CORPORATE & EQUITY VALUATION APPROACHES

Presentation of Approaches and Influential Factors of Value

How the Approaches Interact, Why They Are Used for Different Purposes and How to Apply the Valuation Approaches via a Weighting Methodology

NICHOLAS IR. GEORGIADIS

PhD THESIS submitted to the

Department of Accounting and Finance

UNIVERSITY OF MACEDONIA

Thessaloniki, Greece, 2015

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STATEMENT OF ACADEMIC HONESTY WITH REGARD TO THE PhD THESIS

By this statement I declare the authenticity of my entire contribution and work carried out in this thesis. I further declare that no plagiarism and collusion have taken place during the writing of this thesis.

Honorably

Nicholas Ir. Georgiadis

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INTRODUCTION/SYNOPSIS AND STRUCTURE OF PhD THESIS

After the introduction of the CAPM model by Sharpe (1964), Lintner (1965), Treynor (1965) and Mossin (1966) independently, building on the earlier work of Markowitz (1952), the valuation of corporation has started to be founded and utilized broadly. Following the establishment of the corporate valuation theory many researchers have contributed to its further development while different methodologies have been introduced. Despite the development of many different valuation models throughout the years, the most commonly utilized by the corporate and academic community for the valuation of a company are the four major valuation approaches which are summarized to Present Values or Income Approach, Asset Values or Asset Based Approach, Multiples or Market Based Approach, and Options Based Valuation or Options Pricing.

However, rarely the valuation of a firm is solely based on one of these approaches. Instead a weighting is performed among the output of each model in order to take into account the different valuation approaches and their influential factors of value. The respective weighting of the outputs which is commonly referred to as the weighted valuation is the most popular and most utilized process in the global business environment among valuation practitioners and financial analysts. When valuing a company, the estimator or financial analyst initially selects a range of valuation methodologies / approaches which at a later stage weights to extract the weighted valuation outcome with regard to the subject company.

However so far there has not been defined a technique determining the precise weights of the selected valuation methodologies or approaches in order to derive the weighted corporate value. It can therefore be very useful to develop a selection and most importantly a weighting technique that determines in a more transparent manner the precise weights of the four major valuation approaches mentioned above and discussed in this thesis. Therefore, the purpose of the current PhD Thesis is to aggregate and present information with regard to the “background” and concept of the four major Corporate and Equity Valuation Approaches, and develop a methodology in order to weight the output of each model based on the influential factors of value, the interactions and the purpose of use of the approaches.

The PhD Thesis is structured as follows:

-- Chapter 1 constitutes an introduction to corporate valuation approaches and presents the aim and objective of the current Phd thesis.

-- Chapters 2 present in synopsis the four major methodologies / approaches applied in corporate and equity valuation: Present Values or Income Approach, Asset Values or Asset Based Approach, Multiples or Market Based Approach, and Options Based Valuation or Options Pricing. Moreover, in the current chapter a review of the main statements and conclusions drawn in several pieces of academic literature is presented. It also synopsizes a series of notes, opinions and references expressed by corporate valuation practitioners. The chapter also presents and / or discusses the approaches' influential factors of value.

-- Chapter 3 presents the methodology and the factors taken into consideration for the development of the new weighting methodology proposed in the current Phd. In addition the current chapter sheds light on additional influential factors of value or determinant factors regarding the selection of a valuation approach for any given valuation case or subject company.

-- Chapter 4 presents the results of the new developed methodology, applied on selected companies of different business segments, sectors or industries.

-- Chapter 5 presents the concluding remarks of the current PhD thesis.

In conclusion, the deeper understanding of the corporate and equity valuation approaches and their influential factors of value can be of great assistance to the valuator who needs not only to justify the selection of the most appropriate valuation approaches in any valuation case / assignment but also to determine the precise weighting of the valuation approaches selected.

Important Notes:

The presentation of the valuation approaches and the literature review in the PhD Thesis are based on academic research as well as on practitioners' views and applications from a wide range of geographic markets and economies. Research findings, views and discussion statements with regard to valuation practices originated from practitioners and academicians in Europe, Americas and Asia.

The PhD Thesis does not deal with any conception, development and practical application of valuation models. It presents and discusses the already known models that are utilized by academicians and professionals.

Throughout the thesis, the term valuator or analyst is used to denote the individual performing the task of valuation, whereas the term subject company is used as a general reference to any company that is an object of valuation. The terms "valuation approach" and "valuation methodology" are used identically.

1. CHAPTER 1: INTRODUCTION AND AIMS & OBJECTIVES OF THE STUDY

1.1. CORPORATE & EQUITY (or BUSINESS) VALUATION APPROACHES

1.1.1. INTRODUCTION

Value creation derives from a company's ability to use capital and generate cash flows which exceed the cost of capital. By this way, the shareholders and investors of the company[1] can receive positive returns from their investment in the company.[2] This approach is also an indicator of how companies should operate and which specific targets should seek. The primary target of a company should be the achievement of above the average return on invested capital (ROIC). Once companies succeed on that, then they should care for growth in order to maximize their returns on absolute terms. At this stage, it is equally important for a company that growth derives from investments which continue to generate strong ROIC ratios. Another school of thought goes even beyond the above approach and supports the view that the company not only should attain above average ROIC but also generate strong cash flows combined with high profit margins in order to increase value.

1.1.2. CONCEPT OF CORPORATE VALUE IN PRACTICE

In most practical cases, valuation methodologies produce a company's value which is what the company will be worth today if the buyer or the management improve or even maximize its performance in future. On the other hand, the company's price is the amount that the buyer would be willing to pay in order to buy the company from the seller. It might be the case that the buyer acquires a company for other reason than to improve or maximize its performance (for example in order to sell pieces of it in the market at higher prices separately).[3] According to the views of corporate valuation practitioners there is a critical distinction regarding the concept of corporate value. Most of them when valuing businesses view corporate (or business) value as either value in exchange or value in use. The two alternative types of value are defined as follows:

[1] Corporation, company and firm are used as identical terms in this thesis.
[2] McKinsey&Company, Dobbs Richard (Seoul), Huyett Bill (Boston) and Koller Timothy (New York), May 2011, Value: The four cornerstones of corporate finance, Knowledge Bulletin.
[3] Known as "asset stripping".

Value in Exchange: It is the value agreed in a direct transaction between a seller and a buyer in the marketplace and represents the value of the company or the asset as individual item.

Value in Use: It is the value of a company or an asset on a going concern basis. A group of companies may acquire and operate a company to generate synergies and maximize their income. Likewise, a company may purchase and utilize an asset as part of its production process to maximize revenues and profits. In both cases a value can be established prior to the purchase of the asset or the acquisition of the company which is the value in use. In this case, the company or the asset is valued without the purpose of a specific transaction in mind. The extracted value is also known as fair value or fair market value. [4]

Based on the above concept, valuators / analysts are in better position to comprehend, demonstrate and substantiate the concept of value for any company or asset. For instance, a special purpose fixed asset which is essential in a certain production process (as a part of a going concern) may be characterized of significant value in use and of less significant value in exchange. If it is sold separately it will provide limited benefits to the buyer unless it is destined for a similar production process. The same holds for a company. For example, a distribution network company which fits in several business sectors can have significant value both in exchange and in use. On the other hand, a specialized IT services company which fits in limited cases of IT business groups may have significant value in use but lower value in exchange. In the case of company valuation or valuation of business interests, the concept of "going concern" is essential in deriving the fair value. Under this concept, a business can be valued with the use of an income or market based approach as it will be discussed in the next chapters.

In order to determine a value in exchange or a value in use of a company or an asset, is therefore essential for a valuator to map the market, detect potential candidates and derive the value based on the most applicable scenarios. A purchaser that would make the most use of the asset or the company under sale would be most likely willing to pay a premium. In this case, the value of the asset or the company can be maximized. The inverse applies of course. The profile of potential acquirers of an asset or a company is critical information to a detailed value assessment. Whenever a market of potential buyers does not really exist, it has certainly a negative effect on valuation.

[4] In most valuation cases in practice, Fair Market Value (FMV) is not designed with any particular individual in mind, nor the "real" transaction for that matter. FMV is a hypothetical value for the model transaction. The governing conditions in this ideal concept are full knowledge and freedom to act. But in reality, these ideal conditions are rarely present. Emotional and subjective elements often override rational considerations, and full knowledge is something rarely attained by the arm's-length potential buyer who previously has not been involved in the business.

Therefore it is common knowledge in the market place that every business has a "best owner" who is willing to purchase this business at its maximum possible value or price. This concept also implies that there may not be one fair value regarding any business or company since the value depends on who owns and runs the business. A passive investor would naturally pay less for a company than a strategic investor who has knowledge of the company's business and is in position to consciously take critical decisions on how to develop and grow it.[5]

1.1.3. CORPORATE AND EQUITY VALUATION APPROACHES

The examination of numerous academic papers, university text books, practitioners' articles and other related sources indicates that there are four major valuation approaches in valuing a company or a business and these are utilized internationally:

- Present Values (Income Approach)
- Asset Values (Asset Based Approach, including Liquidation Method)
- Multiples (Market Based Approach)
- Options Pricing

These approaches are generic and have led to a significant number of different or alternative versions, methods, techniques and formulas in valuing a company. The selection of a specific approach or technique for business valuation depends on the following, among other, factors:

1) The valuator's experience with similar, different or diverse valuation assignments.
2) The valuator's judgment about the objective and mission of the valuation.
3) The nature and the number of the potential acquirers.
4) The circumstances, events and developments surrounding the business activities.
5) The nature of the business to be valued; If it is a going concern or not.
6) The stability of the earnings and the quality of forecasted data.

The above factors are discussed in the next chapters and sections of the thesis. In most cases, the valuator will select a combination of suitable methods in order to strengthen the final valuation conclusion.

[5] At the dawn of 21st century, General Mills decided to acquire Pillsbury from Diageo paying USD 10.4 billion in a stock for stock deal. Following the acquisition, General Mills increased Pillsbury's cash flows by USD 400 million and operating profit by 70%. This happened because unlike Diageo, General Mills was in the same core business as Pillsbury and thus General Mills, by utilizing its extensive market know how, assisted the acquired company to substantially reduce its operating costs.

The concept of the major and most commonly utilized valuation approaches internationally, their description and philosophy in synopsis are presented below:

- Present Values: The corporate value stemming from the respective model is the sum of all the future benefits (such as cash flows, earnings or dividend streams) discounted into the present
- Asset Values: The corporate value sourced from this method is the sum of the company's separate tangible and intangible assets that can be resold in the marketplace.
- Multiples or Relative Valuation: The corporate value estimated from this model is calculated based on average multiples (such as the price earnings ratio among several others) of a group of comparable companies or the peer group
- Options Pricing: The respective method is applied in companies that have a collection of owned but not actually used assets, which therefore entail the option to generate future income (e.g. oil-drilling well, etc.)

Table 1: Major and Commonly Used Valuation Approaches

Valuation Approach	**Description and Philosophy in Synopsis**
Present Values	Corporate value is the sum of all future benefits (such as cash flows, earnings or dividend streams) discounted into the present.
Asset Values	Corporate value is the sum of the company's separate tangible and intangible assets that can be resold in the marketplace.
Multiples	Corporate value is based on average multiples (such as the price earnings ratio among several others) of a group of comparable companies.
Options Pricing	It is applied in companies that have a collection of owned but not actually used assets, which therefore entail the option to generate future income (e.g. oil-drilling well, etc.)

Sources: American Society of Appraisers, Institute of Business Appraisers Inc.

Present value approach is technically "tough" to apply approach since it incorporates numerous forecasts and assumptions that have to be justified. It is therefore highly

scientific approach but it is also an art. Asset value approach is technically more applicable since it mostly encompasses historic rather than projected assumptions. Multiples approach is relatively simple and widely used from practitioners, whereas options pricing is a specialized and highly scientific approach that is technically complex and used in specific cases of business valuation.

1.1.4. EXPLANATION OF KEY FACTORS AFFECTING VALUATION

In general, in most valuation approaches, accounting is involved in both the numerator and the denominator of a valuation model. Therefore it is not an exaggeration to say that the credibility of a valuation methodology / approach lies also on the credibility of the accounting standards and principles applied. As mentioned previously, in the present value approach, which is considered as one of the most demanding valuation tasks, when valuing companies, valuation becomes a process that involves the projection of a company's financial performance in terms of revenues, expenses and income as well as in terms of investments that have to be made to generate revenues and the financing structure of such investments. In other words, valuation process involves the forecasting of payoffs for assuming a certain level of risk when owning a company or when holding shares of a company. In a second stage in the valuation process, the future payoffs have to be discounted to present values to estimate the company's current value. Certainly the projection of such series of financial figures during the valuation process becomes a matter of utilization of accounting statements and data.[6] The forecasting is based on historic accounts drawn from a company's financial statements.

In a significant majority of valuation techniques and methodologies (mainly present value techniques), several assumptions have to be made from subjective judgments on behalf of the analyst or valuator. The assumptions may refer to a series of factors that affect the subject company's business going forward and consequently the cash flow forecasts that have to be drawn. Which and how many factors affect a company's valuation cannot be standardized for every valuation case, however in general a significant number of factors have to be considered and determined as to the extent they might affect cash flow forecasts and the subject company's risk profile.

Such indicative factors may be the following:

-- Management and operational team skills;
-- Team's knowledge of the market / sector, domestic and / or international;

[6] Penman Stephen H. (2010), Financial Forecasting, Risk and Valuation: Accounting for the Future, ABACUS, A Journal of Accounting, Finance and Business Studies.

-- Economic conditions in the operating markets / sectors;
-- Macroeconomic conditions;
-- The effect of competition on prices and profit margins;
-- Analyst's / valuator's personal views on the business valued or the market which the business operates in.

The following table is a "risk matrix" with factors that have to be assessed in a typical valuation case. For each factor a current status, at the time of valuation, has to be determined which then will lead to a risk rating based on a subjective judgment on behalf of the valuator or analyst. Despite its subjectivity, the judgment will have to be justified thoroughly. In the following table, the treatment of each factor is explained as well as the logic for the final risk assessment. The factors presented in the following matrix are indicative. The analyst may have to assess additional issues and factors in a business valuation case.

Table 2: Risk Matrix

Risk Factors	**Current Status**	**Risk Rating** (*)
Years in business	How many years the business is under operation in the market.	The more years a business is present the lower the risk. For example if a business is active for more than 20 years, then the risk may be relatively low.
Relative economic / financial size of company	Large, medium or small, depending on domestic or international standards. A company depending solely on the domestic market will be measured in size based on domestic standards. An international player will be compared in size with its global peers.	The higher the size the higher the risk. A medium size company may imply a moderate risk. The flip side of the coin may indicate that large size companies are less vulnerable to risks.
Management depth	The management's knowledge and understanding of the business and the market.	The higher the knowledge the lower the risk factor. Moderate management knowledge may imply higher risk.

[This table continues in the next page.]

[This table continues from the previous page.]

Risk Factors	**Current Status**	**Risk Rating** (*)
Geographic concentration	Where the company is active. Domestically or internationally or both?	The narrower the geographic presence the larger the risk. Or in other words a lower risk may apply to a company which is geographically diversified.
Size of market	The size of market implies the target revenues for the company.	A moderate size of a market may imply a moderate risk ("not too much in stake for the subject company").
Price competition	The nature of competition and its effect on prices and market shares.	The stronger the competition the higher the risk.
Strength of market	A market may experience strong, weak or volatile growth patterns over time and that defines the level of endurance or stability ("safety") of the market's aggregate development.	The lower the strength the higher the risk factor.
Business cycle	The nature of business cycle: Growth and peak versus recession and bottom.	When a business cycle reaches its peak the risk increases.
Ease of market entry	How easy may be for competitors to enter the market and capture market shares.	The easier to enter the market the higher the risk.
Ease of market exit	How easy or difficult is for the company to sell its existing operations without incurring exceptionally high costs.	The easier to exit the market the lower the risk.

(Source: Deloitte Valuation Advisory Report, Dewan Architects & Engineers)
(*): In several of these ratings, the "flip size of the coin" may also exist or apply. The ratings are indicative and are solely presented to demonstrate the broader concept.

All the above as well as additional factors, when examined and assessed, assist the valuator in projecting the subject company's future cash flows on a more solid basis and calculating its business risk with greater precision.

1.1.5. AIM AND OBJECTIVE OF THE CURRENT THESIS

As noted above, four are the major valuation methods utilized in order to evaluate the value of a company: 1) Present Values or Income Approach; (2) Asset Values or

Asset Based Approach; (3) Multiples or Market Based Approach; (4) Options Based Valuation or Options Pricing.

In the real world however to value a company none of the previously presented valuation approaches is used autonomously except for very rare and / or specialized valuation cases. Instead a weighting is performed in order to take into account the different valuation approaches and their influential factors of value. The weighted valuation is the most popular and utilized process in the global business environment among valuation practitioners and financial analysts. When valuing a company, an estimator initially selects a range of valuation methodologies / approaches which at a later stage weights to extract the weighted valuation of the subject company.

So far there has not been established a technique in order to determine the precise weights of the selected valuation methodologies / approaches which are utilized to derive the weighted corporate value. It can therefore be very useful to develop a selection and most importantly a weighting technique that determines in a more transparent manner the precise weights of the four major valuation approaches.

Therefore, the aim of the current PhD thesis is to develop a simple and practical "corporate valuation approaches weighting technique" utilizing the majority of factors that influence the corporate value or affecting the criteria by which a valuation approach is selected and allocate the respective weights to each valuation outcome in order to produce a final fair value. The logic behind this technique is that all four valuation approaches may not be to the same extent appropriate, or may not be even possible to apply, for every valuation case and for every business available in the market place. Therefore there is the need to rank the importance of each of the four valuation approaches and then weight them accordingly. The technique that will be presented is based on the selection and ranking of certain value influencing factors which are then provided with a rating according to the strength or weakness each factor presents in the case of the particular company that is to be valued. The rating is based on a simplistic scale of points.

2. CHAPTER 2: LITERATURE REVIEW

2.1. REVIEW OF SELECTIVE ACADEMIC LITERATURE, REFERENCES AND PRACTITIONERS' VIEWS ON CORPORATE VALUATION APPROACHES

2.1.1. INTRODUCTION

The current chapter presents major views and conclusions drawn in several pieces of academic literature with respect to the factors that affect the valuation approaches chosen in each case. In addition, it presents in synopsis the four major methodologies / approaches applied in corporate and equity valuation: Present Values or Income Approach, Asset Values or Asset Based Approach, Multiples or Market Based Approach, and Options Based Valuation or Options Pricing. The chapter also presents and / or discusses the approaches' influential factors of value. It also synopsizes a series of notes, opinions and references expressed by corporate valuation practitioners.

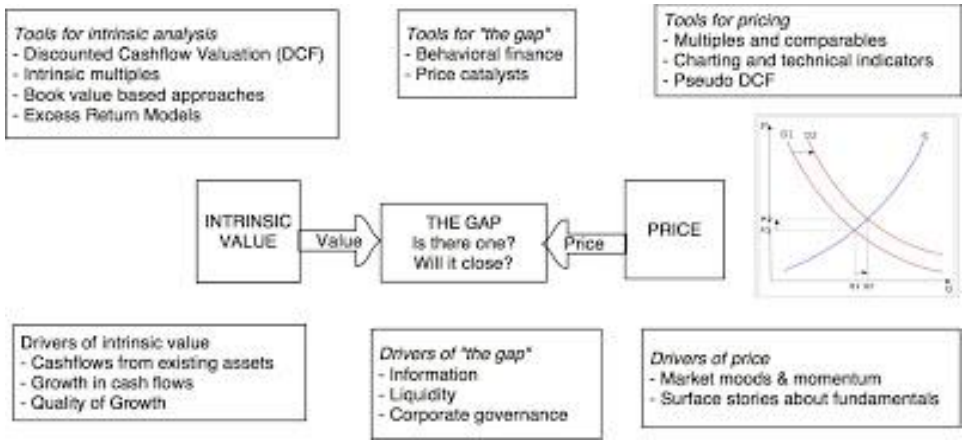
2.1.2. REVIEW OF SELECTIVE ACADEMIC LITERATURE AND VALUATION PRACTITIONERS' VIEWS

Damodaran in 2013[7] underlined that "…valuation and pricing are two different processes and (the fact) that many analysts / investors are often confident about one does not imply confidence about the other…". The distinction between valuation and pricing is an important first stage prior to selecting the most appropriate methodology for valuing a company. Damodaran defines valuation and pricing as follows: On the one hand, the value of a business is based on projecting cash flows, by determining the underlying risk of these cash flows and estimating the company's potential growth. In this sense, the value may derive from the company's intrinsic value or fair value of its business. On the other hand, pricing mostly refers to a publicly traded company and depends on demand and supply of the market, liquidity and other relevant factors. Therefore to value a company an analyst should use methods such as discounted cash flows (present value or income approach) and book value (asset) based approaches. On the other hand to price a company, an analyst should use

[7] Damodaran Aswath (7 February 2013), Musings on Markets, Professor of Finance, New York University, Leonard N. Stern School Finance Department.

multiples and comparables (market based approach) or charting and technical indicators.

Figure 1: Pricing versus Valuation of a Company / Stock



Source: Aswath Damodaran, Professor of Finance, New York University.

Damodaran argues that the "intrinsic value versus price" gap is driven by certain factors such as behavioral finance[8], information[9], liquidity[10], corporate governance, etc. To close the gap, Professor Damodaran argues that the price has to move towards the value and such shift will be done provided a number of factors are placed in effect. For example, the market and investors have to be convinced that the subject company's stock is undervalued and that there are solid reasons the gap should shrink and ultimately close. This is precisely the task of equity analysts of brokerage firms and investment banks who frequently present equity research reports on the values of listed companies by comparing them to their pricing in the stock market. Analysts tend to point out that there is a gap between the value of a stock and the pricing of this stock, and once the market understands that, the gap will ultimately close.

[8] Behavioral finance among other things may refer to the momentum characterizing a listed company and its stock. For example, whether institutional investors are in a buying mood for this stock, or whether equity analysts are in favor of this stock, etc.

[9] Information refers to what the market does not yet know about a listed company and its stock. For example, if the market misses positive information about this stock, it will soon see it and close the gap between pricing and value.

[10] Liquidity may refer to whether there is a value – pricing gap due to lack of trading depth of a certain stock. For example, is it possible for the price of a stock to stay different from its value until the trading picks up?

Murray Brian, a corporate valuation practitioner[11], discussed in a note (2012) the influential factors of the market valuation methodology (multiples approach or guideline / comparable companies approach). Murray mentioned factors such as the quality and quantity of data available of the selected comparable companies[12], the key personnel, the large customers, the proprietary technology, and the condition of equipment of the subject company as they all may have influenced the share price or transaction value. Finally, Murray concluded that a reliable sample should include ten to twenty comparable companies.

