Appraisal of Equity

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Banja Luka, 10-11 December 2004

I
Appraisal Theory

Appraisal Theory

BASIC CONCEPTS

- **PRICE – Cash amount requested, offered, or paid for goods or service**

- **COST – Price paid for goods or service, or amount necessary to produce (provide) goods or service**

- **VALUE – Economic concept: price most likely to be established between buyer and seller for goods or service traded. Value is not a fact, but an estimate related to respective moment in time**

Appraisal Theory

- **PROPERTY – legal concept; includes any interests, rights, and uses resulting from ownership over property**

- **ASSETS – Accounting concept; resources used by a company as a result of past events, and which are expected to bring benefits in the future**
  - **➔ Ownership over assets is non tangible by nature**
  - **➔ Assets can be tangible and intangible**

- **UTILITY – Economic concept; relative concept often measured by productivity, and always monitored for longer periods of time**

Appraisal Theory

What is appraisal of value?

- **Appraisal of value of company represents decision making on value of a subject company at certain moment in time, and is based on:**
  - ➔ **Understanding of past, current, and future operations of the company;**
  - ➔ **analysis of economic environment in which the company operates;**
  - ➔ **analysis of industry in which the company competes;**
  - ➔ **analysis of financial information of the company, and**
  - ➔ **implementation of appropriate appraisal methods in order to reach logical results in appraisal of the value of the company**

Appraisal Theory

- **Appraisal implies implementation of**
  - **➔ methodology**
  - **➔ standards**
  - **➔ ethical rules**

Appraisal Theory

APPRAISAL STEPS

- Definition of engagement
- Data gathering
- Data analysis
- Selection of an appraisal method
- Implementation of the appraisal method
- Making conclusions on value
- Writing/presentation of the report

Appraisal Theory

DEFINING (ENGAGEMENT) APPRAISAL

- Subject of appraisal
- Date of appraisal
- Purpose of appraisal
- Applicable standards
- Definition of value

Appraisal Theory

Subject and date of appraisal

● Date of appraisal	● What is being appraised?
● Specific date usually in the past ● Present vs. past date ● Differs from “report” date ● Appraisal opinion is based on information available *only* till the date of appraisal	● Total assets (property) ● Specific property ● Invested capital ● Own capital (control or minority)

Appraisal Theory

Types of Property/Subject of Appraisal

- **Real property* – land and buildings**
- **Personal property – equipment, inventory, intangible investments, and financial assets**
- **Business – commercial, industrial, service, or investment entity performing economic activities**
  - **➔ Close concepts: operating company and going concern**
- **Financial interest – results from legal form of ownership over a business or property, or contractual right of disposition (sale) within certain time period, and with negotiated price (options), or …**

*** Real property – ownership interest in real estate**

Appraisal Theory

Purpose of Appraisal

- Purpose of appraisal can influence selection of appraisal method used, and definition of value used
- Possible purposes of appraisal
  - ➔ Price of transaction (sale, merger, takeover)
  - ➔ Privatization / post privatization
  - ➔ Management buyouts
  - ➔ Tax purposes
  - ➔ Joint venture investments
  - ➔ Bankruptcy, reorganization, restructuring
  - ➔ Court disputes …

Appraisal Theory

LEGAL REGULATIONS AND METHODOLOGICAL FRAMEWORK FOR APPRAISAL OF EQUITY

- **Law on Privatization, Regulation on Appraisal Methodology etc**
- **Law on Accounting**
- **Law on Companies**
- **Tax Code**

- **Uniform Standards of Professional Appraisal Practice**
- **Business Valuation Standards**
- **International Valuation Standards**

Appraisal Theory

Definition of Value

- Common definitions of value
  - ➔ (fair) market value
  - ➔ investment value
  - ➔ going concern value
  - ➔ liquidation value
    - salvage value
    - scrap value
  - ➔ book value and corrected book value
- Definition of value influences appraisal results
- There is no “single value” of a business

Appraisal Theory

(Fair) Market Value (FMV)

- **Amount for which property can change owner between willing seller and willing buyer, where no coercion exists, and both participants are aware of relevant facts** ***American Society of Appraisers, Business Valuation Standards***

- **Similar definition according to IVS (also includes appropriate marketing and "arm's lenght" – market conditions)**

- **Presumes market trade between two independent and non-associated parties – without specific buyer**

Appraisal Theory

- It is considered that realistic appraisal of price, for property to change owner, is time dependant
- Actual price paid in transaction can differ from realistic market depending on:
  - ➔ incentive of both parties
  - ➔ negotiation skills of parties
  - ➔ financial structures of a transaction
- This definition presumes cash payments. Fee paid in the from of instalments, financing of buyer, or providing tangible or intangible property, can influence the price

Appraisal Theory

Investment Value

- **Represents the value for specific investor or buyer for the business. Accordingly, methods used for appraisal of the business presume investor's know-how, business plan, cost reduction, risk analysis etc. Buyer creates "synergy" in the company**

- **Differs from fair market value – presumes specific buyer**

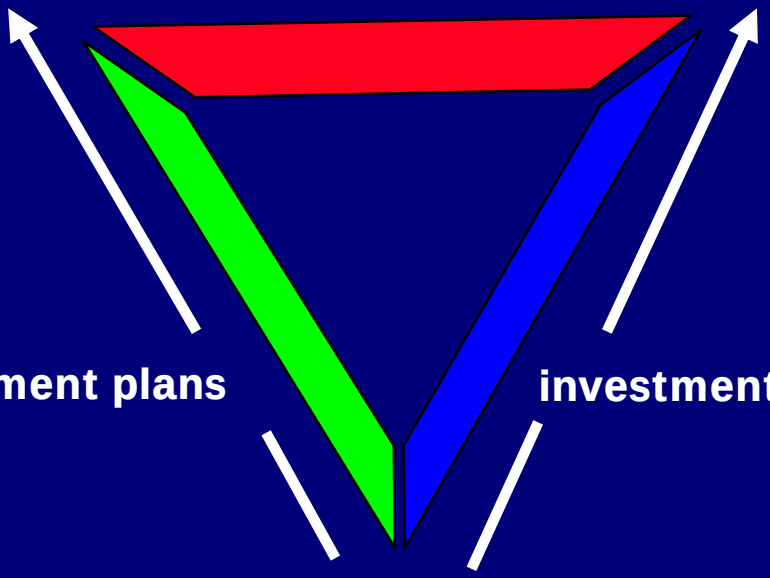
- **It is often basis for negotiations and assessment of tender offer**

Appraisal Theory

Fair Market Value vs. Investment Value

POTENTIAL VALUE WITH INTERNAL IMPROVEMENTS = FMV (if the business has financial capability)

POTENTIAL VALUE WITH EXTERNAL IMPROVEMENTS = INVESTMENT VALUE



management plans

investment plans

FAIR MARKET VALUE "AS IT IS"

Appraisal Theory

Appraisal of Going Concern Value of a Business

- Not a definition of value, more of a concept
- Refers to intangible elements of the business which result from the following factors:
  - ➔ existence of trained and qualified labor;
  - ➔ business that operates, and
  - ➔ necessary licenses, systems, and procedures
- Premise: there is no uncertainty (for example continuation of losses) regarding future events that would put in doubt the fundamental assumption that the entity can continue with operations
- In case the company is deemed unable to continue operating, liquidation value may be appropriate definition of value

