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Certified Public Accountants and Consultants

***Business Valuation: Essential Approaches &
Current Perspectives – Income Approach***



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Business Valuation: Essential Approaches & Current Perspectives – Income Approach

INTRODUCTION



Basics of the Income Approach & Current Perspectives

INTRODUCTION

- ***Fundamental precept of valuation:***
 - All value is “forward-looking”
 - Determined by expectations of future performance
 - Measured through estimates of expected future economic benefits, which must be tempered by the risk associated with realization
- ***Income approach is simplest way to determine future economic benefit streams as well as the associated risk assessment***



Basics of the Income Approach & Current Perspectives

INTRODUCTION

- ***To properly determine value, as much external, supportable information as possible should be considered***
- ***Financial forecasts and analyses can be manipulated and interpreted in various ways, leading to wide variances in conclusions***
- ***Risk rate determinations can also lead to a wide range of calculation results based upon inputs and models used***



Basics of the Income Approach & Current Perspectives

INTRODUCTION

- ***This program will cover the following topics***
 - Basics of the Income Approach
 - Complexities and Issues Relating to the Numerator
 - Complexities and Issues Relating to the Denominator
 - Conclusion and Practical Considerations



Business Valuation: Essential Approaches & Current Perspectives – Income Approach

INCOME APPROACH BASICS



Basics of the Income Approach & Current Perspectives

INCOME APPROACH BASICS

- *All value is “forward-looking” – based on economic principle of anticipation*
- *Primary drivers for calculating value:*
 - Numerator: Future expected economic benefit stream
 - Denominator: Risk associated with realization of future economic benefits
- *Rate of return incorporates investor expectations, which include:*
 - “Real” rate of return: essentially rent paid for use of funds
 - Expected inflation: time-value of money
 - Risk: uncertainty of timing and amount of return on investment
- *Past performance has little to no relevance*



Basics of the Income Approach & Current Perspectives

INCOME APPROACH BASICS

▪ *Methodologies*

- Capitalized cash flow (CCF) method
 - Single calculation with growth presumed to be constant
- Discounted cash flow (DCF) method
 - Series of calculations over discrete period with terminal value



Basics of the Income Approach & Current Perspectives

INCOME APPROACH BASICS

▪ *Application of the CCF method*

- Select benefit stream and construct selected benefit stream on a year-by-year basis
- Make normalization adjustments, as necessary
- Choose selected weighted economic benefit stream as base
- Calculate discount rate and convert to a capitalization rate
- Divide economic benefit stream by capitalization rate to produce value of the operating enterprise
- Add or subtract non-operating assets and liabilities



Basics of the Income Approach & Current Perspectives

INCOME APPROACH BASICS

▪ **CCF Formula:**

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

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



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INCOME APPROACH BASICS

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	1.04
Year 1 cash flow	1,040
Capitalization rate	.20
Value Result	<u>\$ 5,200</u>



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INCOME APPROACH BASICS

- ***Two components of DCF method***
 - Discrete period forecast
 - Terminal period
 - Terminal value is extremely important as it typically represents a substantial portion of total value of an entity



Basics of the Income Approach & Current Perspectives

INCOME APPROACH BASICS

- ***Application of the DCF method***
 - Select benefit stream and construct discrete period forecast of the selected benefit stream on year-by-year basis to a point of stabilization
 - Determine terminal value
 - Calculate discount rate to match the selected benefit stream
 - Discount discrete period economic benefit streams and terminal year to present value
 - Add/subtract non-operating assets and liabilities



Basics of the Income Approach & Current Perspectives

INCOME APPROACH BASICS

▪ **DCF Formula:**

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

- 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



Basics of the Income Approach & Current Perspectives

INCOME APPROACH BASICS

▪ **The formula can be expanded:**

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



Basics of the Income Approach & Current Perspectives

INCOME APPROACH BASICS

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:

Projected year	1	2	3	4	5	Terminal yr*
Cash flow (CF)	1,040	1,082	1,125	1,170	1,217	6,327
Present value factor	.8065	.6504	.5245	.4230	.3411	.3411
Discounted cash flow	839	704	590	495	415	2,158
Value Result (rounded)	\$ 5,200					