Statz Al (June 22, 2009) in the article "Does Size Matter in Business Valuation?" claimed that depending on a private company's size[13], price earnings ratios used in business transactions may vary significantly. For example, companies under $50 million typically sell for considerably lower price-to-earnings multiples than companies from $50 to $500 million, whereas companies over $500 million typically sell for even higher multiples than those from $50 to $500 million. Statz also mentioned business valuation expert Shannon Pratt, who is widely recognized as the "father" of privately held business valuation and had stated that "…Larger companies are less risky, and therefore, are priced in the market reflecting lower discount rates and higher market multiples…" Therefore for large size companies the gap between pricing and valuation may also be contracting. This may imply that multiples are more meaningful for larger size companies than for smaller size companies which tend to treated with higher discount rates in valuation.[14]

Psarouthakis J.[15] (February 2008) in the article titled "Valuing and Pricing the Company" also touched the distinction between a company's value and price. Psarouthakis noted that the company's value relates to the improvement that can be made by this company's buyer whereas price refers to the payment an acquirer is willing to make to the seller of this company. According to the author, the calculation of value as well as the selection of the appropriate valuation approach can be a complex process which can be assigned to professional appraisers such as the American Society of Appraisers, and / or the Institute of Business Appraisers, Inc. Psarouthakis also mentioned **Lawrence Tuller**, a well known finance practitioner and author of books, who identified four common approaches for valuing mid-sized businesses: (i) earnings multiple; (ii) Net asset value; (iii) Historic cash flow generation; and (iv) Discounted cash flow method. Among the influential factors of

[11] Wisconsin Business Value Blog.
[12] Murray noted that "…some appraisers will review hundreds of companies searching for the one or ones most comparable to the subject company."
[13] Expressed in revenues.
[14] Conclusion made by the writer of this thesis.
[15] Dr. John Psarouthakis, Founder and former CEO, JPIndusries,Inc., a Fortune 500 industrial corporation. Publisher of www.BusinessThinker.com.

value[16], Psarouthakis mentioned the existence or not of hard assets in the subject company, the creation of large goodwill in a business, and the potential synergies between the acquired company and the buying company. Psarouthakis finally made an effort to answer the question "which is the best approach?" by admitting that this may depend on criteria such as the ease of calculation, the stage of negotiations in a deal making process, etc.

Fernández Pablo[17] (February 2007) in the research paper titled "Company Valuation Methods and the Most Common Errors in Valuations" underlined the importance of valuation approaches both in mergers and acquisitions as well as in identifying the real economic value creation drivers behind the subject company. Fernandez classified the major valuation approaches in six groups as depicted in the following figure:

Figure 2: Categorization of Major Valuation Approaches

MAIN VALUATION METHODS					
BALANCE SHEET	**INCOME STATEMENT**	**MIXED (GOODWILL)**	**CASH FLOW DISCOUNTING**	**VALUE CREATION**	**OPTIONS**
Book value Adjusted book value Liquidation value Substantial value	Multiples PER Sales P/EBITDA Other multiples	Classic Union of European Accounting Experts Abbreviated income Others	**Equity cash flow** **Dividends** **Free cash flow** **Capital cash flow** **APV**	EVA Economic profit Cash value added CFROI	Black and Scholes Investment option Expand the project Delay the investment Alternative uses

Source: Pablo Fernandez, Professor of Corporate Finance, IESE Business School.

Fernandez noted that valuation approaches based on cash flow discounting had become increasingly popular among practitioners and attempted to answer the question "which is the best method to use?" For this purpose, Fernandez distinguished valuation approaches based on historic elements and data from those based on projected data and prospects with regard to the company. The Professor noted that "…The most suitable method for valuing a company is to discount the expected future cash flows, as the value of a company's equity - assuming that the company continues to operate - arises from the company's capacity to generate cash (flows) for the equity's owners." Finally, Fernandez offered views about which valuation approach should be used depending on the nature of the subject company such as holding companies, utility companies, banks, industrial companies and commercial companies[18].

[16] They are factors to consider when valuing or pricing a company.

[17] Pablo Fernandez, Professor of Corporate Finance, IESE Business School, University of Navarra, Spain.

[18] Fernandez stated that holding companies should be valued via the liquidation method, utility companies via the present values approach (DCF), banks via the multiples and net asset value, and industrial / commercial companies via the DCF and multiples.

Samis M., Laughton D., and Poulin R. (September 2003) in their working paper titled "Risk Discounting: The Fundamental Difference between the Real Option and Discounted Cash Flow Project Valuation Methods" noted among others the following: (a) In contrast to the conventional approach of discounted cash flow (DCF), the real option valuation approach is able to recognize additional value of a business taking into account the management's flexibility. (b) The two approaches apply the risk factor at a different level, meaning real options at the top line, whereas cash flow and DCF at the bottom line cash flow. (c) Real options approach may offer a better ability to account for cash flow risk than DCF methodology. (d) It is important for any valuation approach to recognize the influential factors of value such as the risk and the timing of the projected cash flows.

Colwell David, Henker Thomas and Ho John (September 2002) in their research paper title "Real Options Valuation of Australian Gold Mines and Mining Mines" concluded that conventional discounted cash flow valuation techniques were inappropriate for mining companies as "operational flexibilities were an essential component of mine values". Instead they found that the real options model was a useful tool for the description and valuation of operational flexibilities of such businesses. In relevance to the period of reference, there was a discussion in the **Linkedin Business Valuation Group** (2012) by valuation practitioners attempting to answer the question "how to value a mining company?" Among other points, the discussion noted that big auditing firms were valuing mining businesses via a decision analysis based on real options. The influential factors of such valuation could be relating to issues such as proven, probable and possible reserves, environmental liability associated with the cleanup, status of the mine, etc.

Liu Jing, Nissim Doron, and Thomas Jacob (August 2000) in their research paper titled "Equity Valuation Using Multiples" examined the valuation performance of a list of pricing multiples and concluded that forward earnings multiples explained stock prices very strongly for most firms. The authors noted the following general ranking in terms of relative performance: (1) Forward earnings measures; (2) Historical earnings measures; (3) Cash flow measures and book value of equity; and (4) Sales. They also contrasted the view that different industries have different "best" multiples.

Oren Füerst and Sok-Hyon Kang (2000) underlined the following conclusions with regard to whether ownership and governance characteristics are associated with the firm's operating performance, stock price and corporate value: (1) Higher share ownership of a company's CEO and corporate insiders has strong positive impact on the company's financial performance and its market value[19]. (2) When this ownership exceeds a certain threshold and becomes excessive, the impact turns from positive to

[19] In this citation, market value may imply market pricing rather than valuation.

harmful. (3) The negative impact, if any, of the controlling shareholder is mostly reflected into a share price discount and less into lower operating performance of the subject company. (4) Large ownership of outside shareholders has a negative effect on the subject company's operating performance. (5) Increasing the number of outside directors without a corresponding increase in their share ownership, has non-positive or negative impact on the subject company's operating performance or market value. [20]Therefore strong but not excessive ownership by a company's corporate insiders and strong governance characteristics positively favor operating performance and market value contracting at the same time the gap between pricing and valuation. This may imply that in such cases, the use of both income and market based approaches is consistent with the role and impact of these factors on valuation.[21]

Cash Flow (CF) model. **Lundholm Russell, O'Keefe Terry** (30 December 2000) in their paper titled "Reconciling Value Estimates from the Discounted Cash Flow Model and the Residual Income Model" supported the view that given forecasted financial statements and an exogenous cost of equity capital, both models can derive the same value estimate[22]. They also noted that prior research "…says nothing about the superiority of one model over another…" **Francis et. al.** (2000) used five years of ValueLine estimates for the finite forecasting period and assumed that the terminal period growth rate is either zero or four percent. They motivated their work by stating "we try to replicate the typical situation facing an investor using a valuation model to calculate an estimate of the intrinsic value of a firm." They concluded that "RI value estimates dominate value estimates based on free cash flow or dividends." **Courteau, Kao and Richardson** (1999) demonstrated that alternative valuation models or techniques tend to produce an equivalent outcome when a price-based terminal value is used. **Penman and Sougiannis** (1998) examined alternative valuation techniques focusing on the following practical issue: dividend, cash flow and earnings approaches are equivalent when the respective payoffs are projected to infinity, however in practice forecasts are made over finite periods, for example 5 or 10 years. They concluded that "…techniques based on forecasting GAAP accrual earnings yield lower valuation errors that those based on forecasting dividends or cash flows..."

Penman Stephen H. (July 1997) in the paper "Combining Earnings and Book Value in Equity Valuation" dealt with the question which of the two multiples, price to earnings multiple or price to book value multiple, should an analyst use given that each of the two produce a different valuation outcome. The paper proposed that both

[20] Conclusion made by the writer of this thesis.

[21] Whether an ownership is strong or excessive or whether governance is strong or not, may be a subjective judgment or may be based on a methodological technique.

[22] "…If the user starts with forecasted financial statements and an exogenous cost of equity capital then getting the same value estimate out of each model is only a matter of care..."

multiples should be combined to extract the valuation of the subject company by utilizing weights for those two. Penman noted that "…the weights differ over time: when earnings are small relative to book value the weights are different from when earnings are large relative to book value…"

Alford A.W. (1992) in the article "The Effect of the Set of Comparable Firms on the Accuracy of the Price Earnings Valuation Method" contemplated the importance of matching firms based on industry and ROE (return on equity) in performing valuation via the market (multiples) approach. Alford concluded that "…matching firms on industry and ROE produces the lowest errors for a set of methods for determining the P/E ratio…"

Corporate valuation practitioners have noted in general that selecting a valuation approach may also be dependent on who is looking to value the subject company. For example, banking institutions appraising companies which have borrowed capital from them, may be looking at the liquidation value of these companies, and that is a different valuation approach.

In academic literature there are also discussions on the selection of one valuation approach over another. Such are the references dealing with empirical comparisons between two major present value approaches, the Residual Income (RI) model and the

2.1.3. CONCLUSION

This short review of selective academic literature and practitioners' views confirmed that there has been considerable discussion among academicians and valuation practitioners about the corporate valuation approaches, the influential factors of value as well as about the interaction and suitability of these approaches. The views expressed by academics and practitioners illustrated the use of different valuation approaches for different purposes, objectives, etc. When valuing a subject company, an estimator would normally select and apply the most appropriate valuation approaches and then weight them to extract the subject company's value. However there is no applicable technique to determine the most appropriate approach as well as the precise weights of the selected methodologies / approaches which will be used in a valuation case. Furthermore, corporate valuators and financial analysts have not so far developed an explicit quantitative / qualitative technique to "promote" one valuation approach over another or to determine their weights when the selected approaches are more than one. The selection or the weighting of valuation methodologies / approaches depends on a number of conditions and factors which can be recognized and classified in order to produce a weighting technique. The following section presents the four major valuation approaches.

2.2. PRESENT VALUES (also known as INCOME APPROACH)

2.2.1. INTRODUCTION

The present values or income approach derives the corporate value based on a stream of future earnings, cash flows or other benefit streams generated by a company. These future streams are discounted to present values via an interest rate (discount rate) representing the company's cost of capital whereas the sum of all present values represents the subject company's valuation. The approach resembles to the widely known and generic bond valuation technique which discounts the bond's future income (coupon and principal payment) to the present time in order to extract the bond's current value (Fernandez, 2012). [23] The following sections of this chapter discuss and highlight the most common methodologies and / or techniques that have been developed under the income approach concept.

2.2.2. DISCOUNTED CASH FLOW (DCF) METHODOLOGY

Discounted Cash Flow (DCF) is one of the most popular methodologies in valuing companies among equity and financial analysts. It is also widely used from corporations for new ventures and investment projects. [24] [25] [26] Its popularity as well as validity stems from the fact that it is one of the very few methods that takes into account three fundamental factors:

[23] Company's valuation based on discounting cash flows originates from the practice of valuing government bonds via discounting their annual payments of interest and the final repayment of the capital. This view is also supported by Pablo Fernandez via his paper titled "Valuing Companies by Cash Flow Discounting: Fundamental relationships and unnecessary complications", July 30, 2012.

[24] Empirical evidence demonstrates that in the most developed economies where there is greater market transparency and better corporate governance practices, the detail analysis oriented DCF method is the most popular among finance practitioners and corporate executives. However, the DCF method is often complemented with other valuation techniques, such as comparable companies and transactions, to maximize the relative validity of the final valuation result. Source: Bruner et al (1998).

[25] Pereiro Luis E., "Valuing Companies in Latin America: What are the Key Issues for Practitioners?", Universidad Torcuato Di Tella, Argentine. "…In Argentina almost 90% of corporations and 73% of financial advisors and private equity funds (PEFs) use the DCF method as primary tool."

[26] When it comes to valuing start-ups, practitioners use DCF approach very cautiously. They usually take into account the probability the startup may not survive in the longer term by adjusting cash flows or discount rate. Professor Aswath Damodaran compiles information on start-ups survival probability. For other practitioners, DCF is not the appropriate approach to value a start-up since the projected cash flows adjusted or unadjusted are highly speculative. If for any reason, a DCF approach is applied, discount rate should stand at the range ~30%-40%.

1) The stream of cash flows generated from the subject company; Cash flows are of monumental importance as real value can be maximized by the ability of a company to generate cash revenues.

2) The timing of the receipt of the company's cash flows.

3) The risk that is embedded in the company.

The fair value of a company based on the DCF method is the sum of the present values of the company's future free cash flows discounted at a rate that best represents the company's capital structure, which may consist of only equity, only debt or both.

Free cash flow is the cash available for the company's shareholders / investors and external lenders after the company has generated earnings and has provided for capital expenditure as well as working capital. Therefore it is the cash that can be distributed in a sense without hampering the company's business operations and growth potential.

The DCF method requires the consideration and analysis of a wide range of parameters, factors, and assumptions for the future, the most important of which are the following:

- Revenues and earnings for an explicit and an implicit time period;
- Cost of sales and expenses projections;
- Investments required to support revenue and earnings projections;
- Current assets' projections;
- Working capital assumptions;
- Capital structure assumptions;
- Estimate of interest rate for discounting the future free cash flows.

Depending on the type of corporate value that can be derived from the DCF method, cash flows can be mainly classified into two types: Free Cash Flow to Firm (FCFF) and Free Cash Flow to Equity (FCFE). The major difference between the two refers to the treatment of debt in deriving the free cash flow. This also determines which discount rate is applied for each type. The table below demonstrates the derivation and use of the two types of cash flow to estimate corporate value:

Table 3: Presentation of FCFF and FCFE

Type of Cash Flow	**Free Cash Flow to Firm (FCFF)**	**Free Cash Flow to Equity (FCFE)**
	EBIT	Net Income
	- Tax based on Effective Tax Rate	+ Non-cash Items
	+ Non-cash Items	- Capital Expenditure
	- Capital Expenditure	+ / - Changes in Working Capital
	+ / - Changes in Working Capital	+ / - Changes in Debt
	= Free Cash Flow to Firm	**= Free Cash Flow to Equity**
Discount Rate Used	Weighted Average Cost of Capital (WACC) consisting of Cost of Equity and Cost of Debt	Cost of Equity
Value Estimated	Enterprise Value = Equity Value + Debt - Cash	Equity Value

Source: Academic Literature, Valuation Practitioners' Applications.

Apart from the above two cash flow types, analysts may utilize additional versions of cash flows based on the precise techniques they apply. Moreover various techniques derive cash flows on a real (excluding inflation) versus nominal (including inflation) basis. In the majority of techniques and versions though, non-cash items have to be added, capital expenditure has to be subtracted and changes in working capital has to be included for the derivation of cash flows. Cash flows are projected for a discrete period of time and as terminal value then after. All cash flows have to be discounted to derive the corporate value. Therefore the calculation or estimation of an appropriate

discount rate is needed. In the DCF method[27], the free cash flows do not incorporate any interest tax shields. The interest's tax deductibility is instead used as a decrease in the calculation of the weighted average cost of capital (WACC).

The following paragraphs present the process and calculation of the critical assumptions needed for the application of the free cash flow to the firm (FCFF) version of DCF.

2.2.2.1. ESTIMATION OF DISCOUNT RATE (WACC)

One of the most critical steps in an income based valuation process, and not only in the DCF method, is to determine the appropriate interest rate for discounting the future cash flows into present values. By purchasing a business / company, the acquirer or investor requires a rate of return generated from (or implied in) the company's future cash flows. The rate of return is determined given the company's risk of achieving the future cash flows. The risk implies the probability of the company not succeeding in generating the projected cash flows thus leaving the investor with a lower rate of return or with no return[28]. As demonstrated previously in the FCFF version of DCF, the discount rate is called weighted average cost of capital (WACC). WACC indicates the cost a company incurs for utilizing both own funds and external capital and therefore it consists of the cost of equity and cost of debt. WACC is estimated according to the following formula: [29]

$$WACC = (E / V) * Re + (D / V) * Rd * (1-Tc)$$

Where:
Re = cost of equity (or Ke)
Rd = cost of debt (or Kd)
E = market value of the firm's equity
D = market value of the firm's debt
V = E + D
E/V = percentage of financing that is equity
D/V = percentage of financing that is debt
Tc = corporate tax rate

[27] Fernandez Pablo (November 2003), "Equivalence of Ten Different Methods for Valuing Companies by Cash Flow Discounting", Working Paper, IESE Business School, University of Navarra.
[28] Or even with negative return if the company incurs losses in future.
[29] As an indication of the range of the cost of capital (WACC), Damodaran notes that a level of 15% for cost of capital locates at the 97th percentile of US stocks. Source: Damodaran Aswath (7 February 2013), Musings on Markets, Professor of Finance, New York University, Leonard N. Stern School Finance Department.

2.2.2.2. CALCULATION OF COST OF EQUITY (Re or Ke)

Among financial practitioners, the Capital Asset Pricing Model (CAPM) is the most preferred method to calculate the cost of equity capital[30]. This is the case in many markets, such as in Europe, Americas and Asia. The formula of CAPM[31] to calculate the cost of equity is the following:

$$Re \text{ or } Ke = Rf + b * (Rm - Rf) + SSRP + SCRP + CR$$

Where:
Ke = Required rate of return on equity
Rf = Risk free rate
B = Beta
Rm = Return on the market
SSRP = Small size risk premium
SCRP = Specific company risk premium
CR = Country risk premium

Risk Free Rate (Rf): It is the yield to maturity of the 10-year government bond. Many analysts and practitioners consider the 10-year US government bond yield as the global market proxy. However depending on the country / countries which the subject company activates in, the estimation of a representative risk free rate may become far more complex as a process[32] [33].

Beta (B) [34]: It denotes the risk embedded in the company's business operations, risk that is also reflected in the variations of the company's stock returns. According to a survey on 670 financial analysts[35], who were asked about the definition they applied to risk, the following concepts were given concerning the concept of risk: (1) size of

[30] Bruner et al (1998), US. Pereiro Luis E., "Valuing Companies in Latin America: What are the Key Issues for Practitioners?", Universidad Torcuato Di Tella, Argentine.

[31] CAPM is considered to be a special case of the Arbitrage Pricing Theory (APT). APT is a sophisticated multifactor risk-return model, which includes macroeconomic and country driven factors, such as inflation, taxation, sovereign, political and exchange risk.

[32] Damadoran (1996) suggested three options for the selection of the risk free rate in a company valuation: (a) the short-term rate of US T-bills, (b) the T-bills rate for the first year of the projections, and the use of forward or projected rates for the following years, (c) the longer-term US bovernment bond yield.

[33] Prat et al. (1996) argued that practitioners in the US market were inclined to utilize long term bond yields in order to match the average risk free rate with the duration of the investment project or the subject company's projection period. Bruner et al. (1998) presented a survey which verified that long-term rates were the most popular options among financial analysts, advisors and corporations.

[34] Financial analysts utilize generic betas, for example the sector average beta of the US financial services industry, in order to apply it in the valuation of a financial services company active in an emerging market. This practice may imply a conceptual error in the assumption of the risk of the subject company.

[35] Ruefli, Collins & Lacugna (1999).

loss; (2) probability of the loss; (3) variance of returns; (4) lack of information. The concept of risk mainly refers to the gap that may arise between the investment goals set by the investor or the valuator and the realized returns of the investment or the subject company. In other words, for investors and practitioners alike, when dealing with risk, the most critical aspect is to limit the downside risk of the investment or the valuation. And the less important is to monitor the variance of returns which implies the probability of upside or downside swings on an equal length. [36]

Technically, the selection of the appropriate beta factor poses several challenges. In emerging markets, for example, it is tough to retrieve reliable sector data. Over the past, analysts and practitioners valuing companies internationally were using beta factors coming for the US market assuming a correlation between the US and the local economy. That assumption most times was not the case.

Levered and Unlevered Beta: According to Aswath Damodaran, Professor of Finance at New York University, Stern Business School, there is the following relationship between the unlevered beta and the levered one:

Levered Beta = Unlevered Beta x (1 + ((1 – Tax Rate) x (Debt/Equity))).

Levered beta is higher than the unlevered beta since it is a "stricter" version of beta for incorporating the risk of the company using bank debt or external financing.

Return on the Market (Rm): It is denoted by the average annual return of the stock market on historical basis.

Market Risk Premium (Rm – Rf) [37]: It is the difference between the return on the market[38] and the risk free rate. It denotes the additional return required by the investor over and above the risk free rate. According to Pablo Fernandez, Professor of Finance at IESE Business School, "…the market risk premium (or MRP) is the answer to the following question: Knowing that your money is invested in long-term Government bonds will provide you a return of RF% (risk free return) almost for sure, which additional return you require to another investment (in a portfolio with shares) for feeling compensated for the extra risk that you assume?".

[36] "…About 80% of the betas used in valuations of recent years were in the interval between 0.7 and 1.5", Pablo Fernandez (30 July 2012), Valuing Companies by Cash Flow Discounting: Fundamental relationships and unnecessary complications.

[37] The market risk premium is also called as equity premium, equity risk premium, market premium and risk premium.

[38] Based on capitalization or volume weighted stock indices.

To calculate the market risk premium, an analyst may estimate the difference between the stock market return and the bond market return each year over a period of 30, 40 or 50 years, and then compute the average or arithmetic mean of those annual estimates[39] [40] [41] [42] [43]. The market risk premium may significantly vary among financial analysts and practitioners even if it is referred to the same country[44] [45].

Small Size Risk Premium: According to empirical studies, small size companies tend to generate higher stock returns in line with the higher risk embedded in their business operations due to their small size and other related factors. Therefore, investors require higher return from a small size company than from a large size and well established company on the premise that when investing in the small size company they undertake a higher risk.

Specific Company Risk Premium: It refers to risk factors specific to each company such as dependency on one or very few customers, low reputation, transparency and management issues.

[39] There had been considerable debate in the US market on whether the risk premium should be calculated as arithmetic or simple mean or median. Ibbotson (1995) suggested the former on the premise that CAPM is an additive framework. Copeland et al. (1994) and Damodaran (1996) suggested the median should be taken into account on the premise that it is better predictor of long-term returns.

[40] "In 2012, about 75% of the market risk premiums used for the USA market were in the range between 4% and 6.5%", Pablo Fernandez (2012), Market Risk Premium used in 82 countries in 2012: a survey with 7,192 answers.