Appraisal Theory

Liquidation Value

- It is assumed that the operations of the business will be terminated, and that the assets will be sold piecemeal
- There is no assumption of the company resuming operations
- Two concepts of the liquidation value:
  - ➔Regular liquidation: assumption is that the property is sold within reasonable time period (6 months up to a year) in order to achieve the best price
  - ➔Accelerated liquidation: assumption is that the property is sold as fast as possible
- Liquidation Value also includes direct and indirect costs related to sale of property
- Usually represents minimum value of the company

Appraisal Theory

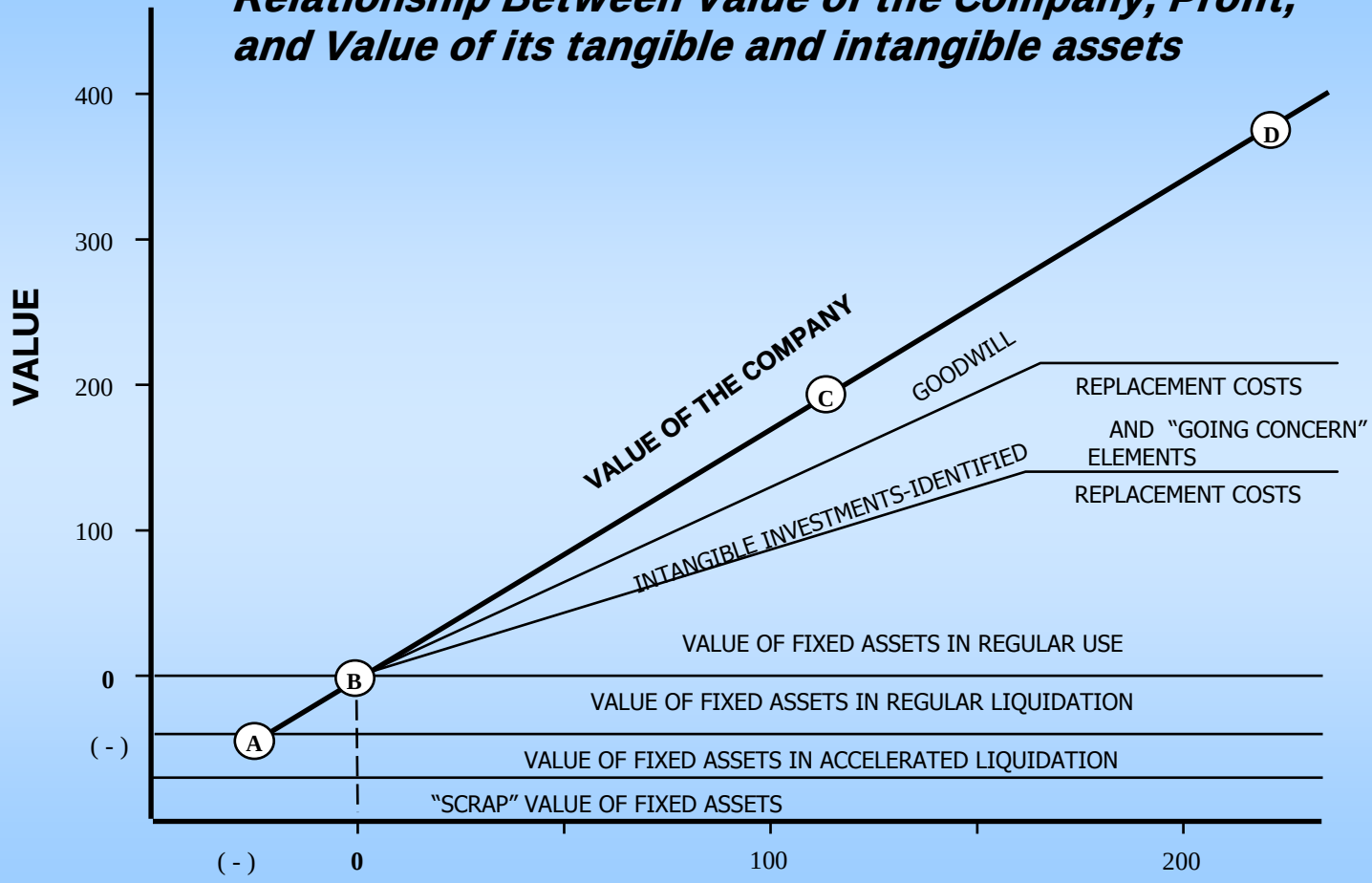
Book Value and Corrected Book Value

- **Book value is an accounting term that usually refers to:**
  - ➔ **For property, its historical cost (reevaluated acquisition price) reduced by depreciation**
  - ➔ **For the company, difference between total assets and total liabilities. Conceptually, it is the value of net assets.**

IT IS COINCIDENCE WHEN THE BOOK VALUE AND THE MARKET VALUE ARE THE SAME

Appraisal Theory

Relationship Between Value of the Company, Profit, and Value of its tangible and intangible assets



A. Company has losses – accelerated liquidation imminent

B. Company is at breakeven, but it could start losing money. Regular liquidation is appropriate

C. Company has normal profit Also owns both tangible and intangible assets with minimal economic obsoleteness.

D. Company is highly profitable. Tangible and intangible assets reflect the value in use. Value of higher profit will be shown through goodwill

SOURCE: Smith, Parr

Appraisal Theory

What is opinion on Value?

- **Opinion on value should be independent, objective conclusion based on facts and circumstances that relate to every individual business**

- **Opinion on value is based on acceptable methods that are implemented depending on available data, in combination with professional judgment of appraiser, in order to reach the *reasonable* appraisal of the value**

Appraisal Theory

What is Not Opinion on Value?

- It is not what the client says or wants
- it is not based on the amount of money the client pays for the service

I WANT HIGHER VALUE!

Appraisal Theory

Management Responsibility in Appraisal

- Assist the team of appraisers in data gathering
- Enable the team of appraisers to inspect subjects of appraisal
- Answer questions of the team regarding the company and collected data, including company experts from operations, finance, marketing etc.
- Prepare business plan or operations projections
- Evaluation of the report on appraisal and discussion on problems or errors that the management has found in the appraisal
- Giving independence to the team of appraisers in decision making

Appraisal Theory

Approach	Cost	Market	Income
Principles	Substitution Invested assets	Substitution Comparison: -Multipliers -Transactions -Branch Rules -Previous Transaction	Anticipation Discounting income (results) Capitalization of income (results)
Methods	Net assets value Liquidation value Surplus income	Equity/Profit Equity/Cash Flow Equity/Book Value Equity/Profit Before Tax Equity/Profit Before Interest and Tax Invested Capital/Profit Branch Multipliers	Discounting Cash Flow Capitalization of Profit

Appraisal Theory

Appraisal Method Depending on Privatization Model (Srbija)