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



Basics of the Income Approach & Current Perspectives

INCOME APPROACH BASICS

- **Current Issues – DCF vs. CCF**
 - Method should be selected based upon future growth expectations of the benefit stream
 - DCF more accurately calculates the value of a business which expects to experience non-linear growth in its benefit stream
 - During volatile times, a CCF may not accurately incorporate short-term financial difficulties and non-linear growth
 - In venues where CCF is preferred, adjustments must be considered to strengthen valuation calculations



***Business Valuation: Essential Approaches &
Current Perspectives – Income Approach***

COMPLEXITIES AND ISSUES
RELATING TO THE NUMERATOR



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE NUMERATOR

- ***Value is predicated on the present worth of an anticipated series of future income streams***
 - What economic benefit does the buyer receive as a return on investment after accounting for risk?



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE NUMERATOR

- ***Most common definitions for future economic benefits:***
 - Net income: measure of an entity's operating performance; can be pre-tax or after-tax
 - Free cash flow: generally represents the amount of cash that can be distributed to equity owners without threatening or interfering with future operations
- ***In many small companies, these are similar or the same***



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE NUMERATOR

- ***Normalization adjustments***
 - Made by valuation analyst to information provided on income statements and/or balance sheets
 - Goal is to present information on the basis that a potential investor could expect to receive as return



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE NUMERATOR

▪ *Common normalization adjustments made for:*

1. Ownership characteristics (control v. minority)
 2. GAAP departures, extraordinary, nonrecurring and/or unusual items
 3. Non-operating assets and liabilities; related income and expenses
 4. Taxes
 5. Synergies from mergers and acquisitions
- Generally, the second, third and fourth categories are made in every valuation



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE NUMERATOR

▪ *Defining Free Cash Flow*

Direct Equity

Normalized Net income after tax
Plus: Depreciation/amortization,
other non-cash changes
Less: Incremental working capital
Plus: New debt principal
Less: Repayment of debt principal
Equals: Net cash flow to direct equity

Invested Capital

Normalized Net income after tax
Plus: Interest expense (tax-affected)
Plus: Depreciation/amortization,
other non-cash changes
Less: Incremental "debt-free"
working capital
Less: Incremental capital expenditures
Equals: Net cash flow to invested capital



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE NUMERATOR

- ***Duration of Forecast Period***
 - Discrete period should include years of non-linear growth until a year of stabilization is achieved
 - Typical 5-year forecast may not work – number of periods should be meaningful rather than arbitrary
 - After discrete period is determined, the next step is the terminal year calculation



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE NUMERATOR

- ***Quality and Validity of Forecasts of Future Benefits***
 - Ability to forecast with accuracy in out years diminishes as range of possible outcomes widens
 - Valuation analyst should review forecasts and underlying assumptions for reasonableness:
 - Understand Company background and history
 - Analyze the industry and economy
 - Perform an in-depth historical financial statement analysis
 - Undertake site visit and interview key members of management



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE NUMERATOR

▪ ***Current Issues - Numerator***

- Does the financial forecast consider all impacts of COVID pandemic
- Does the duration of the forecasts reach a point of stabilization
- What normalization adjustments must be made
- What one-time factors must be considered (ex. the impact of PPP funds on cash flow and tax liability)



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE NUMERATOR

▪ ***Current Issues - Numerator***

- What information should be incorporated to the forecast – what was known or knowable
- Should multiple iterations of the forecast be prepared
- What will economic recovery look like and how will it impact the future cash flows



***Business Valuation: Essential Approaches &
Current Perspectives – Income Approach***

COMPLEXITIES AND ISSUES
RELATING TO THE DENOMINATOR



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE DENOMINATOR

- ***3 main categories that influence capitalization or discount rate***
 - External Factors
 - Internal Factors
 - Investment Factors



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE DENOMINATOR

- ***Discount Rates and Capitalization Rates***
 - Risk rate is defined as discount rate in context of valuing privately-held businesses and interests in those business as well as economic damages and lost profits cases
 - Discount rate reflects risk in attaining projected future economic benefit streams
 - Discount rate is limited to DCF method under income approach
 - DCF method is most appropriate in cases where growth over near-term to mid-term could vary



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE DENOMINATOR

- ***Discount Rates and Capitalization Rates***
 - Under CCF, to calculate value of a business, it is necessary to apply a capitalization rate
 - Capitalization and discount rates are related by growth factor, but are NOT identical
 - Under DCF method, growth is considered in the forecasts
 - In CCF, growth is considered in the capitalization rate itself



