opportunity to discuss the issue if desired.
- Both parties argued for adjusting the merger price, but in opposite directions.
 - The respondent claimed the price should be lowered because it contained synergistic elements related to cost savings. The petitioners objected to lowering the price for cost savings, as the cost savings were not value that was uniquely available to the acquirer. The Court ultimately ruled that there was not sufficient evidence to determine if the price was based on the expected realization of merger-specific cost savings.
 - The petitioners took the stance that an upward adjustment was necessary to account for value resulting from post-merger acquisition and "unexploited revenue opportunities" that were in place at the time of the merger but not reflected in the merger price. The Court declined this adjustment, citing that the buyer potentially knew of the unexploited revenue opportunities, and there was no evidence that the other market participants did not receive the same information in their due diligence.
- Ultimately, the Chancery declined to adjust the merger price.



Thorny Issues with Applying the Income Approach

Company-Specific Risk Premium¹⁸

Delaware Open MRI Radiology Associates, P.A. v. Howard B. Kessler et al. (Court of Chancery of State of Delaware, Cons C.A. No. 275-N), 2006 Del. Ch. LEXIS 84, April 26, 2006

This case highlighted subjective issues arising in developing estimates of the cost of capital. The purpose of the case was to determine whether the minority shareholders had “received fair value in a squeeze-out merger with an acquisition vehicle of the majority stockholders.”

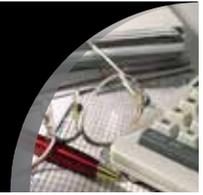
- The majority and minority shareholders each hired valuation experts to develop opinions on the value of the company to be used in evaluating the fairness of the merger price.
- Both valuation experts relied on DCF analysis to arrive at their opinions of value. Although each expert’s DCF model differed in several respects, the decision highlighted the subjective nature of developing cost of capital estimated for small privately owned companies.
- Specifically, the decision describes the inherent issues in estimating the appropriate cost of capital:

Delaware Radiology is a small, privately owned entity. As shall be seen, using even an income-based approach such as a DCF model to value such an entity has its challenges, principally in the area of calculating a proper cost of capital. In this situation, the absence of both market information about the subject company and good public comparables force the court to rely even more than is customary on the testimonial experts.

...Even as to public companies, there is much dispute about how to calculate the discount rate to use in valuing their future cash flows, even when one tries to stick as closely as possible to the principles undergirding the capital asset pricing model and the semi-strong form of the efficient capital markets hypothesis. Witness the serious academic debate about whether the so-called size premium received by investors in smaller public companies is a durable indicia of their greater risk, or whether there are attributes of stocks with a low book-to-market ratio that require the consideration of that factor in estimating a discount rate. And not all public companies have a sufficient public float for trading in shares to provide a reliable beta for use in calculating their cost of capital, forcing a resort to the use of data from the industry or so-called comparable companies.

Situations like this one inspire even less confidence, when experts are required to calculate a cost of capital for a very small, non-public company, for which neither of the experts has identified reliable public comparables. In this context, the ability of the experts or the court to hew literally to the teaching of the high church of academic corporate finance is essentially non-existent. At best, the experts and the court can express their reverence by trying to come up with a proxy that takes into account concerns addressed by CAPM and ECMH.

¹⁸ Court of Chancery of Delaware, New Castle County. *Delaware Open MRI Radiology Associates, P.A., Petitioner, v. Howard B. Kessler, et al., Respondents. Howard B. Kessler, et al., Plaintiffs, v. George J Broder, et al., Defendants.* C.A. No. 275-N.