- **Auction – set by Regulation**
  - ➔ Method of corrected book value
  - ➔ Discounted Cash Flow Method
  - ➔ Liquidation value method
- **Tender – international standards**
  - ➔ Discounted Cash Flow Method
  - ➔ Method of transactions and comparable companies
  - ➔ Possibly net assets method
  - ➔ In evaluation of offer – investment value
- **Restructuring – combination**

II
Sources, Collection, and Data Analysis

Sources, Collection, and Data Analysis

Types of Data for Analysis

- Data on macroeconomic environment
- Data on activities the business is in
  - ➔ At world level
  - ➔ In the region
  - ➔ In the country of operations
- Data on the business
- Goal: cross analysis of the environment in which the business operates (geographically and by activity), determining position of the company in the environment and development potentials

Sources, Collection, and Data Analysis

Macroeconomic Data

- Macroeconomic analysis influences the following variables in appraisal:
  - ➔ calculation of discount rate
  - ➔ growth projection of future sales
  - ➔ appraisal of business risk
  - ➔ appraisal of country risk
- Local, national, regional economy can be analyzed. Type of information and its range depend on nature of a business and appraisal purpose
- Local economic trends will influence small local business, whereas big national company will be influenced more by national and regional trends

Sources, Collection, and Data Analysis

Data on Industry

- Data on industrial branch can assist in assessment of the following information relative to appraisal
  - ➔ growth potential per sales unit
  - ➔ assessment of sources and risk levels in industry (discount rate)
  - ➔ expected profit margins
  - ➔ competition
  - ➔ management projections
  - ➔ trends in demand, growth, and inflation
  - ➔ legislation
  - ➔ technological development
  - ➔ environmental problems

Sources, Collection, and Data Analysis

- Comparative financial information
  - ➔ Balance sheet in relative expression – balance sheet with entire assets, liabilities, and equity, presented as percentage of total assets, is based on average balance sheet for given industry
  - ➔ Income statement in relative expression – each item of the income statement is presented as percentage of sale, based on average income statement for given industry
  - ➔ Ratio analysis – average financial indicators (liquidity, leverage, margins etc) fro companies in the industry
- This data represent the basis of financial analysis of a company, and its comparison to the industry branch

Sources, Collection, and Data Analysis

Information on Company

- **Necessary information:**
  - ➔ history of the company
  - ➔ description of goods and services
  - ➔ balance sheet / income statement (3-5 years)
  - ➔ gross balance
  - ➔ property information (land and buildings)
  - ➔ employment information
  - ➔ management information
  - ➔ operations information (production, capacities etc)
  - ➔ projections
- **Goal: gather information through understanding of company history, current and projected financial position, products, market, capabilities, weaknesses etc...**

Sources, Collection, and Data Analysis

Information analysis

- **Consideration of effects of macroeconomic environment and situation in industry on financial position of a company and earning capacity of the company on the day of appraisal**

- **Questions to be considered:**
  - ➔ **What is the performance of the company compared to the industry?**
  - ➔ **Are the current economic conditions favorable or not for the company?**
  - ➔ **Is the industry in expansion, stagnation, or recession?**

III
Financial Analysis

Financial Analysis – Purpose and Role

- **Reviewing financial position of a company**
  - ➔ **Identification of weak points and their categorization by areas**
  - ➔ **Trend analysis**
  - ➔ **Basis to determine risks of investing in a company**

- **Identification of elements for cash flow projections**
  - ➔ **Growth**
  - ➔ **Costs and profit margins at different levels**
  - ➔ **Requirements for working capital and turnover ratios**
  - ➔ **Investments in fixed assets**
  - ➔ **Optimal structure of invested capital**
  - ➔ **Discount rate**

Financial Analysis – Purpose and Role

- In brief, financial analysis influences many phases of the appraisal process, including each of the appraisal methods
- In that manner, financial analysis represents probably the most significant part of the appraisal process
- Lack of necessary information, essential to financial analysis, significantly increases the risk level of investing in a company

Financial Analysis - Procedure

1. Selection of calculation system (balance schemes) and adjusting of data

2. Normalization of financial results

3. Calculation of indicators: balance sheet and income statement in relative expression, horizontal and vertical financial structure, indicators of liquidity, activity, and profitability

4. Comparison with referential companies

5. Analysis of trends and atypical positions

Financial Analysis - Procedure

1. Selection of calculation system (balance schemes) and adjusting of data

- **Two forms of adjustment: local standards with the international (or vice versa), and local from earlier periods with the current**
- **Most often fixed assets and depreciation, method of revenues calculation, inventory and receivables are being adjusted**
- **Better base is ensured for comparison if the company is compared with referential companies from other countries**
- **Investors often request these adjustments in order to improve quality of informational base**

Financial Analysis - Procedure

2. Normalization of financial results

- **Operative flows are "cleansed" of any non operative or non market elements**
- **Goal – identification of results of "normalized" operations, i.e. realistic level of operative profit**
- **Most frequent corrections:**
  - ➔ **Additional revenues and expenses**
  - ➔ **Revenues and expenses that resulted from utilization of extra assets or non operational assets**
  - ➔ **Revenues and expenses related to transactions realized under conditions different from the market ones (related parties, not on arm's length)**

Financial Analysis - Procedure

3. Calculation of indicators -
Balance sheet and income statement in relative expression (common size)

- **Balance sheet – share of each item in total assets**
- **Income statement – share of each item in total income**
- **Such presentation of financial statements facilitates**
  - **➔ Analysis of the structure of balance sheet and income statement**
  - **➔ Analysis of profit margins (i.e. earning at different levels)**
  - **➔ Trend analysis**
  - **➔ Easier comparison**
    - **Company's results within the analysis period**
    - **With referential companies**

Financial Analysis - Procedure

3. Calculation of indicators -

Ratio analysis

- **Four basic groups of indicators**
  - **➔ Liquidity ratios**
  - **➔ Leverage ratios**
  - **➔ Efficiency ratios**
  - **➔ Profitability ratio**

- **DuPont analysis**

Financial Analysis - Procedure

- **Liquidity ratios**
  - ➔ **Current ratio**
  - ➔ **Quick ratio**
  - ➔ **Long term financial balance and net working capital**
  - ➔ **Days accounts receivables due**
  - ➔ **Days inventory in stock**
  - ➔ **Days accounts payable due**
  - ➔ **Net working capital and operative revenue ratio**

Financial Analysis - Procedure

- **Liquidity ratios provide the following information**
  - ➔ **Company's ability to repay current debts**
  - ➔ **Quality of inventory and account receivable management**
  - ➔ **Availability of working capital**
  - ➔ **Basis for working capital projections**

- **When interpreting this group of indicators, keep in mind**
  - ➔ **If the company's operations are seasonal**
  - ➔ **If the data of analysis differs from the year end**

Financial Analysis - Procedure

- **Leverage ratios**
  - ➔ **Interest coverage ratio**
  - ➔ **Level of long term indebtedness**
  - ➔ **Debt to equity ratio**
  - ➔ **Share of own capital in total assets**
- **Leverage ratios provide the following information**
  - ➔ **Company's ability to service long term debts**
  - ➔ **Level of financial risk in the company**
  - ➔ **Is there room for additional debt (for investments) or is the company over indebted**
- **Special attention should be given to companies whose activities are seasonal**