[41] Pablo Fernandez reviewed 150 textbooks on corporate finance and valuation written by authors such as Brealey, Myers, Copeland, Damodaran, Merton, Ross, Bruner, Bodie, Penman, Arzac, etc. and found their recommendations on equity premium ranged from 3% to 10%. Furthermore, 51 books used different equity premiums in various pages. The confusion was also due to not distinguishing among the four concepts of equity premium: historical, expected, implied or required equity premium. Pablo Fernandez (2010), The Equity Premium in 150 Textbooks.

[42] The average market risk premium used in 2011 for the USA by professors, analysts and company managers were 5.7%, 5.0% and 5.6% (standard deviation 1.6%, 1.1% and 2.0%), Pablo Fernandez with Javier Aguirreamalloa and Luis Corres (April 8, 2011) US Market Risk Premium used in 2011 by Professors, Analysts and Companies: a survey with 5,731 answers.

[43] In a casual survey of textbooks and research papers for the size of the market risk premium, Stephen H. Penamn observed a range between 3% and 9.2% for the risk premiums used or noted in those sources.

[44] For example, for the US market the market risk premium has been a controversial aspect among practitioners and academicians. Ibbotson textbook (1995) mentioned a premium between 7% and 8.4% whereas Bruner et al.'s survey (1998) presented a premium between 7% and 7.4%. Siegel (1999) showed that US market premium stood between 3.5% and 5.1%.

[45] The US mortgage crisis and the Eurozone financial crisis of the early 21st century highlight the toughness of estimating risk in the equity market. According to academic researchers despite the many years of efforts contemplating and gauging risk premium, there are market periods when such empirical evidence may be of little use.

Country Risk: It is a type of a premium[46] required by the investor in order to place funds in a company that operates in a specific country. Alternatively, the country risk is a risk factor embedded to the cost of equity in order to adjust for international based parameters located in the cost of equity corresponding to a specific country.

2.2.2.3. CALCULATION OF COST OF DEBT (Rd or Kd)

The cost of debt is the interest rate a company pays against the bank debt funds it is or has been utilizing. For analysts and practitioners, there is a strong dilemma which cost of debt, historical or actual or projected, should be used in order to compute WACC. There is a growing tendency from financial analysts to take into account the cost of debt at which the subject company is expected to be granted debt in the future in order to compute a future oriented and therefore more representative WACC. Alternative options among others include the marginal cost of debt or the average current cost of debt.

2.2.2.4. ESTIMATION OF DEBT TO EQUITY RATIO

The subject company's capital structure, the use of debt versus equity, is an important element in the calculation and / or estimation of the discount rate (WACC) in the DCF methodology. The assumption mainly refers not to the historic debt to equity ratio, but to an effective and prospective debt to equity ratio, under which the subject company can attain its projected financial performance (cash flows)[47]. There may be a few options for analysts and practitioners when selecting the debt to equity ratio:

a) They may choose a target debt to equity ratio that will be achieved by the company in the long run.
b) They may use the average ratio of the sector in which the subject company operates. This option implies the analyst's belief that the subject company's ratio will align with the sector's debt to equity ratio in the long-run.
c) They may utilize an optimal debt to equity ratio which extracts lower WACC and therefore maximizes the company's value.

[46] The country risk premium is usually calculated as the difference between a global bond yield and the specific country's sovereign bond yield.
[47] In the DCF methodology it is common practice to use an estimated debt / equity ratio referring to a projected (future) time period.

2.2.2.5. UNSYSTEMATIC, IDIOSYNCRATIC or PRIVATE RISK

The fact that capital may be allocated / directed towards a single company or a single investment project generates the issue of an additional risk factor which is known as unsystematic, idiosyncratic or private risk. This type of risk is frequently seen in closely held companies. Under this concept, the discount rate (WACC) should be adjusted depending on each case. With regard to the unsystematic risk, the following should be highlighted:

-- There is no technically transparent and unanimously accepted definition of the unsystematic risk among academicians, analysts, and practitioners;

-- No model has been developed to compute this type of risk;

-- Unsystematic risk may be also present in the cases of quoted (publicly traded) companies[48].

2.2.2.6. SENSITIVITY ANALYSIS

Practitioners use sensitivity analysis in the DCF methodology as an effort to make risk adjustments. Sensitivity analysis is very popular among financial analysts[49].

2.2.2.7. THE DCF METHOD AS THE "MOST ACCURATE" ONE

One of the reasons why the DCF methodology is so widely used among valuation practitioners is the accuracy and the safety net it provides due to the incorporation of numerous factors, assumptions and parameters with regard to the viability and sustainability of the subject company. DCF methodology is the only one among valuation methods that requires in depth analysis of the subject company.

The following two tables demonstrate the DCF calculations and the sensitivity analysis of a European technology company[50].

[48] Banz 1981, Chan t al. 1985, Fama & French 1992.

[49] Pereiro Luis E., "Valuing Companies in Latin America: What are the Key Issues for Practitioners?", Universidad Torcuato Di Tella, Argentine.

[50] MLS, Sector : Techonology, European Equities, October 2011, Equity research report prepared by Valuation & Research Specialists (VRS), Analysts: Christophoros J. Makrias, Nicholas Ir. Georgiadis. Permission has been granted by Valuation & Research Specialists (VRS) for using the contents of the report.

Table 4: DCF Methodology Calculations of a European Technology Company

	2011 E	2012 E	2013 E	2014 E	2015 E	L-Term Assumptions
ASSUMPTIONS						
Growth Rate (Sales)	-1.6%	79.1%	33.5%	5.4%	4.8%	**0.5%**
EBIT Margin	22.5%	20.8%	24.3%	24.1%	24.0%	**24.1%**
Tax Rate	20.0%	20.0%	20.0%	20.0%	20.0%	**20.0%**
Working Capital (% of sales)	3.7%	6.9%	5.1%	1.6%	1.4%	**2.7%**
Capex (% of sales)	40.4%	25.4%	13.2%	12.5%	11.9%	**12.0%**
Cost of Capital	11.7%	11.7%	11.7%	11.7%	11.7%	**11.7%**
Depreciation (% of sales)	26.4%	16.7%	13.9%	14.3%	14.7%	**12.0%**
CASH FLOW STATEMENT						
Turnover	**9.9**	**17.6**	**23.6**	**24.8**	**26.0**	**26.2**
EBIT	2.2	3.7	5.7	6.0	6.2	**6.3**
Less: Adjusted Tax	0.4	0.7	1.1	1.2	1.2	**1.2**
Adjusted Operating Profit	**1.8**	**3.0**	**4.6**	**4.8**	**5.0**	**5.1**
Plus: Depreciation	2.6	2.9	3.3	3.6	3.8	**3.1**
Operating Cash Flow	**4.4**	**5.9**	**7.9**	**8.4**	**8.8**	**8.2**
Less: Change in Working Capital	0.4	1.2	1.2	0.4	0.4	**0.7**
Less: Capex	4.0	4.5	3.1	3.1	3.1	**3.1**
Cash Flow to the Firm (FCFF)	**0.1**	**0.2**	**3.6**	**4.9**	**5.4**	**4.4**
Discount Factor	0.90	0.80	0.72	0.64	0.58	0.58
Present Value of Cash Flows	0.05	0.17	2.57	3.14	3.10	
Accumulated Present Value	0.05	0.22	2.79	5.93	**9.03**	
Residual Value						39.1
Present Value of Residual Value						**22.5**

VALUATION	
Enterprice Value	31.55
% Residual Value of Total	71.4%
Less: Net Debt	-3.11
Value of firm (EUR mn)	**34.66**
Outstanding # of shares (000)	**12,417**
Value of share (EUR)	**2.79**

WACC CALCULATION						
Risk Free Rate	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%
Beta Factor	0.63	0.6	0.6	0.6	0.6	0.6
Market risk Premium	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Cost of Equity	**12.3%**	**12.3%**	**12.3%**	**12.3%**	**12.3%**	**12.3%**
Debt / Debt + Equity	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Cost of Debt	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Tax Rate	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
WACC	**11.7%**	**11.7%**	**11.7%**	**11.7%**	**11.7%**	**11.7%**

Sensitivity Analysis of a European Technology Company

		WACC				
		9.7%	**10.7%**	**11.7%**	**12.7%**	**13.7%**
GROWTH	**0.00%**	3.06	2.95	2.71	2.50	2.33
	0.25%	3.33	3.01	2.75	2.53	2.36
	0.50%	3.40	3.06	**2.79**	2.57	2.39
	1.00%	3.55	3.18	2.89	2.65	2.45
	1.50%	3.72	3.31	2.99	2.73	2.52

Note: Value in EUR / share.

2.2.3. HISTORICAL CASH FLOW APPROACH (METHODOLOGY)

2.2.3.1. DEFINITION AND APPLICATION PROCESS

The historical cash flow approach derives a company's valuation based on cash flow generated in the past. [51] This approach can be classified as a combination of a present value approach and a market based (multiple) approach. According to this methodology, the valuator has to calculate the historical cash flow of the subject company and then apply a multiple in order to derive the company's value. The historical cash flow is calculated as follows:

Step 1:

Company's Pre-Tax Profit

PLUS depreciation, management bonuses, interest expenses, and any decrease in working capital needs

and / or MINUS taxes paid, any increase in working capital needs, and capital expenditure

EQUALS the Historical Cash Flow

Step 2: The above step can be repeated for a number of historical years in the subject company in order to DERIVE the average cash flow.

Step 3: Then a multiple is applied in order to derive the company's value.

[51] Psarouthakis John Dr. (2012), "Valuing and Pricing the Company", WTMNews.

For example, if a company's average historical cash flow is EUR 10 million and the multiplier is set at 5 times, then its value equals with EUR 50 million (EUR 10 million x 5).

2.2.3.2. CONSIDERATION ISSUES

The historical cash flow method can be seen as an improved version of the earnings multiple (market based) approach[52] as it utilizes cash flows rather than accounting earnings in computing company value. The method does not however reflect the expectations with regard to the subject company's future performance. It is based on historic performance and therefore any valuation outcome is treated as an approximation and not as an accurate valuation estimate.

2.2.4. 10 DIFFERENT VALUATION METHODS BASED ON CASH FLOW DISCOUNTING

As it was noted previously in the chapter, there are many different versions of the present value approach developed by both academicians and financial analysts over the past decades. The different versions may originate from the determination of the future stream to be discounted (for instance earnings or dividends), the treatment of the company's capital structure (debt versus equity), the perception of the company's risks, and other sets of assumptions and techniques used in the present value approach.

Pablo Fernandez (2003)[53] collected, described and practiced 10 different valuation methods based on cash flow discounting and concluded that all derive the same value. The 10 methods are the following:

1) Equity Cash Flows discounted at the Required Return to Equity
2) Free Cash Flows discounted at WACC
3) Capital Cash Flows discounted at WACC (before tax)
4) Adjusted Present Value (APV)
5) Residual Income discounted at the Required Return to Equity

[52] It will be presented and described in Chapter 4.
[53] Fernandez Pablo (November 2003), "Equivalence of Ten Different Methods for Valuing Companies by Cash Flow Discounting", Working Paper, IESE Business School, University of Navarra

6) EVA discounted at WACC

7) Business Risk-Adjusted Free Cash Flows discounted at the Required Return to Assets

8) Business Risk-Adjusted Equity Cash Flows discounted at the Required Return to Assets

9) Risk-Free-Adjusted Free Cash Flows discounted at the Risk-Free Rate

10) Risk-Free-Adjusted Equity Cash Flows discounted at the Risk-Free Rate

Methods 1, 2, 3, 5, 6, 9 and 10 require an iterative process, whereas the remaining three methods do not.

All the above discounting cash flow methodologies and techniques capture the company's value by evaluating the two types of funds utilized by the company, i.e. equity capital and debt capital.

2.2.4.1. Equity cash flows discounted at the required return to equity

According to this method, the company's value or the equity value is calculated by discounting the company's equity cash flows at the required return to equity. The equity value is denoted by the following formula:

$$E_0 = PV_0 [Ke_t; ECF_t]$$

Where:
E = Value of the equity
PV = Present value
Ke = Required return to equity
ECF = Expected equity cash flows

2.2.4.2. Free Cash Flows discounted at WACC

It is the "classical" cash flow discounting methodology (already presented in Section A of this chapter). The company's enterprise value (equity value plus debt minus cash) is calculated by discounting the company's future free cash flows at the weighted average cost of capital. Free cash flows are the cash flows generated by the company utilizing own funds (equity) as well as third party funds (debt). WACC is an interest rate that reflects the average rate between the required return to equity and the cost of debt. The enterprise value is denoted by the following formula:

$$E_0 + D_0 = PV_0 [WACC_t ; FCF_t]$$

Where:
E = Value of the equity
D = Value of net debt

E + D = Enterprise value
PV = Present value
WACC = Weighted average cost of capital
FCF = Free cash flow to the firm

2.2.4.3. Capital Cash Flows discounted at WACC (before tax)

It is an alternative method to the previous one. Capital cash flows are the cash flows available for the company's equity and debt holders. Therefore, the company's value is calculated by discounting the capital cash flows at pre-tax WACC.[54] In this methodology the tax deductibility of interest is incorporated in the capital cash flows. The enterprise value is denoted by the following formula:

$$E_0 + D_0 = PV\left[WACC_{BTt}\ ;\ CCF_t\right]$$

Where:
E = Value of the equity
D = Value of net debt
E + D = Enterprise value
PV = Present value
$WACC_{BT}$ = Weighted average cost of capital on pretax basis
CCF = Capital cash flow to the firm

2.2.4.4. Adjusted Present Value (APV)

Based on the APV approach, the company's enterprise value is found by estimating the company's unlevered equity value as well as the value of the tax shields owed to the use of debt capital. The APV equation is the following:

$$E_0 + D_0 = V_{U0} + VTS_0$$

Where:
E = Value of the equity
D = Value of net debt
E + D = Enterprise value
V_U = Unlevered equity value
VTS = Value of tax shields

2.2.4.5. Residual Income discounted at the Required Return to Equity

According to this method, the company's equity value is the sum of the equity's book value and the present value of the projected residual income[55] discounted at the

[54] Arditti and Levy (1977) and Ruback (1995 and 2002).
[55] Residual income is also called as expected economic profit.

required return to equity.[56] Alternatively, the company's equity value equals with its book value plus the value generated by the company's income (profit) that is incremental to its book value return. In this case the residual income is the company's profit after tax minus the return on its book value (which is equity book value x required return to equity). The methodology's equation is the following: [57]

$$E_0 = Ebv_0 + PV_0 [Ke_t ; RI_t]$$

Where:
E_0 = Equity value
Ebv = Equity book value
Ke = Required return to equity
RI = Residual Income

2.2.4.6. EVA discounted at WACC

In the same concept with the previous methodologies, the EVA approach estimates the company's value based on the two types of funds utilized by the company i.e. equity capital and debt capital. Enterprise value (value of debt plus value of shareholders' equity) equals with the book values of shareholders' equity and debt plus the present value of the projected EVA discounted at the WACC. EVA is denoted as the Net Operating Profit after Tax minus "company book value times WACC". Alternatively, in order to extract the company's value, the valuator calculates the book values of equity and debt capital and adds to them the present value of the incremental profit (return) generated by the company. This incremental profit represents a return that is additional to the WACC. The methodology's equation is the following:

$$E_0 + D_0 = (Ebv_0 + N_0) + PV_0 [WACC_t ; EVA_t]$$

Where:
E = Value of the equity
D = Value of net debt
E + D = Enterprise value
Ebv = Equity book value
N = Nominal debt value
WACC = Weighted average cost of capital

[56] Fernandez Pablo (November 2003), "Equivalence of Ten Different Methods for Valuing Companies by Cash Flow Discounting", Working Paper, IESE Business School, University of Navarra.
[57] Penamn and Sougiannis (1998), Francis, Olson and Oswald (2000), and Penman (2001) support the view that residual income and equity cash flow derive different valuations. Lundholm and O'Keefe (2001a) argue that if appropriately applied both models provide the same valuation result.

2.2.4.7. Business Risk-Adjusted Free Cash Flows discounted at the Required Return to Assets

According to this methodology, the company's enterprise value (value of debt plus value of shareholders' equity) equals with the present value of the future business risk-adjusted free cash flows generated by the company, discounted at the required return to assets. The concept behind this approach is that the risk-adjusted free cash flows incorporate the company's business risk, which otherwise should be taken into account in the discounting rate. Therefore, instead of using the WACC, under this methodology the required return to assets is used. Required return to assets is considered to be lower than the required return to equity under normal market conditions. The methodology's equation is the following:

$$E_0 + D_0 = PV_0 [Ku_t ; FCF_t \setminus\setminus Ku]$$

Where:
E = Value of the equity
D = Value of net debt
E + D = Enterprise value
Ku = Cost of unlevered equity
FCF \\ Ku = Business risk-adjusted free cash flows

2.2.4.8. Business Risk-Adjusted Equity Cash Flows discounted at the Required Return to Assets

The methodology estimates the company's equity value (enterprise value minus debt plus cash) via the present value of the company's risk-adjusted equity cash flows discounted at the required return to assets. In the same concept with the previous methodology, the risk-adjusted equity cash flows incorporate the company's business risk and therefore should be discounted at the required return to assets, which is normally lower than the required return to equity. The methodology's equation is the following:

$$E_0 = PV_0 [Ku_t ; ECF_t \setminus\setminus Ku]$$

Where:
E = Value of the equity
Ku = Cost of unlevered equity
ECF \\ Ku = Business risk-adjusted equity cash flows

2.2.4.9. Risk-Free-Adjusted Free Cash Flows discounted at the Risk-Free Rate

According to this methodology, the company's enterprise value (value of debt plus value of shareholders' equity) equals with the present value of the future risk-free adjusted free cash flows generated by the company, discounted at the risk free rate. Since these are risk-free cash flows, they should be discounted at the risk free rate. The methodology's equation is the following:

$$E_0 + D_0 = PV_0 [Rf_t ; FCF_t \setminus\setminus R_f]$$

Where:
E = Value of the equity
D = Value of net debt
E + D = Enterprise value
Rf = Risk free rate
FCF \\ Rf = Risk free adjusted free cash flows

2.2.4.10. Risk-Free-Adjusted Equity Cash Flows discounted at the Risk-Free Rate

According to this methodology, the company's equity value equals with the present value of the future risk-free adjusted equity cash flows generated by the company, discounted at the risk free rate. The methodology's equation is the following:

$$E_0 = PV_0 [Rf_t ; ECF_t \setminus\setminus R_f]$$

Where:
E = Value of the equity
Rf = Risk free rate
ECF \\ Rf = Risk free adjusted equity cash flows

2.2.5. CAPITALIZATION OF EBITDA

The capitalization of EBITDA[58] is a valuation technique that takes into account the operating earnings before interest, taxes, depreciation and amortization or EBITDA of a company. These earnings when capitalized at an equity based rate and added to the non-operating assets [59] derive the company's equity value.

The calculations to apply this approach are presented below:

STEP 1: Net Income after Tax + Depreciation and Amortization + Interest Expenses + Tax Expenses = EBITDA

STEP 2: EBITDA x Capitalization Rate + Non-Operating Assets = Equity Value

This methodology is essentially a single-period model that derives corporate value by assuming that 1) the company's business is stable and predictable, 2) EBITDA is growing on a steady rate in future without significant variations, and 3) the risk embedded in the company's operations justifies its earnings and growth prospects. The method extracts a company's value by looking at the current operating profitability rather than in the future. Since, it assumes that the subject company's profitability will not vary over time, this method is not appropriate for high risk and dynamic growth companies with volatile operating earnings.

Example: Let's assume a company that has a business that generates EUR 1 million EBITDA annually and its operating profitability is expected to grow at a 5% rate (plus a 3% inflation rate), and that the annual rate of return needed by an acquirer given the level of risk is set at 20%. The business has also an non-operating asset with a value of EUR 0.5 million. Expected value using the capitalization of EBITDA method is estimated at EUR 8.8 million, calculated as follows: EUR 1,000,000 / (0.20 - (0.05 + 0.03)) + EUR 500,000 = EUR 8,833,000

2.2.6. EVA

Economic Value Added (EVA) methodology demonstrates whether the subject company generates higher economic value over a specific time span. EVA measures the excess income (or earnings or return) generated by an investment, an asset or a company based on the comparison between the earnings income and the cost of capital employed.[60]

[58] EBITDA is a common term for a company's operating earnings.

[59] Non-operating assets are classes of assets that are not essential to the ongoing operations of a business, but may still generate income or provide a return on investment (Source: www.investopedia.com). For example, in a manufacturing company an idle old factory that is currently leased as a warehouse to a third party, may be considered as a non-operating asset.

[60] Stewart III, G.B., 1991. The Quest For Value. Harper Business, New York.

As also noted in section C, for a single period EVA is denoted as the Net Operating Profit after Tax minus "company book value times WACC". Alternatively, according to London's Chartered Institute for Securities and Investment (CISI), "…EVA is calculated by adjusting the operating profit in the company's income statement, mainly by adding back non-cash items, and subtracting from this the company's weighted average cost of capital (WACC) multiplied by an adjusted net assets figure from the company's balance sheet, termed as invested capital…"[61]

2.2.6.1. CONSIDERATION ISSUES OF EVA APPROACH

According to EVA proponents, the methodology can be used as a tool for ex-ante (before the actual event occurs) company valuation. EVA proponents support the view that excess income can be utilized as an alternative to the free cash flow of the DCF methodology. As a technique, EVA is viewed as generally easy to implement. It can be computed from widely available accounting and financial data especially in the case of quoted publicly traded companies. However in practice, EVA is widely used as an ex-post appraisal methodology, which only complements the credibility of values deriving from other valuation approaches such as the DCF[62]. Opponents view the accounting basis of EVA as its main drawback as accounting items can be manipulated and on a stand-alone basis may become only a small part of the greater corporate "picture" of a company.

Conclusively, EVA is a complimentary valuation tool based on accounting / financial data that measures a company's value creation or destruction over one financial period. Practitioners tend to estimate EVA figures over a period of years and by summing up these figures in WACC based present values, they compare the aggregate number to the subject company's market value added (MVA). MVA is the market's assessment of a company's value and it mostly holds for publicly traded companies. In this case, if the MVA is lower than the present value of the company's future annual EVAs discounted at the company's WACC, then the company is undervalued and vice versa.

Pereiro Luis E., "Valuing Companies in Latin America: What are the Key Issues for Practitioners?", Universidad Torcuato Di Tella, Argentine.

[61] CISI (London's Chartered Institute for Securities and Investment) (May 2012), International Investment Management, The Official Learning and Reference Manual.

[62] For example, via DCF a valuator may estimate the value of an investment or an acquisition of a company and decide if it is worth taking the project or purchasing the company. After the event occurs, EVA may be utilized to track the performance of the project or the acquired company and evaluate whether it actually generates the DCF projected cash flows.