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE DENOMINATOR

▪ ***Basic Tenets of Risk Rates***

- Higher the risk rates, the lower computational conclusion
- Discount rates consider growth in expected future benefit stream and capitalization rates includes growth in risk rate
- Capitalization rates are observable in marketplace
- Capitalization rates are inverse of acquisition multiples



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE DENOMINATOR

▪ ***Construction of a Discount Rate***

- Three primary models
 - Discount Rates Applicable to Equity Cash Flows:
 - Modified Capital Asset Pricing Model (MCAPM)
 - Build-Up Model (BUM)
 - Discount Rate Applicable to Invested Capital Cash Flows:
 - Weighted Average Cost of Capital (WACC)



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE DENOMINATOR

■ *MCAPM vs. BUM:*

$$\text{MCAPM } K_e = R_f + \beta R_{pm} + R_{ps} + R_{pu}$$

$$\text{BUM } K_e = R_f + R_{pm} + R_{ps} + R_{pu}$$

Where:

- K_e = Discount rate applicable to future cash flow
- R_f = Risk-free rate (Treasury Bond rates)
- β = Beta
- R_{ps} = Risk premium for size, and
- R_{pu} = Specific-industry/company risk



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE DENOMINATOR

■ *Construction of a Discount Rate*

– BUM

- When using BUM to develop the appropriate risk, the rate used to discount the expected future cash flows to present value is the estimated rate of return currently available in the market or alternative investments with comparable risk
 - Risk-free rate is developed by starting with 20-year U.S. Treasury Bond yield as of the date of valuation
 - Premium is then added to compensate for differences between average market returns in the stock market and investments in “safer” Treasury bonds



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE DENOMINATOR

▪ *Example of computation of a discount rate under the BUM*

Valuation Date (August 31, 2020) long-term U.S. Treasury Bond Yield	1.26%
+ Equity risk premium - stocks over bonds	<u>6.17%</u>
Valuation date average company return	7.43%
+Risk adjustment for size in relate to comparative compaines	4.99%
+Other risk factors specific to the subject company	<u>5.00%</u>
= CASH FLOW DISCOUNT RATE - EQUITY	<u>17.42%</u>



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE DENOMINATOR

▪ *Weighted Average Cost of Capital (WACC)*

- Combines the cost of equity (determined by the BUM), and the net “after-tax” cost of debt in proportions that are representative of future expected debt/equity structures
 - First step in determining WACC is to develop cash flow discount rate applicable with holding an equity capital positon in the company
 - Second, identify company's borrowing rate at the date of the valuation
 - Third, apply appropriate weights to equity capital and the debt capital to produce weighted average cost of capital



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE DENOMINATOR

▪ *Weighted Average Cost of Capital (WACC)*

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

Where: K_e = Cost of equity
 W_e = Weight of equity
 K_{dpt} = Pre-tax cost of debt
 t = Tax rate
 W_d = Weight of debt



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE DENOMINATOR

▪ *Current Issues - Denominator*

- Determining level of risk associated with benefit stream
- Current rates/Flight to quality
- Focus should be on long-term required rate of return
- How sensitive is 'answer' to changes in discount rate



Basics of the Income Approach & Current Perspectives

COMPLEXITIES & ISSUES RELATING TO THE DENOMINATOR

■ *Current Issues - Denominator*

- Adjusting the Denominator: Company-Specific Risk Premium
 - Subjective Input to Discount Rate Calculation
 - During uncertain times, may be more than just company-specific
 - COVID risk premium? Must match benefit stream



Business Valuation: Essential Approaches & Current Perspectives – Income Approach

CONCLUSION AND PRACTICAL CONSIDERATIONS





Basics of the Income Approach & Current Perspectives

CONCLUSION AND PRACTICAL CONSIDERATIONS

- Income approach offers direct relationship to expected future returns
- How is business risk being considered—numerator, denominator?
- Try to determine when the business will get back to ‘normal’
- Select model that most accurately matches future expectations of the subject company
- No crystal ball - must consider the best available information at the date of valuation



Business Valuation: Essential Approaches & Current Perspectives – Income Approach

THANK YOU!