Financial Analysis - Procedure

- **Efficiency ratios**
  - ➔ **Total assets turnover ratio**
  - ➔ **Total working capital turnover ratio**
  - ➔ **Total fixed assets turnover ratio**
  - ➔ **Operative revenue by employee**
  - ➔ **Total assets by employee**

- **These ratios provide the following information**
  - ➔ **Efficiency of assets utilization**
  - ➔ **Efficiency of working capital utilization**
  - ➔ **Efficiency of employees**

Financial Analysis - Procedure

- **Profitability ratios**
  - ➔ **Profit rates (Gross margin, EBITDA, EBIT, EBT, ...)**
  - ➔ **Profit to assets ratio**
  - ➔ **Profit to fixed assets ratio**
  - ➔ **Return on own assets (ROA)**
  - ➔ **Return on own equity (ROE)**

- **These ratios provide the following information**
  - ➔ **Profitability at different levels**
  - ➔ **Degree of efficiency in utilization of assets**
  - ➔ **Return the assets generate**
  - ➔ **Return received by equity owners**

Financial Analysis - Procedure

- **DuPont analysis**
  - ➔ **Method of assessment of leverages/sources of financial performance of a company**
  - ➔ **It is based on ROE components**
- **ROE components – generators of company's financial might**
  - ➔ **Net profit rate (Net profit/Income)**
  - ➔ **Income generated by assets or turnover of total assets (Income/Total Assets)**
  - ➔ **Degree of solvency or financial leverage (Total Assets/Own Capital)**
- **Du Pont formula:**

ROE = Profitability x Turnover x Leverage

Financial Analysis - Procedure

4. Comparison with referential companies

- **Shows relative position of the company with regard to financial performance**
- **Very important factor in risk assessment for the company**
- **Basis for comparison is comprised of BS and BU in relative expression and calculated ratios**
- **Multiple levels of comparison:**
  - ➔ **With individual companies (selected by different criteria – activity, size…)**
  - ➔ **With branch average**
  - ➔ **With economy average**
  - ➔ **At different territorial levels…**

Financial Analysis - Procedure

5. Analysis of trends and atypical positions

- **Identification of changes of individual positions during the analysis period, direction of those changes, their steadiness and intensity**

- **Identification of atypical positions**
  - ➔ **In comparison with company's results in other years**
  - ➔ **In comparison with similar companies or industrial average**

- **Regardless of appraisal purpose, atypical positions should be investigated in detail – when, how, and why they occurred**

Financial Analysis – Summary

KEY QUESTIONS IN FINANCIAL ANALYSIS

- Is the company sufficiently liquid? Does it have surplus or shortage of working capital? What is the share of required working capital in revenues?
- is the company over indebted? Or, is it capable of additional indebtedness if the need arises?
- Is profitability at all levels satisfactory? Do profit rates grow, decline, or are they steady?
- Are there significant non operative assets that generate no income? Is part of income generated from marginal activities?

Financial Analysis - Summary

KEY QUESTIONS IN FINANCIAL ANALYSIS

- **What is the total trend in operations – expanding, declining, steady?**
- **What is the financial performance of the company compared to other companies in the branch, economy, international environment?**
- **Judging by the financial analysis, is the risk of investing in the company below, above, or at average?**

Financial Analysis – Summary

KEY QUESTIONS IN FINANCIAL ANALYSIS

- **Question to be added to each of the aforementioned:**

WHY?

Financial Analysis - Summary

ANALYSIS IS NOT A DESCRIPTION;

ANALYSIS IS A DECOMPOSITION, OBSERVING CHARACTERISTICS, AND EXPLAINING CAUSES

IV
Appraisal of Equity by Cost Approach

Cost Approach

Methods

- Value of net assets
- Liquidation Value

Assets	Liabilities
Financial investments Inventory Real property Equipment Intangible investments	Short term debts Long term debts Total debts Equity (net assets)
Total assets (assets, property)	Total liabilities

Net Assets Method

- It is used under assumption of continuing operations (going concern)
  - ➔ when value of the company depends mostly on physical property (capital intensive companies)
  - ➔ when the company has no clear “profit history” (profit rises and falls)

- Defining principles of value:
  - ➔ Utilization value
  - ➔ Trade value (individually or as part of estate)
  - ➔ Highest and best use analysis

- Expert (appraiser) selection for equipment and buildings

Net Assets Method

Procedure

1. **Balance sheet (audit)**
2. **Appraisal of financial assets**
3. **Appraisal of real property and equipment**
4. **Identification and appraisal of intangible investments**
5. **Reducing debts to current value (also include debts that may not be recorded)**
6. **Calculation of equity value**
7. **Balance sheet on the day of appraisal**

Net Assets Method

1. **BALANCE SHEET (AUDIT)**

- **Audit, which is conducted prior to appraisal, contributes to quality of appraisal results. Appraiser:**

  ➔ **demands the audit (or review) by independent auditor**

  ➔ **personally conducts the audit (most often review)**

- **In case there was no audit prior to the appraisal, the appraiser must note this in the appraisal report**

Net Assets Method

2. FINANCIAL ASSETS

- Receivables and other short term investments
  - ➔ specifications, inventory lists, contracts
  - ➔ collection possibilities (write offs, value corrections)
  - ➔ age structure (in the country, abroad)
  - ➔ exchange rate
- Marketing (long term financial investments)
  - ➔ inventory lists, specifications
  - ➔ exchange rate
  - ➔ appraisal of company of investment (marketing)
- Inventory
  - ➔ inventory list of products, goods, materials, work in progress
  - ➔ obsolescence of inventory
  - ➔ prices in the balance
- AVR
  - ➔ inventory list

Net Assets Method

3. REAL PROPERTY AND EQUIPMENT

- **Real property (appraisal expert)**
  - ➔ **Land**
    - Data on size, location, and ownership
    - Market prices
    - Condition insight
  - ➔ **Buildings**
    - List of all edifices
    - Description / characteristics
    - Building condition insight
    - Appraisal of buildings
      - ➔ Depreciated replacement cost
      - ➔ Return value
      - ➔ Market value

Net Assets Method

- Equipment (appraisal expert)
  - ➔ Inventory list of equipment
  - ➔ Inspection of equipment's condition
  - ➔ Capacity utilization
  - ➔ Wear-down percentage
  - ➔ Appraisal of equipment
    - Depreciated replacement cost
    - Market value
    - Utilization value
  - ➔ Prices at the secondary market

Net Assets Method

- Three possible approaches in appraisal of real property and equipment
  - ➔ Cost approach
  - ➔ Comparison between sales prices
  - ➔ Capitalization of return (uncommon for equipment)
- When it is not possible to determine market value, IVS call for use of “surrogate” – (DRC – Depreciated Replacement Cost)
- Three types of depreciation – decrease of value (obsolescence)
  - ➔ Physical
  - ➔ Functional / technological
  - ➔ External (economic)
- Mandatory analysis of expiry period and best utilization

Net Assets Method

4. INTANGIBLE INVESTMENTS

➔ Increase the value of tangible investments

➔ Exist if increased return exists for utilized assets

➔ Discernible from tangible investments

➔ There must be material evidence of their existence

➔ Identification

- Contracts
- Brand logo
- Brand name
- Computer software
- Franchise
- Publishing rights
- Formulas
- Patents, licenses
- Trained staff
- Going concern
- Goodwill
- Customer lists
- Technical libraries

Net Assets Method

- *GOODWILL*
  - ➔ Goodwill occurs when a company generates profit in such manner that the value of the "business" exceeds the value of net assets
  - ➔ Goodwill includes the above average profit, value of intangible investments, and company's going concern value
- *GOING CONCERN*
  - ➔ Value of established systems, procedures (contributes to company's ability to operate)
- Goodwill exists only in profitable companies, and going concern exists in non profitable companies as well.