2.2.7. DIVIDEND DISCOUNT MODEL - DDM (or DIVIDEND GROWTH MODEL)

The dividend discount model (DDM) extracts a company valuation by discounting its future dividend flows for both an explicit and an implicit period in future. The most simplistic formula[63] to calculate corporate value based on the dividend model is the following:

Company value = Aggregate dividend distributed to shareholders / Required rate of return to equity

This formula assumes that dividend in absolute value terms remains constant over time. For example, if a company is expected to pay an aggregate dividend of EUR 1 million to its shareholders for an annual period, and the required rate of return is estimated at 10%, then company value = EUR 1 mn / 0.10 = EUR 10 million. However, in real business world, dividends change over time based on an estimated growth rate. In this case, the previous formula is adjusted into the following one[64]:

Company value = Aggregate dividend distributed to shareholders / (Required rate of return to equity – Growth rate in perpetuity)

In the previous example, if growth rate is 5%, then company value = EUR 1 mn / (0.10 – 0.05) = EUR 20 mn. As it is evident, the assumption of a growing dividend payout increases corporate value.

A more detailed process applied with regard to the dividend discount model from valuation practitioners is demonstrated in the following table where a hypothetical valuation of a publicly traded "A Bank" is performed:

[63] CISI (London's Chartered Institute for Securities and Investment) (May 2012), International Investment Management, The Official Learning and Reference Manual.
[64] CISI (London's Chartered Institute for Securities and Investment) (May 2012), International Investment Management, The Official Learning and Reference Manual.

Table 5: Dividend Discount Model (DDM) – Example of Application [figures in EUR)

"A BANK", Dividend Discount Model

Year	1	2	3	4	5	Dividend Growth Rate	Terminal Value End of Period
Dividend per Share (in EUR)	0.04	0.07	0.10	0.14	0.18	7.00%	4.70
Required Return / Cost of Capital	11.10%	11.10%	11.10%	11.10%	11.10%		
Present Values (in EUR)	0.03	0.05	0.08	0.09	0.11		2.78
Dividend Growth Rate (2007 - 20011 CAGR)						47.53%	

Implied Value per Share (Target Price)	**3.14**
Current Share Price	3.90
Upside Potential	**-19.53%**

In this process, dividends are estimated and discounted over an explicit period as well as over an implicit period. An assumption is made with regard to the required return and the growth rate of dividends in the infinity. By summing up all present values, the valuation of the company's stock is estimated and is then compared to the company's actual share price in the market.

The dividend discount model extracts value based on a company's generated and distributed dividends and therefore appeals mostly to investors that acquire stocks or companies which have the tradition to distribute dividends. These investors are usually target well established companies / stocks whose ability to distribute dividends has been proven strong in the past and is expected to continue unabated in future. Overall, DDM is not as popular as the DCF model among valuation practitioners since it fails to incorporate the large number of critical assumptions that DCF model does. However, the DDM can be utilized as a continuation of the DCF model if the future dividends are estimated from the detailed income projections of the DCF methodology.

2.2.8. OTHER TECHNIQUES [65] [66]

2.2.8.1. Net Present Value (NPV)

The net present value approach (NPV) determines the group of investments or cash flows that maximize value as compared to the expenses incurred for the implementation of such investments. For example, if group "A" of investments has budget requirement of $250,000 and yields $400,000 in net present value, whereas group "B" f investments has budget of $280,000 and yields $350,000 in net present value, then A is preferable to B. NPV is commonly used in autonomous investment projects, for example a production plant or a new venture, to measure their value.

2.2.8.2. Internal Rate of Return (IRR)

The internal rate of return (IRR) is defined as the discount rate that makes equal the present value of the projected cash flows with the initial investment of a project. When the initial investment and the future cash flows of a project are known, the IRR is calculated for the investor to quantify the return of the investment. If IRR is higher than the cost of capital to undertake the investment, the investor should accept the project. The IRR approach is a metric of an investment project's or a company's value relative to another investment or company and is commonly used by asset managers of hedge funds and private equity funds when selecting the most valuable investment among various options.

2.2.8.3. Payback Period Method

The payback period is considered as a commonly used criterion for ranking and evaluating investment proposals. The payback period is the precise time in years or months needed for an investment to return the initial capital invested. The decision criterion is this case can be the following: If the payback period is less than the maximum acceptable payback period from the investor, the investment should be implemented and vice versa. This technique is common among investors however it is an "unsophisticated" capital budgeting technique.

[65] Techniques such as NPV and IRR are used by practitioners such as corporations, financial analysts and private equity funds. Pereiro Luis E., "Valuing Companies in Latin America: What are the Key Issues for Practitioners?", Universidad Torcuato Di Tella, Argentine.

[66] Gitman Lawrence J. (1994), Principles of Managerial Finance, 7th Edition, Harper Collins Publications.

2.2.8.4. Profitability Index (PI)

The profitability index (PI) is calculated by dividing the present value of the projected cash flows by the initial investment. It is a technique to compare different investment projects but it does not provide sufficient and complete information about the return of investment. It is used as a starting point in the selection of investment or value projects. PI is also called as benefit cost-ratio.

2.2.9. CONSIDERATION ISSUES OF INCOME APPROACH IN GENERAL

The present value (income) approach is appropriate when valuing a company's operations as a going concern. It entails analytical assumptions and parameters with regard to the company's operations and financial performance in future. The projection of a company's future revenue streams and earnings is a task that can become very complex and lead to miscalculations and deviations from the actual financial results that will be realized in future. It also requires the use of an interest rate which will be the basis of discounting the future streams, and such an interest rate cannot be always determined on accurate basis.

On the other hand, compiling analytical forecasts can become a very detailed process due to the use of analytical assumptions that might considerably increase the "safety net" of these forecasts and consequently the credibility of the valuation. During this process, the valuator or the analyst also considers critical issues about the company's future course and inputs his / her own subjective judgment to the determination of the revenue and earnings forecasts. [67]

The numerous assumptions employed to build financial forecasts in terms of revenues and earnings imply a significant leverage between inputs and outcome. Small variations in forecast assumptions may largely affect the future financial streams and therefore the company's value. Consequently, depending on the set or the adopted scenario of assumptions, the present value techniques can lead to quite disparate estimates of corporate value.

In the income based approach, the interest rate or cost of capital utilized to discount the future streams into present values is essential to encompass an accurate estimation of the company's risk profile. The utilization of the interest rate to discount future values into present values essentially "aligns" the company's valuation with other available investment opportunities which also entail a notion of risk and expected return. By balancing risk and return, the present value approach extracts the corporate

[67] In that sense, the high free float in a listed company may imply and/or satisfy the market need for higher transparency and dissemination of information. Therefore, present value becomes the valuation approach most suitable to value the subject company due to the implied greater transparency and financial reporting that the company provides to investors.

value as a benchmark value which is comparable against other current financial market opportunities.

As already noted there are different versions of the present value approaches developed by both academicians and financial analysts over the past decades. The different versions may be classified according to the precise calculation of the future stream that is discounted (e.g. earnings or dividends), the treatment of the company's capital structure (debt versus equity), the perception of the company's risks, and other areas of assumptions and techniques used in the present value approach.

In general, present value approaches are appropriate for valuing companies with less predictable earnings however may not be so ideal for valuing startups where the generation of the cash flows is highly volatile. The income approach is also used in the valuation of business interests.

The present value approach can fill the gap of other valuation approaches being too simplistic in deriving a fair value. From time to time, valuation practitioners have to value identical companies in terms of absolute revenues and earnings, companies however with very different needs of working capital and capital expenditures. In one case, a company may generate the same earnings compared to another one, but it may be a much more efficient cash generator. Therefore the former should challenge a higher valuation as compared to the latter. This is an option that can be incorporated in a detailed valuation process such as the DCF methodology and not so, for example, in the multiples approach which is more simplistic[68].

NOTE: The Appendix 1 presents a table with the characteristics of the most recognized income valuation approaches that have been discussed by academicians and are applied by valuation practitioners.

2.2.10. CONCLUSION

Present values (also known as income approach) constitute an analytical valuation approach applied by the great majority of valuation practitioners and financial analysts. The most popular version of present values approach is the discounted cash flow (DCF) methodology which requires in depth analysis of the subject company. This chapter also presented additional versions of valuation practices based on cash flow discounting as well as other income based valuation techniques. As it will be demonstrated in following chapters, the income based valuation approach mainly fills the gap of other valuation approaches being too "simple" in extracting corporate value.

[68] As it will shown in following chapter, multiples valuation is usually applied via a process that does not entail as many assumptions as the DCF methodology.

2.3. ASSET VALUES (also known as ASSET BASED APPROACH)

2.3.1. INTRODUCTION

The concept behind the asset value approach is explained by the view that a company's value is the sum of its assets. The company's assets may include tangible assets such as buildings, machinery, etc, as well as intangible assets such as brand names, goodwill, customer relationships, etc. Under normal conditions in the economy and the equity market, a company's value is the sum of its assets plus a premium that represents the potential of the assets to generate higher revenues and earnings if used more efficiently and under a more effective management. The application of the asset value approach requires deep understanding of the company's assets. Furthermore that understanding may go beyond the economic or accounting knowledge and may extend to specific scientific or technical knowledge.

2.3.2. MOST APPROPRIATE CASES FOR USING ASSET BASED APPROACH

Asset value approaches are mainly utilized in the valuation of companies that generate their revenues and income to a large extent from the assets they employ and not so from their shareholders' or management's abilities and efforts. The asset value approach is not the most appropriate valuation approach for business entities that operate more as a going concern entity [69].

In addition, the asset value methodology is employed in cases of liquidation of obsolete assets. Practitioners also apply asset value approaches when valuing startups with significant intellectual property (IP) items on the balance sheet.

Conceptually, the asset based approach can be used in the valuation of holding companies or group of companies. In both cases, revenues and income are generated from different assets / business entities and therefore these assets are more suitable to be valued on an individual basis and then to be summed up to a final aggregate value.[70]

[69] Going Concern is the idea that a company will continue to operate indefinitely, and will not go out of business and liquidate its assets. For this to happen, the company must be able to generate and/or raise enough resources to stay operational. Source: www.investorwords.com

[70] Footnote: The summing up of different business entities / units within a group may also require the application of the DCF methodology.

2.3.3. THE SIMPLE ASSET VALUATION METHOD - NAV

The asset approach in valuation is expressed in several versions depending on the methodological steps followed in order to extract the corporate value. The most simplistic version is the one where the asset value represents the net asset value (NAV) per share attributable to ordinary shareholders. It is estimated as follows: [71]

NAV = (Total assets – Liabilities – Preference shares) / Number of Shares in Issue

where

Asset Value = Company Assets – Company Liabilities

This formula is quite simple however it implies a fundamental principle in finance. The value of the company is what remains for the shareholders / investors after all liabilities to third parties have been satisfied. As noted, this approach is ideally used in valuing idle businesses with significant assets. There may be the case where the sum of all assets exceeds the burden of all liabilities and therefore the balance or the value of the company is positive. This occurs not very frequently in corporate reality and refers to cases where the assets if sold separately will generate higher value than if sold as a whole. [72]

2.3.4. ASSET ACCUMULATION METHOD

Another similar version of the simple net asset value (NAV) approach is known as Asset Accumulation Method which is used for valuation cases on going concern basis. According to this method, the company's value is the sum of its assets that can be hypothetically sold as a part of a going concern.

The methodology is performed via the following steps:

- Step 1: The company's tangible and intangible assets are separately estimated in value and then aggregated. The value of the following assets is determined:

[71] CISI (London's Chartered Institute for Securities and Investment) (May 2012), International Investment Management, The Official Learning and Reference Manual.

[72] Such examples are capital intensive factories or industrial plants. In the late 1980's the NAV approach was the concept behind the flourishing of the so-called "asset strippers" in the US mergers and acquisition market.

-- Current assets such as cash and cash equivalents, customer receivables, prepaid expenses and stock inventory.

-- Non-current assets such as tangible assets (land, buildings, furniture and machinery equipment) and intangible assets (brand names, patents, research and development of products or technology)

- Step 2: After estimating the separate values of all assets and accumulating these values into a separate one, the fair market value of all liabilities is subtracted to derive the value of the company on a going concern basis.

The asset accumulation method is mostly appropriate in valuation cases of companies which hold significant tangible and intangible assets that are considered highly marketable. The method does not derive the company's liquidation value as it estimates the sales value (or saleable price) of all its assets as a going concern. Therefore, the asset accumulation method does not assume any liquidation process and any respective liquidation costs.

2.3.5. COST APPROACH

The cost approach is a common practice for international appraisers in estimating the value of assets or companies in industries which require high capital expenditures and are technology driven. Based on this approach, the appraiser calculates the current cost or value of an asset[73], the reproduction cost of a new asset as an exact replica (called by practitioners as RCN – reproduction cost new[74]) and/or of a new modern replacement (called by practitioners as COR – cost of replacement[75]). The differences among these three costs represent a form of obsolescence either functional or technological[76]. Either cost may be used as approximation to the value of the subject asset or company (or group of assets).

[73] For example a production plant, an energy generator installation, etc.
[74] The reproduction cost new (RCN) is estimated by trending the original cost to a current cost based on published construction cost data or by unit costing the entire plant.
[75] The cost of replacement (COR) stands for the cost of a new modern asset (for example plant) with the same capacity and utility of the subject asset (plant).
[76] Differences may account for physical deterioration, operating obsolescence, environmental costs, etc.

2.3.6. LIQUIDATION METHOD

The liquidation method is an approach of "last resort" and commonly utilized for estimating the value of a company that has to be liquidated. This method estimates the value of the company's net assets based on liquidation prices and not on saleable prices. In real world, investment and commercial banks tend to look at valuations based on the liquidation method when the subject company has been granted or is to be granted a loan which might be considered of a high risk value [77].

2.3.7. VALUATION OF INTANGIBLE ASSETS [78]

Intangible assets such as brand names, R&D (research and development) expenses, and patents are unique assets to a company since they generate income over a long period of time. Companies tend to value such assets and update their valuation frequently over time to adjust their value to contemporary market conditions and standards. Some of the methodologies utilized in valuing intangible assets are the following:

-- Valuation based either on historic costs or on implied costs;

-- Market value approach;

-- Price premium or gross margin approach;

-- Economic substitution analysis;

-- Earnings split and "relief-from-royalty" methods.

An extended note regarding brand name valuation and sports brand strategies is presented in Appendix 2.

2.3.8. PROS AND CONS OF ASSET APPROACH - NAV

Due to its relatively simple concept and the use of actual transaction based asset prices, the asset approach is well documented and therefore objective. However it also lacks significant information with regard to the subject company's potential dynamics.

[77] Psarouthakis John Dr. (2012), "Valuing and Pricing the Company", WTMNews.
[78] Intangible assets may refer to items such as brand names, patents, expenses for research and development of products or technology, etc.

In this context, the asset approach provides a strong and objective basis in valuing a company whenever there are active secondary trading markets for its assets (e.g. cars, other vehicles, machinery, etc.). The existence of secondary markets therefore facilitates the estimate process of the assets' sale price.

In addition, the NAV per share is useful for assessing some of the following cases:

-- The minimum price at which a company's shares should theoretically trade;

-- The underlying value of a property company;

-- The underlying value of an investment trust.

On the other hand, especially in the cases of listed (publicly traded) companies, the method does not take into account the fact that most listed companies trade on a premium to their asset or net asset value. This premium represents the internally generated goodwill attributable to the company's management, market positioning and reputation and is usually not fully recorded in the company's financial statements. Due to similar reasoning, and given that accounting statements do not depict other than physical assets the asset value method is not considered appropriate by practitioners for valuing service or people orientated businesses that are driven by intellectual rather than physical capital.

Furthermore, the asset approach is largely based on accounting data that can be misleading or miscalculated. The balance sheet of a company depicts accounting data that represent values of the company's assets and derive from certain calculations involving depreciation rules, historical cost issues, etc. Accounting values may not necessarily be meaningful as far as the current and real value (or sale price) of an asset is concerned at a certain point in time.

Even if there is an accounting estimate of intangible assets, the estimation of the value of a company's intangible assets is largely a subjective process. Consequently, there can be significant deviations between the values attributed by the seller and by the candidate buyer of the corresponding assets in a potential transaction.

Finally, another weak aspect of the asset value approach has to do with the replacement cost of tangible assets. For example the dilemma between purchasing a factory or constructing a new one, may assist in the valuation of those assets, in practice though, due to technological advancements and innovations, it is quite complex to safely approach the value of an asset by utilizing the replacement cost concept. Furthermore, a new factory serving the same production purpose may be totally different to an old one in terms of capacity utilization, productivity, production

cost, etc. and therefore cannot become comparable in value with the old one. Therefore to claim that the value of the old factory is equal with the value (the replacement cost) of the new one which is more upgraded and innovated may turn out as a theoretically and practically invalid statement.

2.3.9. CONCLUSION

This chapter dealt with the major versions of the asset based approach (or asset values), the pros and cons of this approach and the valuation cases which the approach is most applicable for. In general, the asset based approach is applied by analyzing and valuing the subject company's assets and thus requires an in depth knowledge of the assets examined as well as of their contribution to the subject company's income generation.

2.4. MULTIPLES (also known as MARKET BASED APPROACH)

2.4.1. INTRODUCTION

Multiples constitute an approach to value companies via their marketability based on existing market information. Such information may have been revealed in the stock market in the case of listed companies or detected in the free economy through various company transactions, i.e. mergers, acquisitions, divestitures, etc. Whenever and wherever there are comparable assets and companies traded in the market, the multiple-based approach should be adopted or included in the valuation of a business[79].

In general, the application of this approach requires the availability of a reliably comparable group of companies that captures the identical growth and value drivers of the subject company. The multiples based approach presumes that a company's operations are valued as a going concern.

Multiples based valuation is also known as market based approach. In addition, many valuation practitioners use the term guideline company (GLC)

[79] Despite their several drawbacks, multiples are very popular among valuation practitioners and financial analysts since they are quite simple in use. However this may not be the case among different corporations in different geographic markets. Pereiro Luis E., "Valuing Companies in Latin America: What are the Key Issues for Practitioners?", Universidad Torcuato Di Tella, Argentine. "…In several domestic economies, references from domestic companies and transactions are limited and deemed as unreliable."

approach[80] as an identical term to multiples. Publicly traded companies are the ones most often treated as guideline companies in valuation studies and / or exercises.

2.4.2. CLASSIFICATION OF MULTIPLES APPROACH

In line with the above, valuation practitioners often classify the multiples based valuation in two separate approaches or methodologies:

-- Capital Market Approach: Based on this approach, the value of the subject company is determined via its comparison with other comparable publicly traded companies (also called "guideline companies").

-- Transaction Approach: Based on this approach, the value of the subject company is determined via its comparison with other comparable non-publicly listed companies, which have been recently acquired or sold (also called "guideline companies"). In this case it is important to take into consideration transactions concluded during a reasonably recent period of time in order to incorporate the most current market conditions under which the transaction's value was determined.

2.4.2.1. INDICATIVE MULTIPLES USED IN MARKET BASED APPROACH

Multiples utilized in a company's valuation comprise a wide range of ratios such as the following:

-- Price earnings or P/E ratio;

-- Enterprise value to ebitda (earnings before interest, taxes, depreciation and amortization) or EV/EBITDA ratio;

-- Price to book value or P/BV ratio;

-- Price to net asset value or P/NAV ratio;

-- Price to sales or P/S ratio;

-- Price to cash flow or P/CF ratio;

-- Price to free cash flow[81] or P/FCF ratio.

[80] It is a well known term among valuation practitioners in the US market.
[81] Free Cash Flow = Cash Flows from Operations + [Net Interest Income x (1-tax rate)] – Capex.

The application of the multiples approach is practical and simple. For example, in the valuation of a privately held business via the P/E ratio which the most widely used multiple internationally, multiplying this company's net profit with its sector's or industry's average P/E, the company's value can be easily estimated. The average P/E is based on this company's peer group or group of guideline companies which are representative of the sector or the industry.

2.4.2.2. SELECTION OF GUIDELINE COMPANIES

As implied previously, guideline companies are the "benchmarks" of value to which the subject company is compared in order to be valued taking into account to the most recent possibly market value standards. Ideally, the guideline companies are appropriate if they demonstrate the following characteristics compared to the subject company:

-- They are in the same industry, sector, sub-sector, specialized business segment;

-- They have similar size in terms of revenues and assets;

-- They have similar financial characteristics such as capital structure;

-- They have comparable operations in terms of products and services, diversification and macro-economy influence factors among others;

-- They have similar risk characteristics.

Sources that can be employed in searching for multiples are the following:

1) Listed, publicly traded, companies;
2) Initial public offerings;
3) Acquisition transactions in the free market;
4) Past experience.

In reality, it is very difficult for a valuator to detect precisely comparable companies against the subject company, as there are differences in business operations, business model, risk and other factors. Therefore, given these difficulties, the guideline companies that are selected should present at least a few fundamental characteristics in common with the subject company.

2.4.2.3. ADJUSTMENT OF MULTIPLES BASED VALUES

The multiples based approach results into a company value which is frequently called by practitioners as Preliminary Estimate of Fair Value. In many appraisals, the preliminary estimate has to be adjusted in for a number of reasons such as:

-- Control or minority stakes;

-- Company specific or risk factors;

-- Lack of marketability if the subject company is non-listed or if it is listed but its trading market is narrow.

Some of the above adjustments may depend on subjective decisions taken by the valuator or financial analyst.

2.4.2.4. TRANSACTIONS BASED APPROACH

Transactions based approach is one of the most reliable market based approaches to derive the company's potential market value and close the gap between valuation and pricing. It estimates the pricing of a company and is based on actual and realized transaction values from mergers, acquisitions and business deals in the real economy, although it is not always feasible to collect reliable and actual transaction data. This is because many sectors and geographic markets are not especially active in business deals and acquisitions and thus there are difficulties in raising reliable information regarding corporate transactions. A special application of past business deals and transactions approach in valuing a company is demonstrated in Appendix 3.

2.4.3. FAVORABLE CONSIDERATIONS FOR THE MULTIPLES APPROACH

Multiples can be readily and easily applied to derive a corporate value since there are numerous stock market-based multiples with many of them considered benchmarks for determining value from analysts, practitioners and academicians. Multiples such as the P/E and the P/FCF may be ideal as a valuation approach in companies with high earnings stability. These are well established companies in the market place,

operating in relatively stable business sectors and generating steady cash flows and earnings.[82]

The market approach is finally used in valuing under establishment companies which are to be funded with seed capital even though in this case there are significant drawbacks to collect reliable transaction data of previous startup valuation deals. [83]

2.4.4. UNFAVORABLE CONSIDERATIONS FOR THE MULTIPLES APPROACH

At first glance, multiples may appear easy in use and in interpretation but in practice are multifaceted from several aspects. Valuation practitioners argue that "choosing and interpreting multiples entails judgment and perception over growth and risk". For example, in a simplistic world of investment and value, one should expect that a low price earnings ratio may be equal to a "cheap" and attractive company value and that a high price earnings ratio may be equal to an "expensive" and unattractive company value. However in practice, the reverse almost always occurs. For example in the stock market, companies with strong earnings and growth prospects tend to trade with high price earnings ratios that may be close or even higher than 20 times. On the contrary, companies perceived to encompass high risk in their businesses in order to generate their expected earnings, tend to trade with low price earnings ratios, below 10 times or even lower.