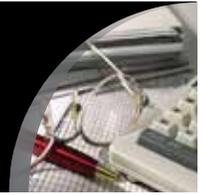
Thorny Issues with Applying the Income Approach

- In the instant case, both experts elected to use the build-up model (BUM) to develop their estimates of the subject company's cost of equity capital. Although the BUM is a widely-applied model used to determine estimates of the cost of equity capital, it suffers from several limitations that result in the need for subjective quantification of risk. The case decision highlights these issues as follows:

The build-up model begins with the core factors considered by CAPM, a risk-free rate and an equity premium rate. From there, however, the build-up model begins to diverge from CAPM. Under the build-up method, beta is not considered. A size premium, used consistently with the practice of most current users of CAPM in the appraisal and valuation context, is de rigueur under the build-up model. Much more heretical to CAPM, however, the build-up method typically incorporates heavy dollops of what is called "company-specific risk," the very sort of unsystematic risk that the CAPM believes is not rewarded by the capital markets and should not be considered in calculating a cost of capital.

- Although it was noted that, "Neither [expert] explained their estimates with any confidence-inspiring precision," the decision ultimately favored the expert whose analysis was perceived to be more reliable.
- In citing strengths of the methodology employed by the selected expert, the Court noted that the approach to calculating the discount rate more effectively incorporated the logic used in the CAPM in an instance when the CAPM could not be applied in its pure form. Specifically, the selected approach was perceived to have correctly captured the following risk elements:
 - Inclusion of a small stock premium (consistent with significant amounts of academic and practitioner thinking on the CAPM)
 - Inclusion of industry-specific risk (viewed as being a fair proxy for beta under a circumstance where beta cannot be measured directly)
- Regarding the use of a company-specific risk premium, the decision states that while the quantification of the selected expert's 2.0% company-specific risk premium cannot be explained by reference to objective factors, its inclusion will not be objected to as it reinforces the conservatism of the expert's final cost of capital.

The decision's discussion provides insight into the subjective nature and potential manipulation evident in arriving at a cost of capital estimate. Moreover, it is clear that in litigation circumstances, client specific interests may create pressure to swing the direction of the subjective adjustments made by an expert in favor of their client.



Thorny Issues with Applying the Income Approach

VII. Conclusion and Practical Considerations

In view of the many different items discussed today, it can be difficult to reduce the information back to the simple fraction discussed throughout the program. However, that is the easiest means to fully understand the income approach and exactly how the methods under that approach interact mechanically.

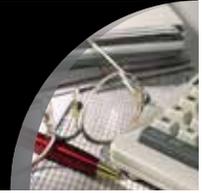
As with all complex matters, the devil lies in the details. Proper use of the income approach is no exception. There can be little debate that the income approach presents significant room for promoting the position of one party or another in any pending transaction or litigation setting. That manipulation tends to drive a great deal of the controversy, whether the matter is valuation-related or whether it is related to a determination of economic damages. 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.

On the other hand, no other approach available to valuation analysts offers as more direct a relationship to expected future returns than the income approach. Human nature, and common sense, drive home the point that investors expect a return that is commensurate with the risk inherent in any particular investment. Applying such a logical thought process to the determination of value or economic damages in a legal setting is akin to aligning results with “real world” transactions. Buyers in the mergers and acquisitions market look most closely at the future economic performance of acquisition targets in developing offer prices for such targets. The set prices incorporate the perceived risk of that target for some expected holding period. The income approach simply attempts to bring real-life evaluation techniques into the courtroom.

Careful and well-thought input into the modeling process is imperative to produce a result that is defensible, as well as reasonable and appropriate, under the facts of the case. One need only consider the effect of improperly modifying, if one dares, the future expected benefit streams in one direction or the other to influence the conclusions. Moreover, the ability to increase or decrease risk within the cost of capital determinations, as well as the projected 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 financial analysts and valuation analysts, as well as with users of business valuation reports.

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



Thorny Issues with Applying the Income Approach

Finally, it should be noted that the acceptance income approach as an appropriate approach from which value is determined has grown significantly in the litigation arena. 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 possible under 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.

Thank you again for attending this morning's presentation. Please feel free to contact Bob Grossman, Melissa Bizyak or Brad Matthews with questions.

Have a great day!