Net Assets Method

5. LIABILITIES

- **Identification**
  - ➔ Long term
  - ➔ Short term
  - ➔ Long term contingencies

  - ➔ Unrecorded liabilities
  - ➔ Potential liabilities

  - ➔ Missing liabilities
    (when date of balance sheet differs from appraisal date)

  - ➔ PVR

Net Assets Method

6. EQUITY

- Difference between appraised value of total assets and appraised value of total liabilities

Appraised value of assets	2,601,600
Long term liabilities	(384,000)
Short term liabilities	(876,800)
EQUITY	1,340,800

Liquidation Value

- **Presumption of termination of company's operations**
- **Lower limit (the lowest value)**
- **Used for:**
  - ➔ **Appraisal of equity of companies facing liquidation**
  - ➔ **Appraisal of equity of company with several parts (or child companies), some of which are profitable and others are not (profitable parts are appraised with one of the return methods, and liquidation value is applied to non profitable parts)**
- **Defining principles of value:**
  - ➔ **Value in regular liquidation**
  - ➔ **Value in accelerated liquidation**
- **Appraisal must be assisted by experts for appraisal of real property and equipment**

Liquidation Value

Procedure

1. Balance sheet (audit)
2. Taking approach to liquidation (regular vs. accelerated)
3. Determining the liquidation period
4. Determining gross liquidation value of all balance items
5. Reducing gross liquidation value by direct and indirect liquidation costs
6. Adding and subtracting profit / loss generated during the liquidation period
7. Subtracting liquidation value of liabilities
8. Adding or subtracting taxes
9. Discounting of present value for the liquidation period
10. Implementation of appropriate premiums and discounts
11. Balance sheet on the day of appraisal

Liquidation Value

- **Appraiser determines the best method for:**
  - ➔ **liquidation of company (regular of accelerated)**
  - ➔ **achieving maximum value of liquidation remnant**

- **Factors that influence appraiser's decisions:**
  - ➔ **implementation of legal regulations / limitations**
  - ➔ **company's ability to liquidate assets in regular liquidation**
  - ➔ **potential liquidation value of intangible investments**

- **Settlement of liabilities/claims out of court or in court proceedings**

V
Appraisal of Equity by Market Approach

Market Approach

- **GLC (COMPARABLE COMPANIES) – the method based on prices of shares of comparable companies (data from stock market)**
- **TRANSACTIONS – the method is based on prices of shares reached in sale of comparable companies**
- **PREVIOUS TRANSACTIONS – the method based on past sales transactions related to the subject of appraisal**
- **BRANCH MULTIPLIERS – the method is based on special formulas or rules used in certain branches**
- **All these methods are best applicable when the values of multinational companies are appraised, or companies which do business at the world market**

Method of Comparable Companies

- **Method is based on market value of shares of comparable companies whose shares are being traded in stock exchange market. It is assumed that an investor will be able to invest in these companies, just like in the company being appraised.**
- **It is necessary to gather detailed financial and operational data on comparable companies**
- ***Data sources:*** **Data Base Disclosure World Scope contains updated financial information for over 15,000 companies in 24 different stock markets in the world.**

Method of Comparable Companies

Procedure

1. **Choice of wider set of comparable companies**
2. **Gathering detailed financial information**
3. **Adjusting data, financial analysis, comparison to the subject of appraisal, and selection of the final set**
4. **Selection and calculation of multipliers**
5. **Correction of multipliers for different risk sources**
6. **Application of multipliers to financial data of the appraisal subject**
7. **Final corrections of the results (Discounts and Premiums)**

Method of Comparable Companies

Selection of the set of comparable companies

- **Companies should be comparable by production program, size, market, profitability, growth etc**
- **At least 6-8 companies should be selected**
- **Criteria:**
  - ➔ **How diversified are operations of the company being appraised with regard to the comparison companies?**
  - ➔ **How similar are the products of the appraised company and the comparison companies' ?**
  - ➔ **Are the business conditions similar?**
  - ➔ **At what level of development is the company compared to selected comparison companies ?**
  - ➔ **Are the comparison companies of similar size to the appraised company?**

Method of Comparable Companies

- **Financial analysis and comparison**
  - ➔ **Correcting data for comparability**
  - ➔ **Ratio analysis and comparison with the appraisal subject**
  - ➔ **Choice of multipliers depend on comparison results**

- **Choice and calculation of multipliers:**
  - ➔ **Equity related to levels of profit (from income to net profit)**
  - ➔ **Equity related to cash flow (gross or net)**
  - ➔ **Equity related to book value**
  - ➔ **Equity: own vs. invested**
  - ➔ **Equity (price of a share) <u>always</u> on the day of appraisal**

Method of Comparable Companies

- **Implementation of the multipliers**
  - ➔ **Multiplier is corrected by differences in sources and risk levels between comparable companies and the appraisal subject**
  - ➔ **Corrected multiplier is applied to appropriate financial data of the appraisal subject**
  - ➔ **Don't mix "apples and oranges"**
- **Result: Value of the company (in case shares were sold / bought at the stock exchange market)**
- **Value refers to minority equity of the company whose shares are being traded – control premium should be applied**
- **Discount for unmarketable shares**
- **Final corrections: value of non operative assets**

Method of Comparable Companies

Price of shares of comparable companies method

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MLEKARA, Srbija	**MVIC/EBITDA**	
Profit in the last 12 months		**297,628**
Selected multiplier		8.05
Corrections:		
Risk of country of investment		6.02
Size of company		5.30
Specific company risk		4.29
Preliminary value of invested capital		1,276,934
Minus: Interest bearing debts		110,665
Preliminary value of own capital		1,166,269
Plus: Control premium	25%	291,567
Plus: Surplus TOS		
Plus: FMV of non operative assets		
Preliminary value of own capital II		1,457,837
Minus: Discount for poor marketability of shares	25%	364,459
Appraised value of own capital		**1,093,378**

Transactions Method

- **Basic method: price reached in transaction between comparable companies**
- **Data sources: Mergerstat Review, Acquisitions Monthly**
- **Methodology, procedure, and implementation fully analogous to the method of comparable companies**
- **Basic difference: the result is the value of majority equity, thus it is not necessary to apply the control premium**
- **Discount for unmarketable shares still applicable**