Multiples are viewed as a "generic" approach in valuing a company. For example, according to criticism on the price earnings ratio, the particular ratio fails to capture differences in value that may arise from each company's ability to generate cash flows and efficiently use working capital and capital expenditures in order to maximize its earnings potential. It can be held that differences in cash flows and differences in capital expenditures are determinant factors of each company's fair value in contrast to a generic multiple that is derived from the sector based on comparable companies[84]. From time to time, valuation practitioners have to value identical companies in terms of absolute revenues and earnings, companies however with very different needs of working capital and capital expenditures[85]. In one case, a company may generate the same earnings compared to another one, but it may be a much more efficient cash generator. Therefore the cash generator company should

[82] Discussions in "Business Valuation Professionals" and "Business Valuation & Advisory Network": Groups of professionals and practitioners in www.linkedin.com.

[83] Market approach is preferred to present value approach when valuing startups. Startups produce uncertain and volatile cash flows that are not so appropriate to be valued via the DCF method.

[84] Psarouthakis John Dr. (2012), "Valuing and Pricing the Company", WTMNews.

[85] These are factors of influence that can be captured via present value approach (such as DCF methodology).

deserve a higher valuation as compared to the other company, an option that it is not provided if a simplistic multiple approach is utilized to derive value.

Furthermore in the case of the market based approach, the valuator's critical judgment is hard to be applied and justified. This creates a weakness in the validity of multiples as valuation approach over the long run. For example, for the same listed company, one analyst may perceive a price earnings ratio of 20x as the cap level of the company's valuation, whereas another analyst may believe that such a ratio level is relatively low, due to the analysts' different views and beliefs about the real prospects of the company.

Another consideration is that multiples are based on accounting data such as earnings, book value, etc. that may be recorded in the accounting books with fairness but also may be subject to vagaries (historical versus market cost of accounting, etc.). Unless the valuator is certain or has audited the financial accounts which constitute the basis of the valuation, it is probable that multiples are based on differently calculated or recorded financial accounts. For example, in the case of the ratio price to book value, the equity (which is the denominator of the ratio) may not be recorded on a market-to-market basis. Or in the case of the ratio enterprise value to EBITDA, there is a high likelihood that the calculation technique of EBITDA significantly vary across companies even within the same sector or industry.

In addition, comparison between a listed company and other listed firms in order to extract a value for the former may not be ideal as an approach, since even for companies that are classified in the same sector, there may be significant differences among their business activities, thus making them not truly comparable.

Since not every company may be listed and not every sector may be fully represented in an organized stock market, it is not feasible to value a non listed company that does not have any "truly" comparable companies publicly traded.

An additional consideration is the extended range of multiples that grows even larger when analyzing and valuing companies in special business sectors. For example in the Internet business, ratios may also include multiples of internet visits, subscribers, advertising income, or in the health care business ratios may include multiples of hospital beds, etc. Therefore it can become complex which multiple to weigh more in a valuation approach or how differently should the conventional multiple metrics, i.e. price earnings, should be treated over the specific sector multiple metrics, i.e. price to advertising revenues in the case of the media / advertising sector.

In cases of geographic markets where listing of companies is limited and / or not representative, the multiple approach is become less effective in finding a company's fair value [86]. The same holds if these markets post little activity in terms of

[86] It refers to markets where the most comparable companies are private companies and thus the availability of data becomes very limited. In this case any attempt to find multiples of such companies

comparable merger and acquisition transactions. In such cases, the valuator or analyst may or can use comparable companies / transactions from the international markets, even though the comparison will not be the most appropriate to extract fair value. Most analysts when using internationally based companies as the comparables for the subject company, they mostly do so as a sanity test against an income based approach. [87] [88]

The difficult path followed by valuation practitioners in collecting and selecting data in order to correctly apply the market approach is metaphorically titled as searching for "ways to tame the beast". In practice, it is very tough task for a valuation practitioner to find the appropriate comparison among thousands of candidate comparable companies against the subject company. In the majority of valuation exercises in which a peer group of guideline companies is used to derive the value of the subject company, there may be significant differences in the business mix, the capital structure and the risk considerations among the peer group companies.

When applying the market based approach it is important for the valuator or analyst to be in a position:

1) To reconcile the market approach with the income approach;

2) To defend the sources and the selection of comparable company multiples (group of guideline companies – GLC);

3) To be aware of alternative scenarios and cases that can be applied in the particular methodology.

2.4.5. CONCLUSION

This chapter presented the multiples approach which is one of the most popular and applied valuation methodologies. The approach can be applied in valuing listed companies via market multiples or in valuing non listed companies via market and / or transaction multiples. The critical phase in this approach is to select the appropriate group of comparable companies the so called guideline companies. Despite their

and derive a preliminary estimate of value is used only as a test of reasonableness during a wider valuation / appraisal process (with more than one approaches used).

[87] Deloitte (August 2006), Valuation Advisory Report for Dewan Architects & Engineers (Abu Dhabi & Dubai), Draft for Discussion Purposes Only.

[88] For example, emerging markets usually provide limited and not very reliable comparable transaction data.

several drawbacks, multiples are considered as a reliable in use valuation approach by the majority of valuators, financial analysts and investment professionals.

2.5. OPTIONS BASED VALUATION (or OPTIONS PRICING)[89, 90]

2.5.1. INTRODUCTION

The options based valuation or options pricing approach is commonly used in cases of companies that are in need to value assets they own and do not currently utilize or operate. In such cases, companies are not aware of their assets' real potential in terms of revenue generation in future. Such assets may be, for instance, an oil-drilling well in the energy sector or an operating license in the mobile telecom market.

The concept behind the use of options in pricing a company or a corporate asset is identical to the use of the conventional options traded in the securities markets: an option provides its holder with the right to buy (call option) or sell (put option) the underlying asset at a specified price in future, at or before its expiration date. In this sense, the option is also called as a right to act towards a certain business decision.

The application of this approach involves the consideration of a number of critical factors. On the level of the underlying business / asset, the critical factors to be considered are the value of the underlying business, the volatility in that business' value or price and the expected dividends from the business that is valued. On the level of the option embedded, the critical factors relate to the strike price[91] and the life of the option.

The Black-Scholes Model and the Binomial Option Pricing Model are considered among the most known methodologies in valuing businesses based on options. However both methodologies are not simplistic enough to become very popular in the community of valuation practitioners and analysts. The two methodologies consist of mathematical, statistical and econometric models which are not thoroughly comprehended by professionals and therefore are rarely used in day-to-day valuation practice. On the contrary, there are numerous research papers and notes by the academic community on the theoretical explanation and application of the options pricing approach.

[89] Also called as Real Option Pricing.

[90] Damodaran Aswath, Professor of Finance, Stern School of Business, New York University, USA, (May 2001), Seminar on Corporate Valuation, Sponsored by ALBA Executive Development Products, Athens, Greece.

[91] It is the price paid for having the right to act towards a certain business decision.

2.5.2. EXAMPLES OF BUSINESS CASES WHERE OPTIONS PRICING IS USED

There are various business cases which an option / right may be referring to. One case may be a product patent, which provides a company with the right to develop the product, sell it and generate income from it. The company proceeds with the above actions only if the expected economic benefit from launching the product exceeds the cost the company must incur in order to produce it and market it.

Another similar case may refer to research and development (R&D). By incurring R&D expenses a company is like buying options to launch a new product or service, which may not be protected as a patent, and generate income from it. This is common in biotechnology and software companies.

A third case may refer to valuing a natural resource such as an oil reserve. A natural resource option gives the right to exploit this resource at a specified period of time. If the cost of such venture [92] is lower than the expected benefit[93], then the natural resource option should be exercised.

Biotechnology, natural resources, oil drilling, software and internet companies, as well as airlines are all indicative businesses which at a point in time may be valued via the options pricing approach.

2.5.3. TYPES OF OPTIONS

Options in business projects, investments and acquisitions among other cases may be classified as follows:

- Option to delay implementing an investment project until a later date or year, with the objective to achieve a more favorable benefit / cost target;
- Option to implement an investment project, which may allow taking advantage of other investment opportunities in future;
- Option to abandon an investment project in case the projected cash flows do not materialize.

In practice, an option embedded in an investment project adds value to it since it offers flexibility that may turn a non-attractive investment to a good one or limit losses of a good investment that turns to a non-attractive one.

[92] It consists of the cost of extracting the resource and making it saleable.
[93] The benefit is normally depends on the quantity of the resource and its pricing in the marketplace.

2.5.4. OPTION TO DELAY

The right a company may have to implement an investment project at a later time period is valuable since implementing the project at a later date may set the project profitable. For example, if today the project's net present value (NPV) is negative or the internal rate of return (IRR) is below the company's required rate of return[94], it does not mean that the implementation of the project will always be unprofitable. It may be the case that after a period of time a number of determinant factors (such as cost of capital, pricing of revenues, etc.) will alter to an extent that they will set the investment project profitable. Therefore in such a case, the option that gives the right to delay the project becomes valuable. In other words, even if the investment project is not valuable today, but it may be in future, the right to exercise / implement this project is very likely to have significant value. As it applies in the case of the conventional and standardized options, the value of this right may be changing marginally or more widely depending on the market conditions of the project's underlying business.

2.5.5. OPTION TO EXPAND OR TO TAKE OTHER INVESTMENT PROJECTS [95]

A company may contemplate possessing an option[96] that gives the right to undertake a project today with negative NPV or lower than its standard IRR in order to gain valuable knowhow and experience to undertake future projects with more favorable cost / income characteristics.

For example, this option may be used in one of the following cases:

- A food & beverage company proceeding with a limited introduction of a product in a specified geographic market[97];
- Acquisition of an internet company which may give the option to its buyer to expand into a much larger market[98].

[94] The required rate of return is also known as hurdle rate.

[95] Damodaran Aswath, Professor of Finance, Stern School of Business, New York University, USA, (May 2001), Seminar on Corporate Valuation, Sponsored by ALBA Executive Development Products, Athens, Greece.

[96] It is also known as "strategic" option under the rationale that it initially implies a negative return on investment for the subject company.

[97] It has been the case in the US, where soft-drink producers launch new products in several metropolitan cities before deciding on a full scale introduction of these products.

[98] In the late 1990's, many equity analysts were valuing Internet companies on the basis that the acquirer was buying an option to expand into a very large market.

2.5.6. OPTION TO ABANDON

The option for a company to abandon the implementation of an investment project is equally important and valuable with the previous two types of options. A company may abandon a project if along its implementation process it is proved that the project does not deliver the expected cash flows which would justify the cost incurred by the company. In general, the abandon option is a put option that is valuable in investment projects with variable cost much larger than the fixed cost. In addition, an option to abandon is valuable in projects with fewer long-term obligations and in projects which despite their difficulty may appeal to future candidate partners or buyers.

2.5.7. CONSIDERATIONS OF OPTIONS PRICING APPROACH

Options based approach is considered as an effective tool for valuing a potential investment project as it provides deeper information to the investor about the project's financial benefits during a specific time period until the expiration date.[99] However, the option pricing or real option approach focuses exclusively on future trends of the business to be valued. Therefore it cannot utilize historic trends as background basis in order to improve the credibility of future assumptions.

On practical basis, financial analysts appear to have detected several limitations in the use of real options in valuation such as the estimate of volatility factor[100], the difficulties met in modeling a precise case, and the approach's general technical complexity, which restrains its use among managers and entrepreneurs, and even among financial analysts. In this context, popularity of option pricing techniques is relatively low among valuation practitioners, equity analysts and corporate consultants worldwide. Popularity would increase in case a simpler and practical technique could be developed in future[101].

2.5.8. VALUING A COMPANY VIA OPTIONS AND INCOME APPROACHES

Practitioners use both options and income approaches in valuing a company which has an existing business generating cash flows but also a number of rights to enrich or expand the existing operations. For example, a pharmaceutical company which

[99] Pereiro Luis E., "Valuing Companies in Latin America: What are the Key Issues for Practitioners?", Universidad Torcuato Di Tella, Argentine.
[100] It is practically arbitrary as in most investment projects there are no historic data to derive or imply an estimate of the risk assumption.
[101] Pereiro Luis E., "Valuing Companies in Latin America: What are the Key Issues for Practitioners?", Universidad Torcuato Di Tella, Argentine.

distributes an existing portfolio of products but it also owns a portfolio of drug patents would be valued as follows:

Value of Firm = Value of commercial products based on discounted cash flow (DCF) methodology + Value of existing patents based on options

When using both options and income approaches, it is important not to assume high growth rates in the DCF methodology since given the application of options pricing as well, it would be like double counting the growth prospects of the subject company.

2.5.9. CONCLUSION

Although not especially popular, the options based valuation is an alternative approach that assists practitioners to recognize potential value in a cases of businesses with "flexible" growth scenarios which other conventional approaches such as present values are not in a position to fully comprehend. This chapter presented the main types of options pricing, illustrated examples of business cases where options pricing is used and highlighted in synopsis the pros and cons of options pricing approach in the real valuation world.

The following chapter sheds light on a series of critical issues that arise whenever selecting a valuation approach. They are in essence influential factors of corporate value and at the same time issues of consideration during the selection and weighting process of corporate valuation approaches.

3. CHAPTER 3: METHODOLOGY

3.1. INTRODUCTION

Based on Damodaran (2012) a thorough business valuation will consider four approaches to value:

- the income approach,
- the asset based approach,
- the market based approach,
- the options pricing approach

Each may have one or more methodologies that are utilized in estimating the value of a business; thus, an appraiser may end up using multiple methodologies in the process of arriving at a value (Penman, 2010).

In a perfect world, all of the methods used would result in the same value. Unfortunately, given the nature of business valuation, it is inevitable that each methodology will generate a unique value estimate that differs from each of the other methodologies. Sometimes the differences are minor, but in many cases the contrast in value estimates can be quite significant.

3.1.1. WEIGHTING OF VALUATION OUTCOMES

A number of professionals argue that weighting the various value conclusions in determining the final estimated value of the business is not appropriate, as they believe that for each valuation there is one methodology that provides the best measure of the subject company's value. However, a weighting that takes into account the specific facts and circumstances of the particular company can and should be used (Kotzin Valuation Partners report, 2008). This is supported by the American Society of Appraisers' Business Valuation Standards, which state that "The appraiser must use informed judgment when determining the relative weight to be accorded to indications of value reached on the basis of various methods, or whether an indication of value from a single method should dominate. The appraisers judgment may be presented either in general terms or in terms of mathematical weighting of the indicated values reflected in the conclusion. In any case, the appraiser should provide the rationale for the selection or weighting of the method or methods relied on in reaching the conclusion." In addition, the American Society of Certified Public Accountants (AICPA) has released draft business valuation standards that also stipulate the appropriateness of using weighting in determining a value conclusion.

A major advantage of weighting the various value conclusions is that it forces the business appraiser to reconsider the methods used and to develop supportable justifications for including or excluding certain methods, as well as determining

reasons why certain methods may be more relevant than others. The valuation of a business is mainly based on theory and valuation experience, and the reconciliation of value conclusions is an invaluable step in the valuation process.

The valuation conclusions that are initially determined using the various methodologies provide feedback to the appraiser, and the value conclusions first determined are almost never the final conclusions presented to the client (Kotzin Valuation Partners report, 2008). The reconciliation process forces the appraiser to revisit the assumptions and judgment calls made during the initial process, and the initial value conclusions can provide a roadmap to refining certain assumptions. It is through this reconciliation process that the appraiser develops a comfort level with the relevance and applicability of the various methodologies and this is eventually reflected in the weightings applied.

Thus, the weighting of valuation outcomes is considered an important step in order to reach a valuation outcome that would ideally represent the "real" and "fair" value of a firm. However, based on the research conducted there has not been proposed a certain methodology or technique in order to weight the valuation outcomes stemming from each of the valuation methodologies.

The aim of the current research is to present a techique based on which an appraiser would be able to weight the outcomes of each of the four basic methodologies and be led to a single value that would best represent the "fair value" of a company. In order to determine the respective weight that is given to each outcome certain factors are taken into account. The respective factors play a key role in defining the weight placed in each method as are linked to the nature of the respective firm's operations, its level of operational and market exposure and in general form a picture of all the parameters that an appraiser should take into account in order to evaluate a company's fair value.

Based on the views and on the expertise of practitioners which conduct valuations worldwide, there are or may exist additional[102] critical factors that determine the selection of valuation methodologies. Some of these may refer to influential factors of value that assist in better understanding the capacities as well as the limitations of the available valuation approaches, methodologies or techniques. This chapter presents some of the most important influential factors of value and discusses their implications in selecting valuation approaches. In essence, these factors influence the valuator's judgment with regard to which valuation approach is the most appropriate one in valuing any subject company or with regard to the most suitable weighting of the valuation approaches selected. It is noted that some of the factors presented are only affecting the valuation outcome and not the selection or weighting process of valuation approaches. However all factors relate to internal or

[102] Apart from those implicitly or explicitly noted in the previous five chapters.

external characteristics of the subject company, characteristics which must be also taken into account when selecting and / or weighting valuation approaches.

3.2. FACTORS DETERMINING THE SELECTION OF A VALUATION METHODOLOGY AND / OR AFFECTING THE VALUATION OUTCOME ANALYSIS OF THE FACTORS

3.2.1. DOES THE COMPANY TYPE MATTER?

Depending on the nature of assets a company holds, the type of company, such as production company or service business, may be of critical importance before determining the appropriate valuation methodology or the ranking order in terms of importance within a group of methodologies. According to valuation practitioners[103], asset based approaches are appropriate in valuing businesses with "hard" assets, for example production companies holding fixed assets such as land, buildings, machinery, equipment and other. Under this concept, asset based approaches are not suitable in valuing service businesses where goodwill constitutes a significant part of the subject company's value and therefore cannot be fully "captured" by the asset approach.

Present value approaches, such as the discounted cash flow (DCF) methodology, are not solely dependent on assets and therefore may be applied more appropriately in a variety of company types such as industrials, commercials, services etc. In that sense, present value approaches are considered more "universal" in application irrespectively of the company's type or sector[104].

Multiples may be used in many company types (industrials, commercials, services), however their application should be carefully examined depending on the industry. For example, an "acceptable" price earnings ratio in one industry may not be equally applicable in another industry.

Finally, options based methodologies may be applied in valuing the potential of any asset irrespectively of industries.

[103] Discussions in "Business Valuation Professionals" and "Business Valuation & Advisory Network": Groups of professionals and practitioners in www.linkedin.com.
[104] Present value approaches have their own limitations though.

3.2.2. THE COMPANY SIZE

Apart from the company's type that may affect the selection of a valuation methodology, the subject company's size may also be critical in determining a valuation approach.

Based on empirical evidence[105], smaller size company stocks tend to deliver higher returns in the stock market than larger size company stocks. Smaller size companies usually imply higher business risk therefore their stocks should deliver a higher return to their holders to compensate for this higher risk. When valuing small size companies via the income based valuation approach the following questions may arise with regard to the embedded return and risk factors:

-- To what extent the projected cash flows can be reliable given the fact that the company has not an "established" size in the market?
-- Should small size and not "established" companies imply a higher risk in their values?
-- Despite their smaller size, which cases of small size companies would deserve a valuation premium if indeed they would? Would a valuation premium be consistent with the fact of lack of marketability of small size companies?

In the case of the market based valuation approach, practitioners tend to believe that there are considerable differences in trading multiples between small and large size companies[106]. In general they support the view that smaller companies usually sell at lower multiples than larger companies in the same industry. This is due to the fact that smaller and riskier businesses imply higher discount rates resulting to lower market multiples such as price to earnings or price to sales ratios. On the other hand, larger and established companies imply lower business risk which means lower discount rate leading to a higher market multiple. [107]

[105] Statz Al (June 22, 2009), Does Size Matter in Business Valuation?, North Bay Business Journal. Al Statz, President of Exit Strategies Group, Inc., a business brokerage, mergers, acquisitions and valuation firm serving closely-held businesses in California.

[106] According to business valuation expert Shannon Pratt, who has authored many seminal works and is widely recognized as the "father" of privately held business valuation in the US market: "Larger companies are less risky, and therefore, are priced in the market reflecting lower discount rates and higher market multiples."

[107] Pratt Shannon P. (2000), The Market Approach to Valuing Businesses, New York: John Wiley & Sons, Inc. In this book Pratt says: "This conclusion (that smaller companies sell for lower multiples), reached from analysis of market data, is consistent with income approach (cost of capital) research, which shows that smaller companies have higher costs of capital (higher discount rates) than larger companies. Higher discount rates in the income approach should mean lower multiples in the market approach, and this relationship does, indeed, hold true." According to Shannon Pratt and to Al Statz, business valuation theory appears to be consistent with data from the US market.

3.2.3. THE PARAMETER OF CASH

Are high cash flow generating companies, and in particular cash rich companies, a special case as regards the selection of valuation methods? Theoretically a company with extensive cash can be valued via either the market, income or asset approach. In the case of the market approach, normally the equity market should value this strong advantage (of holding high levels of cash) fully and efficiently via the trading prices (price quotes in the stock exchange), which set each company's market capitalization. However, what should happen if by applying comparable trading multiples the value of the subject company tends to be lower than its cash position? This is a rare case, however it should be considered. The valuator may also utilize the income (present value) as well as the asset accumulation approach just to ascertain that the subject company is valued in alignment with its high cash position. On the other hand, when valued, does a cash rich company have a disadvantage because it does not reinvest its cash to maximize growth; Even though all the above are issues that may be worth examining when valuing a cash rich company, their effect can be recognized in the assumptions adopted only when applying income approaches such as the discounted cash flow methodology. In conclusion, it is important when valuing cash rich companies to include the income and asset approach in the selection of valuation methods.

3.2.4. FUTURE PERFORMANCE OF SUBJECT COMPANY

There are many company cases whose future earnings performance are predictable and therefore provide a "safety net" when an income based valuation (present value) approach is applied[108]. However in many other company cases a critical question has to be frequently asked: "What is going to happen to the company's business in the near future?" Whenever there is high uncertainty in a company's future performance, the present value approach should not be applied on stand-alone basis[109].

The future performance of a company's business is also dependent on its business sector which may be expected to grow, contract or stabilize in the future. A strong business sector is likely to be a justifiable factor for higher valuation of the subject company and therefore it would not be appropriate to apply a market approach based on trailing multiples. A weak business sector is likely to be a justifiable factor for

[108] Such as in the case of well established listed companies which are highly predictable in terms income. Furthermore, equity analysts following such companies tend to predict their quarterly revenues and earnings notably close to the actual announced figures.

[109] The present value approach must be combined with other methodologies such as the market and asset approaches.

lower valuation of the subject company, and therefore due to sector volatility the present value approach may not be so "appropriate" to value the company.

When estimating corporate value via the discounted cash flow (DCF) methodology, 60%-80%[110] of the subject company's extracted value may be generated during the implicit period, which denotes the company's performance in the indefinite future. Therefore the most long-lived a company is considered, the largest the justification of value deriving from the implicit period. For example, venture companies which by nature should not be considered established and long-lived, should not be exclusively valued via income based approaches such as the DCF method but also based on other methodologies such as transactions based multiples.