Transactions Method

Method of comparable transaction

000 din

MLEKARA, Srbija	MVIC/EBITDA	
Profit in the last 12 months		**297,628**
Selected multiplier		11.88
Corrections:		
Risk of country of investment		8.88
Size of company		7.82
Specific company risk		6.33
Preliminary value of invested capital		1,883,403
Minus: Interest bearing debts		110,665
Preliminary value of own capital I		1,772,738
Plus: Control premium		
Plus: Surplus TOS		-
Plus: FMV of non operative assets		-
Preliminary value of own capital II		1,772,738
Minus: Discount for poor marketability of shares	25%	443,184
Appraised value of own capital		**1,329,553**

VI
Appraisal of Equity by Return Approach

Return Approach

THEORETICAL FRAMEWORK

- Presumption: value of investment depends on future benefit (cash flow)
- Cash flow is discounted or capitalized in order to obtain present value. Discount rate matches the return rate requested by the investor.
- Return rate is based on the analysis of risk related to realization of the projected future cash flow

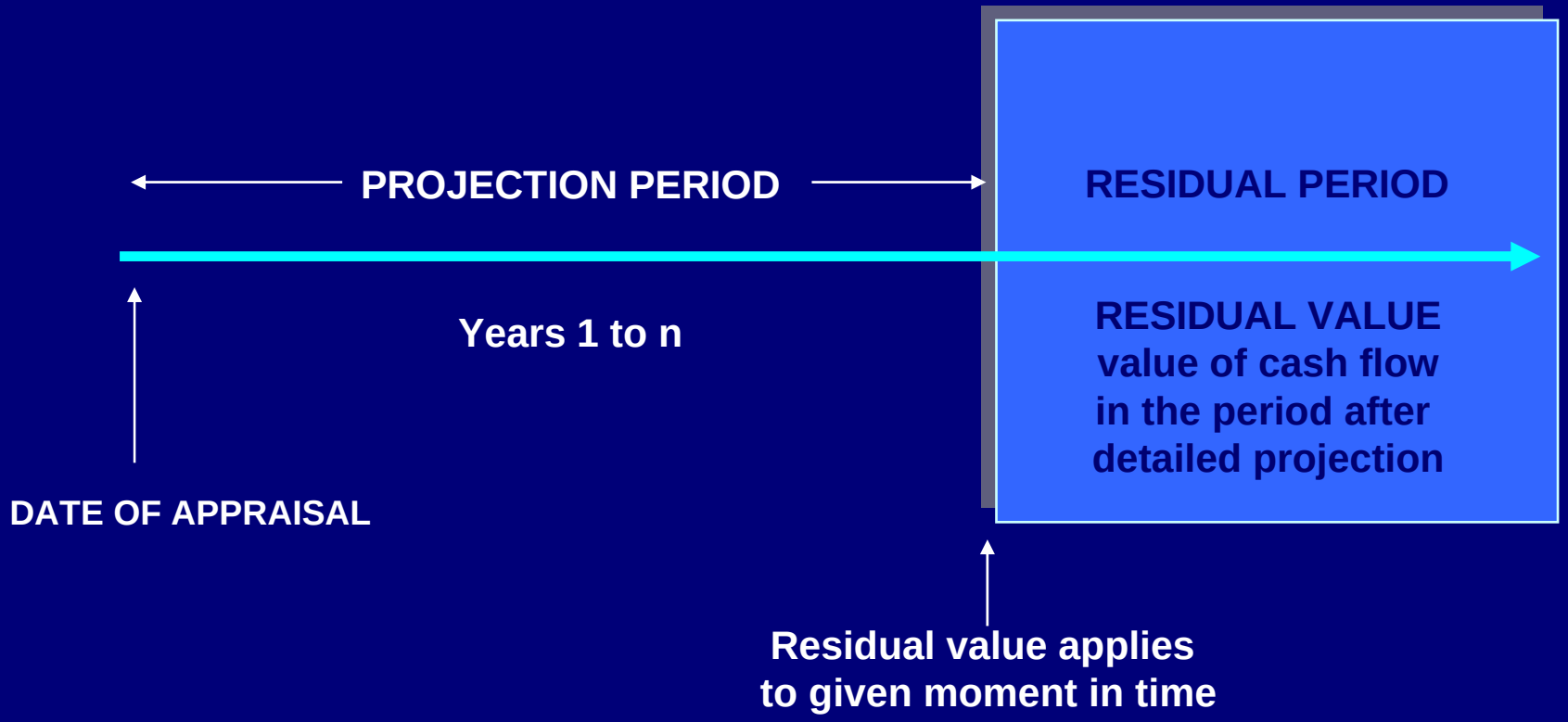
Return Approach

METHODS

- **Capitalization of selected level of profit**
  - ➔ **Presumption: cash flow (or other level of return) stabilized and normalized**
  - ➔ **Possible to determine long term feasible growth rate**
  - ➔ **Capitalization rate represents risks**
- **Discounted cash flow**
  - ➔ **Presumption: detailed projection necessary for several year period prior to stabilization and normalization of the cash flow**
  - ➔ **After that period it is possible to determine the long term feasible growth rate**
  - ➔ **Discount rate represents risks**

Discounted Cash Flow Method

- Components of the discounted cash flow model



Discounted Cash Flow Method

Procedure

1. Selection of cash flow definition
2. Analysis and projection of revenues
3. Analysis and projection of operative expenses
4. Financial and other liabilities
5. Investments in fixed assets
6. Investments in permanent working capital
7. Determining and adjusting of discount rate
8. Residual value
9. Calculating of present value
10. Final Corrections
11. Logical check

Discounted Cash Flow Method

1. SELECTION OF CASH FLOW DEFINITION

- **Different definition in accordance with purpose**
  - ➔ **Own equity vs. invested capital (equity / net-of-debt vs. invested capital / debt-free)**
  - ➔ **Flow before and after taxes**
  - ➔ **Nominal vs. real cash flow**

- **Selected definition determines other parameters**
  - ➔ **Components of cash flow**
  - ➔ **Discount rate**
  - ➔ **Transformation and interpretation of achieved result**

Discounted Cash Flow Method

NET PROFIT

+

NON-CASH ITEMS OF BALANCE SHEET (DEPRECIATION)

=

GROSS CASH FLOW

+

INCREASE IN LONG TERM CREDITS

-

(NET) INVESTMENTS IN WORKING CAPITAL

-

INVESTMENTS IN FIXED ASSETS

-

REPAYMENTS OF LONG TERM CREDITS

=

NET CASH FLOW GENERATED BY OWN CAPITAL

Discounted Cash Flow Method

- **More general format**

NET PROFIT

+

NON-CASH ITEMS OF INCOME STATEMENT (DEPRECIATION)

=

GROSS CASH FLOW

+

INCREASE IN LIABILITIES / DECREASE IN ASSETS

-

INCREASE OF ASSETS / DECREASE OF LIABILITIES

=

NET CASH FLOW GENERATED BY OWN CAPITAL

Discounted Cash Flow Method

OWN VS. INVESTED EQUITY (CAPITAL)

- Invested equity – total long term capital – own and borrowed (equity + interest bearing /long term/ debt)
- Definition

NET PROFIT (EARNINGS) BEFORE INTEREST AFTER TEX (EBIAT)

+

NON-CASH ITEMS OF INCOME STATEMENT (DEPRECIATION)

=

GROSS CASH FLOW (IC)

-

(NET) INVESTMENTS IN WORKING CAPITAL

-

INVESTMENTS IN FIXED ASSETS

=

NET CASH FLOW GENERATED BY INVESTED CAPITAL

WHAT IS ACTUALLY THE CASH FLOW?