3.2.5. ESG FACTORS AND EQUITY VALUATION

Investors, financial analysts and valuation practitioners are constantly addressing environmental, social and governance (ESG) factors in fundamental corporate and equity valuation.[111] These are broad categories of factors which determine a company's sustainability over the years and therefore are critical in incorporating quality issues when calculating corporate value or more importantly in the selection of the valuation approach itself.[112] Valuators and equity analysts may consider the following questions[113] when attempting to integrate environmental, social and governance (ESG) factors in the calculation of fair corporate value[114]:

-- Are the projected trends of the subject company's revenues and earnings sustainable?

[110] This range is a rough estimate and is based on empirical evidence from examining valuation and equity research reports in the international markets.

[111] ESG Integration Working Group (February 2013), How investors are addressing ESG factors in fundamental equity valuation, United Nations, Principles for Responsible Investment, www.unpri.org. In September 2011, the PRI Initiative convened a working group of signatories to investigate how equity investors and analysts were integrating environmental, social and governance (ESG) analysis into their fair value calculations. Between March and May 2012 the ESG Integration Working Group interviewed 17 brokers, research providers and investment managers to draw out best practice examples of integrated equity analysis.

[112] Equity analysts in Cheuvreux, a French broker and member of Credit Agricole Group, incorporated ESG factors in their analysis and valuation. They adjusted European electricity sector earnings forecasts by applying weather probabilities to predict demand for electricity. They also examined factors such as legislation and finite fossil fuel resources. February 2012, www.cheuvreux.com

[113] A list of indicative or most common questions is presented.

[114] These questions relate to a number of assumptions considered most commonly in income based valuation approaches. However because such assumptions are needed for the calculation of figures such as revenues, EBITDA, earnings, etc., the questions also relate to market based approach (multiples).

-- To what degree they reflect ESG constraints?

-- What ESG factors will affect demand trends?

-- Are the subject company's key markets sustainable in terms of consumer preference and social trends?

-- What are the specific environmental, social and governance risks and opportunities faced by the industry which the subject company operates in?

-- How can rapidly changing customer preferences be monitored and incorporated into forecasts?

-- Is the subject company's management aware of ESG factors in the market as well as in the broader economy in which it operates?

-- How dynamic and committed towards value creation, without jeopardizing the company's focus on ESG aspects, is the executive management?

-- What regulatory or legislative change is anticipated?

-- Which are the most updated information sources with regard to the above that can be used by analysts and valuators?

Such questions shed more light to the numerous considerations or assumptions that must be made when performing corporate valuation. They also facilitate debate on the key issues that can enable entrepreneurs, investors and analysts to build and benchmark their own financial analysis and valuation techniques. An increasing number of valuators and equity analysts are inclined to apply the most possible analytical approach when valuing companies exposed to environmental, social and governance (ESG) factors and incorporate them in the assumptions of their valuation models. Income based approaches are viewed as the most analytical techniques to incorporate ESG factors when valuing companies with notable or significant exposure to such factors.

3.2.6. THE SYNERGIES FACTOR

In most cases, valuation is performed for reasons such as the sale or the purchase of a company. The largest and more unique the synergies generated by the subject

company for its acquirer, the more "demanding" (in terms of premium generated) should be the valuation process and the most detailed methodology may be needed. Therefore, the concept of synergies generated is critical not only in the decision making when it involves for example the purchase of a company and why it fits the profile of the acquirer but also in the price to be accepted and paid to the seller.

Pursche, Ficery and Herd (2007) distinguish three types of synergies which are generally observed in the majority of acquisition cases:[115]

Universal Synergy

The particular type of synergy can be generated in most acquisition cases and it implies synergies available to any purchaser that may possess efficient management skills and sufficient resources.

Endemic Synergy

This type implies synergies that may be available within the same industry. Endemic synergy is generated when the target company is acquired by another company with similar or related business activities.

Unique Synergy

Unique is the synergy that can be generated and exploited by a unique pair of companies, the target company and its acquirer.

3.2.7. THE TYPE OF ECONOMY

The type of economy and market in which the subject company operates and thus generates revenues and income may imply and ultimately incline the valuator towards the use of one valuation methodology against another. When selecting a valuation methodology or considering the significance of a methodology in a particular valuation case, several considerations may arise such as the following[116]:

[115] Pursche Bill, Ficery Kristin, Herd Tom (2007) "The Synergy Enigma", "Where Has all the Synergy Gone? The M&A Puzzle", Journal of Business Strategy, Vol. 28, Issue 5

[116] Considerations presented are indicative and do not exhaust all possible issues arising with regard to the type of economy.

-- In emerging markets and transitional economies[117], it is hard to find comparable transactions or a representative peer group to apply the multiples or market approach in the valuation of a subject company. [118]

-- When international cases of transactions and foreign comparable companies are used to apply the market valuation approach in an emerging, transitional or closed economy[119], it is likely that cross-border differences will be incorporated inappropriately in the valuation process of the subject company[120].

-- Economies with ongoing economic anomalies and crisis cycles may render the application of income valuation approach as inappropriate, since the inherent volatility of economic activity in these markets weakens the creditability of projected cash flows in the valuation process Moreover the estimation of the implied risk may become an especially complex task.

As implied conclusion, income and multiples based valuation approaches are most efficiently carried out in solid and stable economies and markets with lot of corporate and stock market activity.

3.2.8. VALUATION OF BUSINESS INTERESTS[121]

The valuation of a business may refer to a specific equity stake or the whole of the company. The controlling interest denotes participation in a company higher than 50% of the share capital. The holder of a controlling interest owns the majority of the company's capital and therefore this owner exerts control on the company. The minority interest is defined as participation in a company lower than 50% of the capital. The holder of a minority interest is simply an investor in the company without participating in its management. When performing a business valuation, the valuator may need to adjust the value of the company depending on the level of the ownership

[117] Emerging is a market with social or business activity in the process of rapid growth and industrialization. Transition market or transitional economy is an economy which is changing from a centrally planned economy to a free market. Source: www.wikipedia.org

[118] Pereiro Luis E., "Valuing Companies in Latin America: What are the Key Issues for Practitioners?", Universidad Torcuato Di Tella, Argentine. "…In several domestic economies, references from domestic companies and transactions are limited and deemed as unreliable."

[119] Closed is an economy in which no activity is conducted with outside economies. A closed economy is self-sufficient. Source: www.investopedia.com

[120] Valuation practitioners may even perform adjustments of "foreign" data to the conditions of the domestic market to align the valuation outcome with the idiosyncratic factors of a certain market.

[121] This section has been mainly extracted from discussions carried out in "Business Valuation Professionals" and "Business Valuation & Advisory Network": Groups of professionals and practitioners in www.linkedin.com.

being valued and the valuation approach being applied. The most common adjustments are the control premium, minority discount and marketability discount. Therefore, business value calculated via any valuation approach may be either controlling interest value or minority interest value.

Income valuation approaches are more suitable to value controlling interests in companies since their owner exerts full control on the company's aggregate cash flows in future. For minority interests[122], multiples are the most common valuation approach. Asset approach may be applied in valuing both controlling and minority business interests in specific cases and mainly as a supplementary valuation tool[123].

In general, valuation of business interests that generate income and earnings in an appropriate and justifiable analogy with the assets employed are usually valued as a going concern based on income (present value) approach. If this analogy does not exist and the company's assets are more valuable than the generated income based on nominal prices, then the asset valuation approach may be applied.

The following table highlights the fundamental valuation methods producing each type of business interest and the adjustments that may be applied.

Table 6: Valuation Approach, Business Interest and Adjustment

Type of Method (Approach)	Value Derived	Control Premium / Marketability Discount
Discounted Cash Flow (Present Value Approach)	Controlling Interest Value	Marketability discount may * or may not be needed
Guideline Company Method (Multiples or Market Based Approach)	Minority Interest Value	Control premium and marketability * discount may be required
Asset Accumulation Method (Asset Value Approach)	Controlling Interest Value Minority Interest Value only in specific cases	No marketability discount may be needed

* : In the case of a non-listed company.

[122] Minority interests in companies are viewed as a "generic" ownership in the sense that are usually part of investors' portfolios for a certain investment horizon and are fully liquidated when the targeted returns have been realized.

[123] For example, the asset approach is applied in valuing controlling or minority equity stakes in real estate companies or in heavily invested industrials. The liquidation approach is also applied in valuing controlling or minority equity stakes of idle businesses with significant assets.

Discounted Cash Flow Method (DCF): By its very essence as methodology, DCF derives value based on revenue, earnings and cash flow projections under the assumption of a growth, investment and financial management strategy which, both in theory and practice, only a majority shareholder could be possible to make. Therefore, the discounted cash flow method extracts a controlling interest value. In theory, this is a value which the controlling interest party can realize on sale and thus no marketability discount may be required.

Guideline Company (GLC) Method: In most cases, this method is used to value the stock of a publicly traded company based on the multiples of other publicly traded comparable companies[124]. Therefore, the guideline company method extracts a minority interest value. In this case, to extract the company's controlling value a control ownership premium may be required as addition to the stock's value. According to another school of thought, a marketability discount is indeed required since the shares of the controlling interest owner will not be freely traded.

Asset Accumulation Method: By its definition, this method extracts a controlling interest value. The method extracts the aggregate value of all company assets if it were to be sold by a controlling interest owner. That value is the actual one and thus no marketability discount is needed. From an additional standpoint, according to practitioners, this method could derive a minority control value only in companies where minority stakes can exert influential control on the sale of assets and also in the cases of holding companies.

3.2.8.1. CONTROL PREMIUM [125] IN BUSINESS VALUATION

According to the Business Valuation Committee of the American Society of Appraisers in Business Valuation Standard I "… control premium is the additional value inherent in the control interest (equity stake) that reflects power of control. The control premium is contrasted to the minority interest which does not imply any control for its holder …" According to the same source "… the minority discount is the opposite of the control premium. The minority discount is defined as the reduction

[124] In other words, GLC method is used to value freely traded shares that can be purchased or sold at minority stakes.
[125] Valuation practitioners and courts of law have long assumed that controlling interest buyers pay a control premium.

of the pro rata share of value of the entire business, which reflects the absence of the power of control …".

In business valuation, the controlling interest possesses a value higher than the one inherent in the minority interest for several reasons most of which are related to the critical strategic decisions the controlling owner can make regarding the subject company's business course. Thus the holder of a controlling premium in a company enjoys a number of valuable rights which the holder of a minority interest does not.

There are several factors responsible for the premium applied in the value of a controlling interest. It is so because the controlling interest provides its holder with the unilateral ability to: [126]

-- Appoint management members (operational management) and board members;

-- Approve compensations schemes;

-- Implement strategic decisions with regard to the company's business operations;

-- Select suppliers and vendors;

-- Decide what products and / or services to offer, their pricing, as well as which market and location to enter into;

-- Make decisions about the company's capital structure; equity capital versus debt;

-- Proceed with the sale of existing assets or with the acquisition of new ones;

-- Decide on strategic expansion through investments and acquisitions or enter into mergers with other entities;

-- List the company shares on a stock exchange;

-- Sell or acquire treasury shares;

-- Terminate the company's operations and liquidate its assets;

-- Approve payment of dividends or cancel previously approved dividend policy;

[126] Chris Mercer, "Statutory Fair Value #18: The So-Called Prerogatives of Control and the Minority Interest", www.valuationspeak.com
Pratt Shannon P., Reilly Robert F., Schweihs Robert P. (2000), "Valuing a Business", 4th Edition, McGraw-Hill

-- Make amendments or changes on the articles of incorporation or bylaws;

-- Block any or all of the above actions.

[The above are only indicative illustrations.]

The pro rata share of value of a controlling interest is usually higher than the value of the company's stock traded as minority interest in the stock market. This concept has been true and generally accepted in numerous mega-acquisition transactions of publicly traded companies, where price per share paid from the acquirer to the seller to buy controlling interest in a company is finally agreed at a level higher than the company's share price quoted in the stock market. However this concept may not be so applicable or apparent in many other business valuation transactions which refer to non listed companies or medium / small size companies where the synergies factor is not so strong or apparent.

Given all the above, there are also factors responsible for reducing the premium applied in the value of the controlling interest in a company such as:

-- Negative earnings of the company;

-- Weak cash flows that limit the ability to pay salaries, repay suppliers, etc;

-- Significant liabilities (debt) or legal indemnities that reduce the company's value or its ability to generate future value.

As noted, in most business transactions the buyer is willing to pay a premium and therefore price the deal accordingly when purchasing controlling interest in a company. The premium represents a value that may be generated if the particular buyer runs the company in the future more efficiently in terms of financial performance than its current/previous management or owner. Such expectation is reflected by a differential in the projected cash flows drawn by the new candidate acquirer. Therefore, the control premium is an incremental value that is attached to the specific buyer who can maximize the value of the subject company because this buyer can more effectively enhance the financial performance of the company based on unique actions and in a manner that no other candidate owner and certainly no minority holder could possibly do. In this sense, the control premium is paid as a result of the more favorable expectations that can be generated with regard to the subject company. These more favorable expectations indirectly derive or are implied from the owner's possession of all rights which the controlling interest implies. The control premium reflects the value not of these rights but of the ability to maximize the financial benefits when owning the particular rights (prerogatives) and to generate higher cash flows in the future.

In valuation theory, the role of the control premium can be significant. In practice though, the importance of the control premium may be less obvious and even minimal. Practitioners with broad experience in acquisitions and mergers note that in several negotiations, particularly of non listed companies, there is actually little discussion about control premium and most of it is directed into the expectations of cash flows that can be generated by the subject company and the risks relating to their realization. [127] According to valuation practitioners, unless the controlling interest acquirer anticipates unprecedented differentials in the expected cash flows that can be generated under the new ownership/management, it is very unlikely that a significant control premium will be applied when valuing a company. In most cases, the control premium is small or even close to zero. In fact what practitioners view or believe, appears to be in line with the basic economics. By paying a substantial premium in a company which cannot generate augmented or exceptional cash flows, a buyer is like accepting an especially low return on investment. Such action would never be rational in any economic and / or financial environment.

Finally, there is debate [128] as to what premium, if any, is applied to well-run established publicly traded companies where based on historical performance, both management and board of directors are expected to do an effective job in running the company.

3.2.8.2. MINORITY DISCOUNT IN BUSINESS VALUATION

Minority discount is the part of the company's controlling interest value that is deducted to estimate the minority interest value. [129] The minority discount is equal with the control premium. The minority discount is most applied in the case of publicly traded companies but it can also be applied in non-publicly traded companies. Under normal market conditions and most commonly in bull equity market cycles, acquirers pay a premium over the target company's share price in order to acquire a controlling (majority) interest in the company. Therefore, the following equation applies:

[127] Chris Mercer, CEO of Mercer Capital, a leading independent valuation firm. Chris began his business valuation career in the late 1970s and has prepared, overseen, or contributed to more than a thousand valuations for purposes related to litigation, M&A, and tax, among others. He has extensive experience in litigation engagements including statutory fair value cases and business damages and lost profits. He is also an expert in buy-sell agreement disputes.

[128] Chris Mercer, "Statutory Fair Value #18: The So-Called Prerogatives of Control and the Minority Interest", www.valuationspeak.com

[129] Chris Mercer, CEO of Mercer Capital: "…Minority discount represents an amount or percentage deducted from the pro rata share of value of 100 percent of an equity interest in a business to reflect the absence of some or all of the powers of control…"

Minority Interest Value + Minority Discount = Controlling Interest Value

or alternatively:

Minority Interest Value + Control Premium = Controlling Interest Value

The minority discount is justified by the fact that minority shareholders lack control of the company and therefore should pay a lower value per share if they wished to buy a minority interest. Many academicians and practitioners [130] share a two-sided view about the real use of the minority discount in valuations in their research papers and text books.

On the one hand, they note that the company's share price in the stock market reflects a minority interest value since most trading of the shares circulating in the stock market is realized on the basis of an investment and not as an effort to gain control. In the vast majority of cases, when an acquirer attempts to gain control in a company by purchasing shares via the stock market, the share price increases substantially. Such strategy makes the attempt to gain control even more expensive. Therefore, by this way a control premium is also, even though indirectly, paid.

On the other hand, academicians and practitioners underline that minority interest and controlling interest value may equal with one another in many cases of publicly traded companies. In other words, they imply that the company's share price in the stock market is the pro rata controlling interest value. If such was not the case, a strong and universal financial incentive would exist for takeovers of publicly traded companies.

Under the latter school of thought, the minority interest and the controlling interest value tend to approximate each other [131] [132] for the following reasons / factors as well:

[130] Chris Mercer, "Statutory Fair Value #18: The So-Called Prerogatives of Control and the Minority Interest", www.valuationspeak.com
Pratt Shannon P., Reilly Robert F., Schweihs Robert P. (2000), "Valuing a Business", 4th Edition, McGraw-Hill

[131] In companies which capital structure consists of both voting and non-voting stocks, a small premium may be attached to voting shares as compared to the non-voting ones, if it is perceived that the vote may decrease the business risk.

[132] In the case of holding companies, Chris Mercer, CEO of Mercer Capital supports the following view: "…The logic of the Integrated Theory suggests that there is no reason for minority interest discounts related to asset holding entities to be of great magnitude. In practice, I have used minority interest discounts in the range of 0% to 10% for several years when valuing asset holding entities…"

-- The company's share price in the stock market reflects all the company's future cash flows that will be distributed either as dividends or as reinvestment proceeds. Therefore there are no cash flow driven differences between a minority interest holder and a controlling interest owner.

-- Based on simple economic logic but also on historical evidence that any observer can test practically, share prices in the stock market do not fluctuate for any lack of corporate control. Otherwise, if holding a small stake in a publicly traded company would equal with a disadvantage due to lack of control, then prices would constantly decline in the stock market.

-- The minority interest discount will exist only if the candidate acquirer of the subject valued company is in position to drastically and constantly increase the company's future cash flows to a level that is not reflected in the marketable minority value.

Overall, minority discount is a two side coin in valuation, as several other influential factors of value, and can be embedded in calculations depending on the nature and the objective of each valuation case. When valuation is performed on a set of assumptions that imply future cash flows differences between a minority interest holder and a controlling interest owner, then minority discount may be applied to derive the final corporate value.

3.2.8.3. MARKETABILITY DISCOUNT [133] [134] IN BUSINESS VALUATION

The marketability discount is a percentage that is deducted from the subject company's valuation in order to adjust it for the lack of marketability. The marketability denotes the easiness and the speed by which an owner can sell his / her stake in a company. Lack of marketability may exist for example in the case of a minority stake of a non listed company as well as in the case of a controlling interest in a publicly traded company. Marketability discounts apply not only to non listed

[133] Marketability discount is also known as discount for lack of marketability (DLOM) or discount for lack of liquidity (DLOL). Practitioners use option based methods for calculating DLOM / DLOL. Several practitioners have been proponents of using market values of put options, some of which have available value data for over 30 years, in calculating such discounts.

[134] Valuation practitioners also use the term illiquidity risk premium as the potential cost of illiquidity for a certain company. To discount future cash flows and derive company value, they adjust the weighted cost of capital by adding illiquidity risk premium. They calculate it via the following formula: Illiquidity risk premium = d*(k-g)/(1-d), where d is the illiquidity discount, k the required rate of return and g the growth to perpetuity. Source: Lead Finance, www.leadfinance.gr

companies which are not publicly traded but also to listed ones with very narrow trading volume.

Practitioners apply the marketability discount in non-publicly traded companies valued via the guideline company method as well as the DCF method as their valuations are based on assumptions and data (multiples, beta factors, etc.) taken from publicly traded (listed) companies. When a practitioner uses multiples or beta factors of publicly traded companies in order to come up with a valuation for a non listed company, must then adjust the valuation for the fact that the subject company is not freely marketable.

Factors that should increase the marketability discount, thus leading to a lower valuation are the following: [135]

-- Small or zero dividend payments;

-- Poor business prospects which limit the company's chances to be resold or to attract new investors via an offering or a listing on the stock exchange;

-- The valuation of a minority interest should embed a higher marketability discount thus leading to a lower valuation. The holder of a minority interest does not control the company and therefore cannot approve the sale / offering of a company's equity stake or the whole of the company. Therefore the holder of a minority interest is not in a position to take advantage of the subject company's marketability in case it exists.

Factors that should decrease the marketability discount, thus leading to a higher valuation of the subject company are the following: [136]

-- Historically high dividend payout policy;

-- Imminent public offering of shares;

-- Stock call options granted to third parties or buy and sell agreements;

-- The valuation of a controlling interest should embed a lower marketability discount thus leading to a higher valuation. The holder of a controlling interest controls the company and therefore can approve the sale / offering of a company's equity stake or the whole of the company. Therefore the holder of a controlling interest is in a position to take advantage of the subject company's marketability.

[135] See Appendix 4 for a broader set of factors affecting marketability according to IRS DLOM Job Aid.
[136] See Appendix 4 for a broader set of factors affecting marketability according to IRS DLOM Job Aid.

There is no standard marketability discount to be applied, whenever it is needed or required, in valuations. Marketability discounts broadly range from 20% up to 50% or even higher in special cases according to valuation practitioners[137]. Furthermore, in some cases valuation practitioners utilize options to calculate the marketability discount[138].

3.2.9. DEAL MAKING PROCESS AND VALUATION [139]

The valuation of a company is very often requested during a negotiation stage of a deal or for closing a business deal such as the sale of companies or assets. Valuation practitioners sometimes allocate different valuation approaches to different stages along the business deal timetable. For example, during the early stages of a deal negotiation process, a relatively simple and easy valuation method, such as multiples or net asset value, is deemed more appropriate to apply. However in a later stage or in the final stage of the negotiation process, which requires a more technical, accurate as well as in depth approach or appraisal, a present value approach, such as the DCF method, is normally used.

3.2.9.1. EARLY IN THE PROCESS

Early in the negotiation, the following approach may be applied:

1) The valuator calculates the subject company's net asset value and compares it with the company's multiple based value (for example the earnings multiple).
2) The comparison between the two values is a test on whether both values "reconcile" with one another and whether the multiple-based value makes sense given the subject company's net asset value.

[137] Discussions in "Business Valuation Professionals" and "Business Valuation & Advisory Network": Groups of professionals and practitioners in www.linkedin.com.

[138] The concept of using put options in valuing DLOM was presented in a Linkedin valuation group discussion in 2012, by practitioner Jonathan Tang, CFA, as follows: "…Let's assume there are two securities and the only difference between them is that one is fully marketable with a freely traded price and the other is not. Suppose I try to sell you the security that is not marketable, but also gave you the option to sell it back to me at its freely traded price at any time in the future. Under these circumstances, I would argue that the non-marketable security plus the option is equivalent to the fully marketable security. As such, the value of this option is equal to the DLOM and the only question is how we value this hypothetical DLOM option…"

[139] Psarouthakis John Dr. (2012), "Valuing and Pricing the Company", WTMNews.

3) If the value of the assets is significantly lower than the company's value based on the earnings multiple, it may be implied that fixed assets are not capable of providing the particular level of earnings any longer. If this holds, the company must proceed with additional investments to upgrade its fixed assets and ensure that the particular assets can generate the earnings level implied in the multiple valuation approach. As highlighted by Psarouthakis John Dr. (2012) "…owners of companies with low assets compared to price may have stopped investing in the future of the company."

3.2.9.2. FURTHER DOWN THE PROCESS

Further down the negotiation process of a business deal, the following approach may be applied:

1) The valuator adopts an in-depth approach to value the subject company as this approach will ensure a closer look at the company's valuation and growth drivers and deliver a "more accurate" valuation outcome. The DCF is one of the most common, if not the most common, valuation methods used at this stage.
2) DCF methodology can be based on two alternative growth scenarios of the subject company. The first scenario can be drawn from the company's current performance as it is generated by its existing owners and management team, and the second scenario can be based on the company's "new" performance after changes have been made by its new owners and management team.

3.2.9.3. THE PROFILE OF THE BUYER

When the valuator is on the side of the buyer during a business deal negotiation process, a critical point that is needed to be considered is whether the candidate buyer targets a controlling or a minority interest in the subject company. For example, the discounted cash flow methodology may be more appropriate for valuing a controlling interest rather than a minority interest of the subject company.

3.2.9.4. THE PROFILE OF THE SELLER

The seller of the subject company may be either impatient or even unmotivated when it comes to selling the company. For example, in the case of a seller who is not really motivated to sell the subject company and will do so only in case a really attractive price is quoted by the buyer, the valuation of the company will be asked from the seller to be as much as high it can be justified. In such a case, a valuation methodology that can extract a higher valuation will be most likely selected.

3.2.9.5. FINANCING STRUCTURE OF DEAL WHICH IS VALUED

In many instances, the valuation of the subject company may be required in a deal which will be financed through cash or debt or via a combination of both. If the deal is financed through bank debt that will be repaid via the subject company's future cash flows, then it is important to value the company based on the DCF methodology in order to closely scrutinize the company's future cash flow performance that will determine its ability to repay debt. [140] On the other hand, if the valuation is needed in a deal financed purely through cash, the most critical point to be considered will be the premium paid in the valuation and therefore a methodology based on multiples or assets, and a cautious consideration of any marketability discount may be more appropriate.

3.2.9.6. EASE OF CALCULATIONS / AVAILABILITY OF INFORMATION AND DATA

Whenever in a business deal negotiation process the ease of calculations matters most in deriving the company value multiples may be one of the simplest methods to do so. Discounted cash flow (DCF) may appear as too complicated especially in cases where access to the subject company's financial / sector information and growth strategy is not possible for various reasons. In general, the DCF method requires a wide range of information and data in order to extract a valuation outcome whereas multiples require less input to derive a value. If there are no available data on companies comparable appropriately to the subject company, then multiples may not be the ideal method as well.

[140] Psarouthakis John Dr. (2012), "Valuing and Pricing the Company", WTMNews.

3.2.10. VALUATION BASED ON CREDIBLE ACCOUNTING AND FORECASTING

It becomes most apparent when valuing companies via the income approach, that the valuation process involves the projection of a company's financial performance in terms of revenues, expenses and income as well as in terms of investments that have to be made to generate revenues and of the financing structure of these investments[141]. In other words, the valuation process involves the forecasting payoffs for assuming a certain level of risk when owning a company or when holding shares of a company. In a second stage in the valuation process, the future payoffs have to be discounted to present values to estimate the company's value.

The forecasting is a time extension of the historic accounts drawn from a company's financial statements. Thus the projection of a series of financials during the valuation process becomes a matter of using, with the highest possible accuracy, numbers from sources such as accounting statements and internal financial data. It is also interesting to note that accounting is usually involved in both the numerator (cash flows) and the denominator (risk based on a certain financing structure) of a valuation model based on the income approach. Therefore the credibility of a valuation methodology lies also on the reliability and the accuracy of the historical financial accounts of the subject company. The credibility of the accounting standards and principles applied to derive the historic financial accounts is of fundamental importance as well[142]. According to Penman (2010), to value a company it is basically a matter of solving the following equation based on accounting[143]:

Cash flow from an asset = Earnings minus change in the balance sheet (or book) value of asset

In this context, accounting principles determine not only historic and current but also future accounts of a company. Deriving from the application of accounting principles, the financial statements depict earnings and book values from various stand points (comparative, structural, etc.) and play a key role in determining not only historic but also future components of a company's financial performance.

[141] It is notably valid when applying the discounted cash flow (DCF) methodology.

[142] US GAAP (Generally Accepted Accounting Principles) or IFRS (International Financial Reporting Standards) may be more appropriate comparing to a country's local standards when valuing a company. In several countries accounting standards produce errors in recording historic values in the balance sheet and the income statement.

[143] Penman Stephen H. (2010), Financial Forecasting, Risk and Valuation: Accounting for the Future, ABACUS, A Journal of Accounting, Finance and Business Studies.

Moreover, forecasting is a complex process since it involves compiling future financial statements of a company. Modeling pro forma future financial statements with inter-period relations among various accounts (assets, liabilities, revenues, income, etc.) is a difficult task, and also a tricky one, due to the numerous parameters that have to be taken into account and due to the large uncertainty accompanying such projections. For example, in real world, profit margins deteriorate year after year in almost all or at least the great majority of established companies. However, in most forecasting models profit margins are projected stable whereas in many cases are projected with a rising pattern. It may also be the case that different components of assets and income have different persistence over time in terms of forecasting. For example, high volatility may be implied and / or exist when forecasting earnings but it is rare to assume high volatility when forecasting fixed assets. Finally, even the companies themselves when trying to plan future budgets, they find it extremely difficult to meet targets and verify pre-planned financial scenarios.

From another stand point, looking at a valuation model, it can be argued that to derive an outcome one has to find the amount of value that the accounting has not yet booked in the financial statements. A company's value includes the difference between the book value recorded via accounting and the fair price that would be paid from a buyer. It is also true that for a given set of accounting principles, the forecasting and risk assumptions may "assist" a desirable valuation target come true.

Conclusively, the quality of accounting plays a key role in the targeted credibility of a valuation outcome. Highly credible accounting standards facilitate the application of the income based valuation approach which entails the use of accounting based projections, whereas in a different case, other alternative approaches such as the multiples may be utilized.

3.2.11. EXECUTIVE EMPLOYMENT AGREEMENTS (ACQUISITION / SALE CLAUSES)

In some cases, a company may have an employment agreement with a key executive who may not be its shareholder, according to which if the company is sold, the key executive is entitled to receive a percentage, for example 5%, of the company's equity value. This provision is not a stock option, phantom stock or any other form of equity participation, but it is a simple legally binding contract that "orders" for an action if the company is sold while the executive is under employment by the company. In this case, the equity value the shareholders are going to receive from the company's sale is proportionally adjusted due to the enactment of the legal clause.

The existence of executive employment agreements may raise a number of issues that will have to be considered during the valuation process:

-- If the estimator appraises the enterprise value or a controlling interest, the equity value derived should be reduced by the percentage of the sale clause.

-- In case of a minority stake transfer, which may not trigger the payment to the executive since no majority control is transferred, it may be the case that a number of assumptions to derive the future liability's present value (implied from the acquisition / sale clause) have to be made. The present value of this future liability is then subtracted from the company's equity value.

-- A potential purchaser of a 25% stake in a company that has a 5% executive clause, would actually have 23.75% in the company. However, the purchaser would continue to have 25% participation in the company's profit or loss.

-- The above may not hold if the obligation to the executive is not binding the company that is sold, but a majority shareholder.

-- In case the obligation to the executive originates from the company, it is likely that the company's Profit and Loss Account (Income Statement) is affected by a corresponding annual expense according to the obligation's fair value.

3.2.12. NON-COMPETE CLAUSE (NCC) OR COVENANT NOT TO COMPETE (CNC)

A non-compete clause defines a legal contract under which one party (usually an employee) agrees not to be engaged in a similar profession or trade in the competition field against another party (usually the employer). Companies make use of such legal clauses in order to protect their business interests as well as their potential future value from an incident where a key employee leaves the company for a competitor and begins abusing information about former employer's operations and / or trade secrets. This means that if a prior employee or even a prior owner is able to compete with the business that was just sold, then the business' projected cash flows will be lower and so will its value.

When there is non-compete clause (NCC) in a company, valuation practitioners may have to consider or take into account the following issues : [144]

-- NCC is a real proof that the subject company is capable of retaining its human capital and therefore remaining competitive over the long-run in the

[144] Discussions in "Business Valuation Professionals" and "Business Valuation & Advisory Network": Groups of professionals and practitioners in www.linkedin.com.

marketplace. The company should deserve a specific value over and above the company's value especially if key competitors have no similar NCC with their employees.

-- NCC does not constitute an asset that can be sold or exchanged. Therefore it can't imply a specific or additional value over and above the company's existing equity value. NCC should be treated just like any other asset of the company. Many practitioners regard NCC as one of the company's assets and all assets are ultimately reflected in the company's projected cash flows.

-- NCC may be valued only for financial reporting purposes as a separate asset in the subject company's balance sheet, however with no subsequent effect on the company's fair value.

-- According to some practitioners, NCC of company can be exchanged and traded even if the only potential counterparty of trade would be the company's acquirer.

-- During a buyout, the company to be sold may be in need to pay a departing employee a defined NCC value, thus incurring an expense. There are cases in which the company's buyer does not need the seller's executive team already under a NCC and hence the seller's executive team may demand a compensation scheme in order to depart. Such compensation may be deducted from the company's selling price. Also if the seller's executive team is under no NCC and has to be convinced not to compete in future via a compensation scheme, the buyer may ask the seller to deduct this compensation from the company's selling price.

NCC becomes an influential factor of value in business transactions where there is distinction between the company's fair value and its actual selling price. Business value, business valuation or corporate valuation is defined as the total consideration that the buyer pays or incurs in order to acquire a benefit stream. For this aggregate consideration, the buyer gets the operating balance sheet, contracts, rights, intellectual property, brands, goodwill, workforce, etc.

On the other hand, there is the purchase price allocation (PPA) concept which refers to the post valuation stage and is the allocation of total value (which equals the total consideration). The allocation may be done from a legal perspective to separate the legal business value from other payments that are to be made[145].

[145] Example: Buyer pays EUR 1,000,000 for the business value of a company. Suppose that EUR 100,000 is allocated to NCC contract. In this case, the company's legal value is EUR 900,000 which along with EUR 100,000 NCC amounts to the total consideration of EUR 1,000,000.

3.2.13. VALUATION UTILIZED IN A LEGAL CASE (IN FRONT OF JUDGES AND OTHER JUDICIAL AUTHORITIES OR LEGAL PARTIES)

The valuation methodology selection process is especially critical in the field of financial forensics[146]. Methodologies selected for a valuation outcome presented in front of a judicial authority[147] should be the most appropriate and the most accurate ones. Legal authorities ask tough questions that challenge the credibility of the valuation while such questions have to be answered thoroughly and convincingly by the business valuation analyst or the valuation expert.

Examples of questions observed in past legal cases which entailed valuation expertise in front of a court of law were the following: [148]

-- Which financing sources do you assume the subject company qualifies and at what stages in its projected life?

-- Why do you think the subject company qualifies for those financing sources?

-- What are the relevant costs of capital from those financing sources?

Therefore, valuations performed for use in the field of financial forensics must be cautiously structured in terms of valuation methods selected and forecasts or assumptions adopted, and thoroughly substantiated.

Source: Adhikari Mike, MBA, CM&AA, upcoming book on M&A Balance Sheet, "Business Valuation Professionals" and "Business Valuation & Advisory Network": Groups of professionals and practitioners in www.linkedin.com.

[146] Forensic accounting, forensic accountancy or financial forensics is the specialty practice area of accountancy that describes engagements that result from actual or anticipated disputes or litigation. "Forensic" means "suitable for use in a court of law", and it is to that standard and potential outcome that forensic accountants generally have to work. Forensic accountants, also referred to as forensic auditors or investigative auditors, often have to give expert evidence at the eventual trial. (Source: www.wikipedia.org)

[147] Common valuations for legal reasons are those performed for tax purposes or due to business disputes.

[148] "Business Valuation Professionals" and "Business Valuation & Advisory Network": Groups of professionals and practitioners in www.linkedin.com.

3.2.14. VALUATION OF SEED[149] / STARTUPS (PRE-REVENUE COMPANIES)

The task of valuing startup companies has its own special characteristics. There are several factors that affect valuation of startups which seek funding from an angel investor [150]. Such factors are the following:

-- Capability of management team (founder's experience, founder's corporate culture, management team's capacity, founder's vesting[151]);

-- Potential targeted opportunity (size of the targeted market for the startup's product / service, potential revenues for the startup);

-- Competition (strength of existing competitors, issues of intellectual properties, barriers o entry;

-- Sales channel;

-- Startup's business stage;

-- Funding needs.

For example, if the founder has a CEO experience in a similar business project, the positive effect on valuation will be high. The largest the targeted market in size the highest the positive effect on valuation. Furthermore if there is complete regulation in patents and the competitors are not strong, there will also be a positive effect on valuation of the startup. If sales channels are already established and customers are lined up, the positive effect on valuation will be higher. Finally, the smaller the funding required given the targeted revenues, the more attractive the startup company and the higher the valuation.

3.2.14.1. PRE MONEY AND POST MONEY VALUATION

When a startup is funded by an investor, it has a new value that is positively affected by the injected funds. Pre money valuation is the startup company's valuation

[149] According to market practice, "seed / startup stage" usually refers to a company which has a business idea or product under development but it is not fully operational. There is also the "early stage" indicating a company with a business concept or product that is commercially available.
[150] Startups are funded by angel investors or other type of investors.
[151] Founder's vesting may be an especially critical aspect in negotiations between the startup's management team and candidate angel investor, since many investors prefer that the founders become employees "at will" and wave any previous vesting status (At-will employment is a doctrine of American law that defines an employment relationship in which either party can immediately terminate the relationship at any time with or without any advance warning).

immediately before the closing of a round of investment[152]. Post money valuation is the startup company's valuation at the time of investment. In other words, it is the valuation of the startup right after a funding round is closed.[153]

Terminal value is the valuation of a company at the exit. Exit may be an initial public offering or an acquisition during which early investors sell their equity stakes. Return on investment (ROI, cash-on-cash) is the cash received from an investor at the exit. ROI is usually expressed by the times this cash exceeds the initial cash investment of the investor. For example, if the investor invested EUR 1 million and liquidated its stake at EUR 10 million, the ROI is 10 times (10x), etc.

The post money valuation of a startup company may be calculated via the following simple formulas: [154]

Post money valuation = Money (Investment) + Pre money valuation

Post money valuation (valuation at investment) = Terminal value (valuation at exit) / ROI (cash-on-cash)

The second formula also implies the estimation of terminal value. For example, if the post money valuation is set at EUR 1 million and the required / targeted return on investment (ROI) is 20x then valuation at exit is set at EUR 20 million.

As this formula is simplistic enough, it posts several drawbacks. It assumes that structure of ownership remains unchanged over time, thus no dilution of value is incurred for previous shareholders. In reality startup companies grow through several rounds of financing over a long-term horizon of at least 5 years. Such rounds include equity sources of cash and debt with warrants which dilute the ownership of founders and early investors alike.

[152] Average pre money valuations of seed venture capital deals have been between $ 1-3 million during 1990's and early 2000's according to market practitioners (Source: Linkedin.com valuation discussion groups).

[153] According to empirical evidence, angel investors in the US market typically invest between $50,000 - $1,000,000 in startup / seed and early stage companies. They usually seek a return 20x-30x including dilution over a period of at least 5 years. Furthermore, angel investors seek scalable investments, meaning a target company that can achieve revenues of $100 million in 5-7 years.

[154] Sahlman William (1987), The Venture Capital Method, Harvard Business School Case # 9-288-006.

3.2.14.2. DILUTION AND REQUIRED RETURN IN STARTUP COMPANIES

As it was noted previously, startup companies grow through several rounds of financing over a long-term horizon through several rounds of financing, which dilute the ownership of founders and early investors. For this reason, the targeted ROI may be as high as 30x-40x given the fact that dilution (or divergence) for an early investor over the long term until the exit time may be 3x-5x high.

Example 1

An angel investor places EUR 5 million in a European startup company at EUR 10 million post money valuation and receives shares valued at EUR 2 each. Five years later the company is sold at terminal value EUR 50 million, which denotes a 5x increase from the post money valuation. However due to many investors coming in the company in the previous years there is significant dilution and the angel investor's shares have increased to EUR 4 each which is only 2x from the initial purchase value of EUR 2 per share. In this case the increased valuation of 5x divided by the increased share value of 2x denotes a 2.5x divergence. This is the reason angel investors seek for the highest possible ROI or terminal value.

3.2.14.3. METHODS FOR CALCULATING THE TERMINAL VALUE

Business valuation analysts use two simple multiples-based methodologies to estimate a startup's terminal value.

1) Revenues and profit margin estimate at the exit year with application of P/E ratio

This approach can be illustrated by the following example: An assumption is made that the startup company can attain revenues of EUR 50 million at the exit time and that similar well run companies generate after tax earnings at a 10% profit margin, thus implying after tax earnings of EUR 5 million. If the price / earnings (P/E) multiple of the industry which the startup activates in, is historically 10x, then the terminal value is estimated at EUR 50 million.

2) Revenues estimate at the exit year with application of P/S ratio

This approach is similar in concept to the previous one and can be illustrated by the following example: The revenues the startup company can achieve at the exit time are estimated at EUR 40 million. If the sector price / sales (P/S) multiple is historically 2x, then the terminal value is estimated at EUR 80 million.

The above methods are part of a market based approach for valuing startups. Despite the volatility and high uncertainty of startups' future cash flows, valuation analysts also use the income approach, such as the DCF method, to value startups. In such a case, practitioners take into account the probability that the startup may not survive in the longer term and adjust the cash flows or the discount rate. Professor Aswath Damodaran compiles information on start-ups survival probability. For other practitioners, the income approach and particularly the DCF is not the appropriate technique to value a start-up since the projected cash flows adjusted or unadjusted are highly speculative. In practice, when a DCF approach is applied, the discount rate should stand at the range of ~30%-40%.

3.2.15. CONCLUSION

The section presented some of the most important influential factors of value as well as some critical factors determining the selection of valuation methodologies by corporate valuation practitioners. All factors presented can be classified into the following categories:

-- Factors relating to the subject company's internal characteristics such as company type, company size, parameter of cash, future performance, ESG factors, adopted accounting standards, startup companies;

-- Factors relating to the subject company's external characteristics such as type of economy, ESG factors[155];

-- Factors linked to any deal making process which a valuation is performed for such as synergies factor, valuation of business interests, stages of deal making process;

-- Factors linked to forensic issues such as executive employment agreements, non-compete clauses, use of valuation in a legal case.

As it will be complemented in the following section, all the above factors assist in better understanding the capacities as well as the limitations of the available valuation methods, techniques or practices selected and finally weighted when valuing a subject company.

[155] ESG factors may refer to both internal and external characteristics of the subject company.

3.3. VALUATION APPROACHES' WEIGHTING METHODOLOGY

3.3.1. INTRODUCTION

Chapter 2 presented in synopsis the major methodologies / approaches applied in corporate and equity valuation: (1) Present Values or Income Approach; (2) Asset Values or Asset Based Approach; (3) Multiples or Market Based Approach; (4) Options Based Valuation or Options Pricing. The chapter also presented the pros, the cons and the influential factors of the valuation approaches as well as some of the cases or situations which these approaches are mostly applicable to. In income approach for example, it was noted that Discounted Cash Flow methodology is applied in cases in which there is significant information available for the subject company that can be acquired via the company's financial disclosure policy and / or via an interview with the company's management. In market based approach (Chapter 4) as a second example, it was noted that Price / Earnings multiple is in comparison an easy to apply ratio for almost any type of company provided that an industry / sector multiple is known or can be estimated for the relevant comparison.

In real world however to value a company none of the previously presented valuation approaches is used autonomously except for very rare and / or specialized valuation cases. Instead a weighting is performed in order to take into account the different valuation approaches and their influential factors of value. The weighted valuation is the most popular and utilized process in the global business environment among valuation practitioners and financial analysts. When valuing a company, an estimator initially selects a range of valuation methodologies / approaches which at a later stage weights to extract the weighted valuation of the subject company.

As noted in previous chapters, there is no applicable technique determining the precise weights of the selected valuation methodologies / approaches which are utilized to derive the weighted corporate value. It can therefore be very useful to develop a selection and most importantly a weighting technique that determines in a more transparent manner the precise weights of the four major valuation approaches. This chapter illustrates the concept and builds a simple in use weighting methodology / technique that utilizes most of the influential factors of value already presented and discussed. Furthermore the chapter sheds light on some of the key issues arising during a valuation process: (1) How the four major valuation approaches interact with one another; (2) Why they are used for different purposes; and (3) How to decide which one/ones to choose and which one/ones is/are the most suitable or "appropriate" for a specific subject company.

The chapter's following sections present: (a) The concept and logic of the weighting methodology / technique, (b) the definition, selection and explanation of valuation approaches' influential factors, (c) the building of the weighting model (rating of factors), (d) the application of the weighting technique in specific company cases selected for the sake of an illustration of the model's application, and (e) the final conclusions.

3.3.2. CORPORATE VALUATION APPROACHES WEIGHTING TECHNIQUE - CONCEPT AND LOGIC

[Henceforth, this technique is called **Corporate Valuation Approaches Weighting Methodology / Technique** or simply **Weighting Methodology / Technique**.]

The concept of this effort is to develop a simple and practical "corporate valuation approaches weighting technique" utilizing the majority of factors that influence value or affecting the criteria by which a valuation approach is selected. Although the technique involves a significant portion of subjective judgments, at the end it is believed to provide transparent steps that facilitate the weighting of the four major valuation approaches. Ideally, this technique is most useful for listed industrial, commercial and services companies independently of the corresponding sector, economy and geographic market. It can be also applied but it is relatively less useful for other type of companies such as property companies and startups. The logic behind this technique is that all four valuation approaches may not be to the same extent appropriate, or may not be even possible to apply, for every valuation case and for every business available in the market place. Therefore there is the need to rank the importance of each of the four valuation approaches and then weight them accordingly. The technique that will be presented is based on the selection and ranking of certain value influencing factors which are then provided with a rating according to the strength or weakness each factor presents in the case of the particular company that is to be valued. The rating is based on a simplistic scale of points.

3.3.3. INFLUENTIAL FACTORS – DEFINITION, SELECTION AND EXPLANATION

The Influential Factors utilized in building this corporate valuation approaches weighting technique may refer or relate to either or all of the following:

(1) A factor affecting the subjective or objective judgment of the practitioner, financial analyst or estimator when processing and determining corporate value;

(2) A factor influencing the concept or premise by which a valuation approach is selected as the most or less appropriate one;
(3) Any factor referring to the broader or specific purpose, scope or objective of a particular valuation assignment;
(4) The availability of information that is essential in corporate valuation;
(5) Any factor relating to risks with regard to the valuation process or with regard the subject company itself;
(6) Any factor describing key characteristics of the subject company with regard to its internal or external environment;
(7) Other areas of influence on corporate value.

At this point, it is important to note the following:

-- The influential factors selected are classified according to their importance as Fundamental (F), Primary (P), and Secondary (S) Factors. 10 fundamental factors, 12 primary factors and 6 secondary factors, totaling 28 influential factors have been selected.