CASH WHICH REMAINS AVAILABLE TO EQUITY OWNERS

Discounted Cash Flow Method

2. ANALYSIS AND PROJECTION OF REVENUE

- **Revenue = Quantity x Price :)))))))))))**
- **Projections can go beyond total growth rate**
- **Distinguish between domestic sales and export (exchange rate!!!)**
- **Keep track of available capacities**
- **Include investment effects**
- **Keep track of previous analysis results**
  - **➔ Realized growth and trends**
  - **➔ Expected trends in entire economy**
  - **➔ Expected trends in branch (domestic and world market)**
  - **➔ Demand**
  - **➔ Expected trends of realistic prices**
  - **➔ Production assortment**

Discounted Cash Flow Method

3. ANALYSIS AND PROJECTION OF OPERATIVE EXPENSES

- **Distinguish expenses to variable, fixed, and relatively fixed**
- **It is the best to project each expense (group) individually**
- **Variable expenses – according to normative provisions and input prices, or according to the share in total revenue**
- **The same applies to variable component of relatively fixed expenses**
- **Separate import component (exchange rate!!!)**
- **Depreciation – if possible, realistic acquisition prices and realistic depreciation rates should be increased by new investments – dynamic depreciation plan**

Discounted Cash Flow Method

- Control – inspection of projected margins with the realized or comparison companies

- Alternatively – it is possible to project directly EBIT or EBITDA through margin determined in advance; such method is not always appropriate
  - ➔ In any case, there MUST be depreciation projection
  - ➔ Detailed projections of other expenses are often required too
    - Gross and net salaries, import component of raw materials
    - Expenses for raw materials, if detailed calculation of working capital is performed
    - .....

Discounted Cash Flow Method

4. FINANCIAL AND OTHER LIABILITIES

- **Short term loans**
  - ➔ Interest at known or presumed rate
  - ➔ Most often only in the first year
- **Other short term liabilities**
  - ➔ Normalized level is determined, and most often the "surplus" is paid in the first year
  - ➔ It is possible to encompass them by calculation of permanent working capital
- **Long term loans**
  - ➔ Known or presumed loan terms
  - ➔ Plan for repayment of existing and new loans

Discounted Cash Flow Method

5. INVESTMENTS IN FIXED ASSETS

- **New investments**
  - ➔ Determined in accordance with technological needs
  - ➔ If loan financed, keep in mind consistency of the dynamics
  - ➔ Increase depreciation; rates depend on technical structure

- **Replacement investments**
  - ➔ If there aren't more specific data, percentage of depreciation is taken
  - ➔ They do not increase depreciation

Discounted Cash Flow Method

6. INVESTMENTS IN PERMANENT WORKING CAPITAL

- **Simpler way of calculation: as percentage of total revenue**
  - ➔ **Total net working capital is considered**
  - ➔ **Appropriate if turnover is steady and normalized**
  - ➔ **Necessary investments – percentage of revenue increment**
- **Better way: projection of each individual item, and comparison with found level**
  - ➔ **Inventory: turnover ratios depend on activity**
  - ➔ **Receivables and payables: in accordance with legal provisions or specific contracts**
  - ➔ **Cash: 1-5 days tied up**
  - ➔ **Unless specially presented, other short term liabilities are included (items of salaries, taxes, and depreciation)**

Discounted Cash Flow Method

7. DISCOUNT RATE

- Definition: return rate used for conversion into present value of cash amount to be received or paid in the future
- Reflects the risk level of specific investment
- In DNT method, it can be interpreted as risk (likeliness) of projections realization
- Depends on the definition of cash flow
- Several methods of determination, mostly used
  - ➔ CAPM (Capital Asset Pricing Model)
  - ➔ Build-up Approach

Discounted Cash Flow Method

- **Capital Asset Pricing Model**

$$R = R_f + \beta\,(R_m - R_f) + S_1 + S_2 + C$$

R	=	expected rate of return
R_f	=	risk free rate
β	=	beta ratio
R_m	=	return rate at the market
$R_m - R_f$	=	market risk premium
S_1	=	correction for size of the company
S_2	=	specific risk of the company
C	=	country of investment risk

Discounted Cash Flow Method

- **Build-up Method**

$$R = R_f + (R_m - R_f) + S_1 + S_2 + C$$

R	=	expected rate of return
R_f	=	risk free rate
R_m	=	return rate at the market
$R_m - R_f$	=	market risk premium
S_1	=	correction for size of the company
S_2	=	specific risk of the company
C	=	country of investment risk

Discounted Cash Flow Method

- Discount rate R reflects the price of own capital
- For cash flow before debt servicing, it is necessary to include the price of borrowed sources - WACC - Weighted Average Cost of Capital is used

$$WACC = R_E \times E/(E+D) + (1-t) \times R_D \times D/(E+D)$$

R_E = cost of own capital

$E/(E+D)$ = share of own capital in the invested

t = tax rate

R_D = cost of debt

$D/(E+D)$ = share of debt in the invested capital

- Capital structure – realized or aimed

Discounted Cash Flow Method

- **Discount factors – choice depends on cash flow realization dynamics**
- **Discount factor at the end of the period**

$$d_t = \frac{1}{(1+R)^t}$$

- **Discount factor in the middle of the period**

$$d_t = \frac{1}{(1+R)^{t-0,5}}$$

Discounted Cash Flow Method

8. RESIDUAL VALUE

- Company's operation do not cease in the last year of projection - going-concern presumption implies infinite future existence
- Gordon model – capitalization of cash flow in residual period
- Residual cash flow:

  cash flow in the last year x long term growth rate
- Presumption: stabilized and normalized NNT in the last year
- Capitalization rate:

  discount rate – long term growth rate
- Discount factor is the same as for the last year of projection

Discounted Cash Flow Method

9. CALCULATION OF PRESENT VALUE

- **Value of capital = sum of present values of cash flow + present residual value**

Residual growth rate	2.50%					
Discount rate	14.58%					in 000
	I	II	III	IV	V	Residual
NET CASH FLOW	272,497	255,824	289,236	313,560	128,402	131,612
Discount factor	0.934	0.815	0.712	0.621	0.542	0.542
Present value of net income	254,572	208,588	205,826	194,745	69,601	71,341
Sum of net income	933,332					
Present value of residual	590,669	Residual value		=		1,089,682
Value of (invested) capital	1,524,001					

Discounted Cash Flow Method

10. FINAL CORRECTION

- In case of definition of cash flow before debt servicing, it is necessary to subtract long term liabilities

- In both cases it is possible to perform the final correction for non-operative assets, unutilized operative assets, surplus/shortage of working capital...

- Discounts and Premiums....

Discounted Cash Flow Method

11. LOGICAL CONTROL

- Accord of projections with the existing capacity
- Prices projection – inflation expectations – government regulation
- Comparison between projected and realized profits
- Comparison of projected profit with comparable companies
- Comparison of previous projections with actual results, as well as current projections

VII
Discounts and Premiums

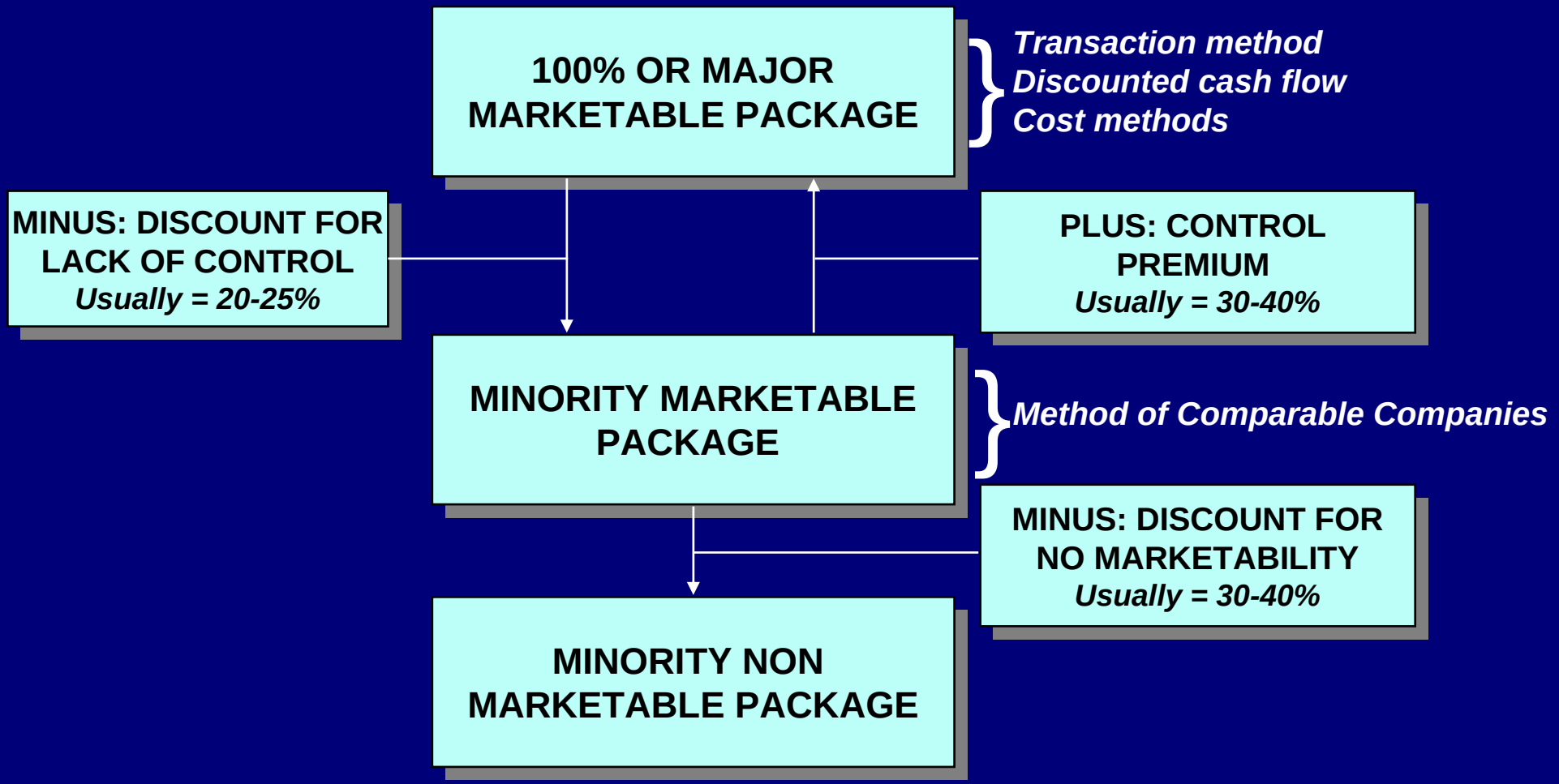
Discounts and Premiums

Discounts and Premiums

- Increase / decrease of value depends on subject of appraisal (owner's interest), applied method, and starting assumptions and data

- Discounts / premiums on different basis
  - ➔ Control degree
  - ➔ Marketability of shares
  - ➔ Package size
  - ➔ Voting rights
  - ➔ Key person

Discounts and Premiums



VIII
Conclusion on Value

Conclusion on Value

MAKING THE CONCLUSION ON VALUE

- Different results from different methods
- Possible combinations
  - ➔ Accepting one method
  - ➔ Quantitative weighting
  - ➔ Qualitative (subjective) weighting
- Factors of significance for weight selection
  - ➔ Nature of business and engaged assets
  - ➔ Purpose of appraisal and definition of value
  - ➔ Value principles
  - ➔ Range and quality of used data
- In any case support facts are required
- Balance sheet is composed after the appraisal

Conclusion on Value

COST APPROACH

- **BENEFITS**
  - ➔ It is based on existing assets, it is less speculative
  - ➔ It is easy to explain
  - ➔ It is adjustable to different types of companies

- **DEFICIENCIES**
  - ➔ Frequent errors in appraisal of goodwill and intangible assets
  - ➔ It is essentially static, future results of a company are not considered
  - ➔ Existing level of profit, profit rates etc are not considered

Conclusion on Value

MARKET APPROACH

- **BENEFITS**
  - ➔ **Method primarily based on market data**
  - ➔ **Reflects current activities of buyers and sellers**

- **DEFICIENCIES**
  - ➔ **Difficulties in providing data for comparable companies**
  - ➔ **Significant adjustments are necessary**
  - ➔ **Based on past data, not considering projections**

Conclusion on Value

RETURN APPROACH

- **BENEFITS**
  - ➔ Method which includes projection of expected income, costs, investments etc
  - ➔ Includes the aspect of market data in calculation of the return rate
  - ➔ Provides a measure of economic obsolescence

- **DEFICIENCIES**
  - ➔ It is very difficult to predict the development
  - ➔ It is speculative in essence
  - ➔ Projections of management are mostly too optimistic

Conclusion on Value

- If the value obtained by market and return approach is significantly lower than net assets, it is then indicator of economic obsolescence. Is the net assets method going to be considered in the final appraisal?
- Investor is prepared to invest only in those companies that will provide adequate rate of return
- If the value obtained by market and return approach is higher than net assets, it is then indicator of goodwill and intangible value of the business. Should appropriate value, obtained by net assets method, also be considered?
- Common sense should be utilized in the conclusion. Final evaluation should be based on all available results and information, as well as logical conclusion making

IX
Report
on Appraisal of Equity

Report on Appraisal

CONTENT OF REPORT ON APPRAISAL OF EQUITY

- Letter
- Engagement definition
- Data on company
- Macroeconomic analysis
- Branch analysis
- Financial analysis
- Methodology applied
- Appraisal of value (implementation of selected methods)
- Conclusion on appraised value
- Statements and qualifications of appraiser
- Statement of management on authenticity of data (Representation letter)
- Attachments