-- The importance of the influential factors, meaning which of the factors selected is treated as F, P, or S, is drawn from empirical evidence and is based on subjective judgment.

-- The influential factors are utilized in relation to each of the four major valuation approaches. Each factor (F, P or S) is rated / graded with points (based on predetermined scale) to denote how important or relevant the particular factor is in relation to each of the four valuation approaches. The rating is mainly based on subjective judgment but the broader concept behind the rating is elaborated (see following section).

-- For this purpose, each influential factor (F, P or S) is utilized as follows for the purposes of this weighting technique. There is the Factor in Effect, the Opposite / Reverse Factor and the Not Applied / Not Relevant factor.

The rating scales per influential factor category (F, P, or S) are presented below:

Table 7: Rating scales per influential factor category (F, P, or S)

FUNDAMENTAL FACTOR	POINTS	RATING
	100	Strong
	50	Medium
	20	Weak
	0	Zero
PRIMARY FACTOR	POINTS	RATING
	40	Strong
	20	Medium
	8	Weak
	0	Zero
SECONDARY FACTOR	POINTS	RATING
	20	Strong
	10	Medium
	4	Weak
	0	Zero

For example there is the fundamental influential factor:

Valuation Performed for **Valuing Purposes (Value in Use)** ----------→ FACTOR IN EFFECT

Valuation Performed for **Pricing Purposes (Value in Exchange)** ---→ REVERSE FACTOR

Not Relevant ----→ NOT APPLIED FACTOR

For any company considered, this factor is rated as follows in relation to the four major valuation approaches:

Table 8: Rating scale

INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
For Valuing Purposes (Value in Use)	100	50	20	0
For Pricing Purposes (Value in Exchange)	20	50	100	0
Not Applied / Not Relevant	0	0	0	0

Therefore in the above example, if the valuation of the subject company is performed for valuing purposes, then present values approach is graded with 100 points, asset

values with 50 points, multiples with 20 points and options pricing with zero points. Likewise, if the valuation of the subject company is performed for pricing purposes, then present values approach is credited with 20 points, asset values with 50 points, multiples with 100 points and options pricing with zero points. If the factor is not relevant then all valuation approaches are graded with zero points.

[The rating of all influential factors (F, P or S) is presented and explained in a following section.]

The influential factors selected and their explanation is presented in the following tables:

Table 9: Selection & Explanation of Fundamental Influential Factors

FUNDAMENTAL INFLUENTIAL FACTOR	EXPLANATION
For Valuing Purposes (Value in Use)	The value of a business is based on projecting the potential growth of the business and the corresponding cash flows, and on determining the underlying risk of the cash flows.
For Pricing Purposes (Value in Exchange)	Pricing mostly refers to a publicly traded company and depends on demand and supply for the company's stock, liquidity and other relevant factors.
Information Sufficient for Detailed Valuation	Listed companies provide sufficient and / or very detailed information for valuation approaches such as present values.
Information Non Sufficient for Detailed Valuation	Information for non listed companies is usually not sufficient for the use of detail based valuation approaches such as present values and asset values.
Established Company (Market Share, Brand Name)	It refers to a company with strong presence in a domestic or an international market. The term established is justified by the company's market share, brand name, etc.
Not Established Company	Not established can be any company which has not achieved significant market share in any business sector or geographic market, or a company which has not created a strong brand name. A startup also falls into this category.
Company Generating Well Above Average ROIC *	Any company achieving high sustainable ROIC or return on equity, for example above 20%.
Company Generating Near Average or Lower ROIC	Any company not able to achieve a high sustainable return on equity.

* : Return on invested and / or employed capital.

FUNDAMENTAL INFLUENTIAL FACTOR	EXPLANATION
Valuing a Majority Stake / Controlling Interest Valuation	Majority equity stake in a company's share capital is usually set above 50%. In companies with diverse shareholding structure, an equity stake of 33% is also considered as majority equity stake or controlling interest.
Valuing a Minority Stake / Non Controlling Interest Valuation	A non controlling interest generally represents any equity stake which is less than 50% or in some cases less than 33% of a company's share capital.
Very Specialized Nature of Business Activity	Any business activity that is performed with regard to a very niche market which may also be a small size market. Such activity can be referring to specialized technology areas, innovation driven products and services, etc.
Generic Nature of Business Activity	Any business activity that is performed with regard to a broader market need. Such activity may be relating to sectors such as financial services, industrials, construction, food and beverages, pharmaceuticals, etc.
Active Secondary Market for Company's Fixed Assets	Any organized or non organized market where significant transactions of fixed assets have been realized over a long term period. For example such can be the property market for a property development company or an unofficial trading market for an airline's fixed assets (aircrafts).
Non Active Secondary Market for Company's Fixed Assets	Lack of any identifiable organized or non organized market where a company's fixed assets can be traded.
Unexploited Assets, Licenses, etc. Owned by the Company	Any asset such as intellectual right, drug patent, oil drilling license, etc.
No Unexploited Assets, Licenses, etc. Owned	Lack of such assets.

FUNDAMENTAL INFLUENTIAL FACTOR	EXPLANATION
Property Company	Any company dealing broadly with the construction, development and operation of any type of property.
Commercial / Industrial Company	Any company broadly engaging in the production of a product, the rendering of a service, or the trading of products and / or services.
Uncertain or Volatile Economic Environment	Economic conditions that alter unexpectedly and cannot be anticipated. Such economic environment incorporates high risk in investment.
Broadly Stable or Growing Economic Environment	Any economic environment characterized by stable or improving economic conditions over a notable period of time.

Table 10: Selection & Explanation of Primary Influential Factors

PRIMARY INFLUENTIAL FACTOR	EXPLANATION
Later Stage Company (>3-5 years)	Any company performing its business activity for a period longer than 3-5 years.
Startup Company	It broadly refers to any company which has not successfully performed its business activity for a period longer than 3-5 years.
Large Size Companies (Revenues > EUR 50 million)	The factor depends on the country or the broader geographic market it refers to. For example in a small size economy a company with sales above EUR 50 million may be classified as large size company, in contrast to a larger size economy where a large size company may be one with significantly higher sales (i.e. above EUR 500 million).
Smaller Size Companies (Revenues < EUR 50 million)	Any company with sales lower than the corresponding threshold set for a large size company.
Management Depth	The factor generally and / or broadly implies any extensive knowledge and experience possessed by the management with regard to the subject company's business activity and targeted market.
Lack of Management Depth	Lack of such knowledge and experience by the subject company's management.

PRIMARY INFLUENTIAL FACTOR	EXPLANATION
Services or People Driven Companies / High Goodwill	Any services rendering company performing its business activity by extensively leaning on human resources. In addition any company generating high goodwill which is not fully reflected in the balance sheet, irrespectively of the company's type (services company or not).
Non People Driven Companies / Low Goodwill	Any other type of company.
Listed Company	Any company listed on an organized securities market.
Non Listed Company	Any company not listed on an organized securities market or any company listed on an unofficial or not fully regulated securities market.
High Free Float (>50%) (Higher Transparency)	The factor implies a diverse shareholding structure of the subject company. Free float is the company's share capital held by minority and non controlling investors / shareholders. The higher diversity of shareholders normally implies higher transparency of financial information with regard to the subject company.
Low Free Float (<50%) (Lower Transparency)	Less diverse shareholding structure may imply lower transparency of financial information with regard to the subject company.

PRIMARY INFLUENTIAL FACTOR	EXPLANATION
Strong Marketability in the Stock Market	The factor refers to any listed company stock characterized by high daily transaction volumes in the stock market.
Low or Lack of Marketability in the Stock Market	The factor refers to any listed company stock characterized by low daily transaction volumes in the stock market.
High Synergy Generation	Generation of significant synergies between the acquiring company and the acquisition target (the subject company).
Low Synergy Generation	Generation of limited synergies between the acquiring company and the acquisition target (the subject company).
Business Deals Data / Transaction Multiples Available	Any valuation multiples based on realized transactions (acquisitions) of companies similar to the subject company. The availability of such data is essential in "testing" and / or determining the subject company's value. Any "real" transaction multiple provides strong insight of value.
Business Deals Data / Transaction Multiples Not Available	Limited availability or lack of any valuation multiples based on realized transactions of companies.
Financing Structure of Deal with High Debt Burden	Any business deal / transaction (i.e. acquisition of a company) financed via bank debt.
Financing Structure of Deal with Low to Zero Debt Burden	Any business deal / transaction (i.e. acquisition of a company) financed via equity capital or via limited size bank debt.

PRIMARY INFLUENTIAL FACTOR	EXPLANATION
Companies with Hard Assets	Typically, hard assets are investments with intrinsic value such as oil, natural gas, precious metals, farmland, and commercial real estate.
Opposite Factor	Companies not possessing hard assets or not being dependent on such assets.
Significant Assets Not Fully Operational Yet	This factor refers for example, to a low - medium capacity utilization rate for a production plant or a hotel, to a low - medium load factor for an airline's fleet, etc.
Opposite Factor	It refers to a medium - high capacity utilization rate with regard to a company's fixed assets.

Table 11: Selection & Explanation of Secondary Influential Factors

SECONDARY INFLUENTIAL FACTOR	EXPLANATION
Developed Economy	Factor relating to the well known definition: Any economy, country or geographic market with highly developed economy and advanced technological infrastructure in comparison to other less developed economies, countries or regions.
Emerging Economy	Factor relating to the well known definition: Any economy, country or geographic market with social and / or business activity in process of strong growth, industrialization and technological infrastructure advancements.
Strong Cash Position	Any company possessing or generating strong cash & cash equivalents in comparison to other financial accounts of its balance sheet.
Weak Cash Position	Any company possessing or generating insufficient cash & cash equivalents in comparison to other financial accounts of its balance sheet.
High CEO and Corporate Insiders Ownership	Chairman, CEO and other executives holding, in aggregate, a significant stake in the subject company's share capital. Significant may imply an equity stake of 5%, 10% or higher in aggregate. Theoretically, the ownership of such, in aggregate, equity stake motivates these individuals to maximize shareholder value.
Low CEO and Corporate Insiders Ownership	Chairman, CEO and other executives not holding, in aggregate, a significant stake in the subject company's share capital.

SECONDARY INFLUENTIAL FACTOR	EXPLANATION
Medium to Strong ESG / Sustainability	Any company characterized by strong actions with regard to the ESG pillars: environment, corporate governance and sustainability.
Low to Medium ESG / Sustainability	Any company characterized by limited actions with regard to the ESG pillars: environment, corporate governance and sustainability.
Early Stage in Deal Making Process	During the early stage of a deal making process, there is exchange or availability of basic financial information and thus there is weaker insight in the company's real prospects and growth potential.
Later Stage in Deal Making Process	During the later or last stage of a deal making process, there is exchange or availability of significant financial information and thus there is stronger insight in the company's real prospects and growth potential.
Credible Accounting Standards (IFRS, US GAAP)	Credible implies accounting standards which are accepted internationally as "more strict" in terms of the depiction of the company's financial position. Generally, any accounting standards depicting a strongly representative financial position of the subject company.
Other Accounting Standards (Local Standards)	Generally, any accounting standards not depicting a strongly representative financial position of the subject company.

3.3.4. WEIGHTING MODEL – RATING OF FACTORS

The weighting methodology is based on the rating of the selected fundamental, primary and influential factors. The following three tables present the rating of the previous selected influential factors according to the rating scale that corresponds to each of their three categories. In these tables, the three "sides" (the factor in effect, the opposite factor and the not applied / not relevant factor) for each influential factor are rated in relation to the four major valuation approaches.

Table 12: Rating of Fundamental Influential Factors

FUNDAMENTAL INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
For Valuing Purposes (Value in Use)	100	50	20	0
For Pricing Purposes (Value in Exchange)	20	50	100	0
Not Applied / Not Relevant	0	0	0	0
Information Sufficient for Detailed Valuation	100	50	20	0
Information Non Sufficient for Detailed Valuation	20	50	100	0
Not Applied / Not Relevant	0	0	0	0
Established Company (Market Share, Brand Name)	100	50	100	0
Not Established Company	50	20	50	0
Not Applied / Not Relevant	0	0	0	0
Company Generating Well Above Average ROIC	100	50	20	0
Company Generating Near Average or Lower ROIC	20	50	100	0
Not Applied / Not Relevant	0	0	0	0
Valuing a Majority Stake / Controlling Interest Valuation	100	20	50	0
Valuing a Minority Stake / Non Controlling Interest Valuation	50	20	100	0
Not Applied / Not Relevant	0	0	0	0
Very Specialized Nature of Business Activity	100	50	20	0
Generic Nature of Business Activity	20	50	100	0
Not Applied / Not Relevant	0	0	0	0
Active Secondary Market for Company's Fixed Assets	50	100	50	0
Non Active Secondary Market for Company's Fixed Assets	100	20	100	0
Not Applied / Not Relevant	0	0	0	0
Unexploited Assets, Licenses, etc. Owned by the Company	20	20	20	100
No Unexploited Assets, Licenses, etc. Owned	50	50	50	0
Not Applied / Not Relevant	0	0	0	0
Property Company	20	100	20	0
Commercial / Industrial Company	100	20	100	0
Not Applied / Not Relevant	0	0	0	0
Uncertain or Volatile Economic Environment	50	100	100	0
Broadly Stable or Growing Economic Environment	100	50	100	0
Not Applied / Not Relevant	0	0	0	0

Table 13:Rating of Primary Influential Factors

PRIMARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Later Stage Company (>3-5 years)	20	0	40	0
Startup Company	8	0	20	0
Not Applied / Not Relevant	0	0	0	0
Large Size Companies (Revenues > EUR 50 million)	40	8	20	0
Smaller Size Companies (Revenues < EUR 50 million)	8	8	8	0
Not Applied / Not Relevant	0	0	0	0
Management Depth	40	8	20	8
Lack of Management Depth	20	8	20	0
Not Applied / Not Relevant	0	0	0	0
Services or People Driven Companies / High Goodwill	40	20	40	0
Non People Driven Companies / Low Goodwill	20	40	20	0
Not Applied / Not Relevant	0	0	0	0
Listed Company	40	8	20	0
Non Listed Company	20	8	8	0
Not Applied / Not Relevant	0	0	0	0
High Free Float (>50%) (Higher Transparency)	40	8	20	0
Low Free Float (<50%) (Lower Transparency)	20	8	8	0
Not Applied / Not Relevant	0	0	0	0
Strong Marketability in the Stock Market	20	8	40	0
Low or Lack of Marketability in the Stock Market	40	8	20	0
Not Applied / Not Relevant	0	0	0	0
High Synergy Generation	40	20	20	0
Low Synergy Generation	20	20	40	0
Not Applied / Not Relevant	0	0	0	0
Business Deals Data / Transaction Multiples Available	20	8	40	0
Business Deals Data / Transaction Multiples Not Available	40	8	20	0
Not Applied / Not Relevant	0	0	0	0
Financing Structure of Deal with High Debt Burden	40	20	20	0
Financing Structure of Deal with Low to Zero Debt Burden	20	40	40	0
Not Applied / Not Relevant	0	0	0	0
Companies with Hard Assets	20	40	20	0
Opposite Factor	40	20	40	0
Not Applied / Not Relevant	0	0	0	0
Significant Assets Not Fully Operational Yet	20	40	20	40
Opposite Factor	40	20	40	20
Not Applied / Not Relevant	0	0	0	0

Table 14:Rating of Secondary Influential Factors

SECONDARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Developed Economy	20	10	10	10
Emerging Economy	10	4	4	4
Not Applied / Not Relevant	0	0	0	0
Strong Cash Position	20	20	10	0
Weak Cash Position	10	10	4	0
Not Applied / Not Relevant	0	0	0	0
High CEO and Corporate Insiders Ownership	10	4	10	0
Low CEO and Corporate Insiders Ownership	4	10	4	0
Not Applied / Not Relevant	0	0	0	0
Medium to Strong ESG / Sustainability	20	20	10	0
Low to Medium ESG / Sustainability	10	20	20	0
Not Applied / Not Relevant	0	0	0	0
Early Stage in Deal Making Process	10	20	20	0
Later Stage in Deal Making Process	20	10	10	0
Not Applied / Not Relevant	0	0	0	0
Credible Accounting Standards (US GAAP, IFRS)	20	10	10	0
Other Accounting Standards (Local Standards)	10	10	20	0
Not Applied / Not Relevant	0	0	0	0

The following tables demonstrate the basis of the rating of each influential factor for all three categories (fundamental, primary and secondary factors). The tables present the general reasoning behind the rating and also the chapter in which each influential factor was presented, discussed and / or analyzed.

The rating process presented below mostly favors present values and multiples as compared to asset values and options pricing. In the real valuation world, present values and multiples are the most popular in use approaches among valuation practitioners and financial analysts. However in certain company cases, asset values and options pricing may complement the group of valuation approaches needed to be considered in order to extract corporate value.

Table 15: Basis / Justification / Reasoning of Rating of Fundamental, Primary and Secondary Influential Factors

FUNDAMENTAL FACTOR	BASIS OF RATING	PRESENTED IN SECTION
For Valuing Purposes (Value in Use)	To value a company an analyst should use methods such as discounted cash flows (present value or income approach) and book value (asset) based approaches. On the other hand to price a company, an analyst should use multiples and comparables (market based approach) or charting and technical indicators. Relevant information may be found to: *Damodaran Aswath (7 February 2013), Musings on Markets, Professor of Finance, New York University, Leonard N. Stern School Finance Department.* Pricing is usually performed when a minority stake is targeted in a company, whereas valuing is mostly associated with controlling interest in a company.	SECTION: "REVIEW OF SELECTIVE ACADEMIC LITERATURE AND PRACTITIONERS' VIEWS"
Information Sufficient for Detailed Valuation	The more detailed information is provided or is available a more detailed valuation approach can be adopted. For example, a present value approach such as DCF methodology can be adopted when the valuator has access to the subject company's management in order to request financial data and perform an interview with the management. Of course, when the subject company is publicly traded there is significant financial reporting available and an interview can be arranged with the management or the investor relations manager within the context of the company's communication with analysts. *Valuation practitioners' views.*	SECTION "CONSIDERATION ISSUES OF INCOME APPROACH"
Established Company (Market Share, Brand Name)	Because when using present values (income approach) analysts and valuators tend to project steady or rising cash flows, the use of the income approach to value established companies (in terms of market share and/or brand name) becomes more suitable to reflect those companies' "established" cash flow generation. On the other hand, to gauge the valuation of such companies just by using multiples or applying to multiples the highest weight to multiples, it would be too simplistic. *Valuation practitioners' views.*	"PRESENT VALUES" and "FACTORS DETERMINING THE SELECTION OF A VALUATION METHOD"
Company Generating Well Above Average ROIC	For companies generating well above average return on invested capital, present value approach is more appropriate to capture the premium the company "deserves" or should "deserve". For example in a present value approach, the valuator is in position to adopt assumptions that demonstrate or justify the subject company's ability to generate above average return on invested capital. *Valuation practitioners' views.*	"CORPORATE & EQUITY VALUATION APPROACHES"

FUNDAMENTAL FACTOR	BASIS OF RATING	PRESENTED IN SECTION
Valuing a Majority Stake / Controlling Interest Valuation	Controlling interest possesses a value higher than the one inherent in the minority interest for several reasons most of which relate to the critical strategic decisions the controlling owner can make regarding the subject company's business course. Analysts tend to weigh to a larger extent present value approaches against market approaches (multiples) when valuing controlling interests. In contrast multiples are more available for minority shareholders. *Chris Mercer, "Statutory Fair Value #18: The So-Called Prerogatives of Control and the Minority Interest", www.valuationspeak.com / Valuation practitioners' views.* THIS FACTOR IS APPLIED MORE APPROPRIATELY WHEN VALUATION IS PERFORMED FOR DEAL TRANSACTION PURPOSES.	SECTION: "VALUATION OF BUSINESS INTERESTS"
Very Specialized Nature of Business Activity	A specialized nature of business activity / company has significant value in use and less value in exchange. In this case present value approach should be weighted higher than market / multiples approach. In general, present value approach is more appropriate to illustrate the subject company's true valuation potential. *Empirical evidence / Valuation practitioners' views.*	"CORPORATE & EQUITY VALUATION APPROACHES"
Active Secondary Market for Company's Fixed Assets	The asset approach provides a strong and objective basis in valuing a company whenever there are active secondary trading markets for its assets (e.g. cars, other vehicles, machinery, etc.). The existence of secondary markets assists in the estimate process of the assets' sale price. *Empirical evidence / Valuation practitioners' views.*	SECTION: "PROS AND CONS OF ASSET APPROACH"
Unexploited Assets, Licenses, etc. Owned by the Company	The options based valuation or options pricing approach is commonly used in cases of companies that are in need to value assets they own and do not currently utilize or operate. In such cases, companies are not aware of their assets' real potential in terms of revenue generation in future. Relevant information may be found to: *Damodaran Aswath academic papers and books.*	SECTION: "REVIEW OF SELECTIVE ACADEMIC LITERATURE AND PRACTITIONERS' VIEWS"
Property Company	By definition of the subject company's nature, asset valuation approach is the most appropriate one and therefore must be weighted higher than the other approaches. *Empirical evidence / Valuation practitioners' views.*	SECTION: "PROS AND CONS OF ASSET APPROACH"
Uncertain or Volatile Economic Environment	In period of great uncertainty, the projection of cash flows becomes a hard task for valuators. Furthermore a volatile economic environment makes tougher for companies, even for the established ones, to generate steady cash flows. Therefore to weigh the valuation of the subject company more on present values (income) approach and less on market based approach (multiples) does not appear so rational in volatile economic periods. In this context, and provided that the denominator of the multiple does not substantially deviate from reality (e.g. sales, earnings, etc.), multiples appear more appropriate to value the subject company. *Empirical evidence / Valuation practitioners' views.*	"PRESENT VALUES" and CH. 4 "MULTIPLES"

PRIMARY FACTOR	BASIS OF RATING	PRESENTED IN SECTION
Later Stage Company (>3-5 years)	The income approach and particularly the DCF is not the most appropriate to value a start-up since the projected cash flows adjusted or unadjusted are highly speculative. Empirical evidence / Valuation practitioners' views.	SECTION: "VALUATION OF SEED COMPANIES / STARTUPS"
Large Size Companies (Revenues > EUR 50 million)	*Statz AI (June 22, 2009) in the article "Does Size Matter in Business Valuation?"* claimed that depending on a private company's size, price earnings ratios used in business transactions may vary significantly. For example, companies under $50 million typically sell for considerably lower price-to-earnings multiples than companies from $50 to $500 million, whereas companies over $500 million typically sell for even higher multiples than those from $50 to $500 million. Statz also sited business valuation expert *Shannon Pratt*, widely recognized as the "father" of privately held business valuation, who stated that "…Larger companies are less risky, and therefore, are priced in the market reflecting lower discount rates and higher market multiples…" Assuming that larger size companies justify higher premiums than smaller size companies, multiples (market approach) is less suitable for the former than the latter.	SECTION: "THE COMPANY SIZE"
Management Depth	The ability of the subject company to create a sustainable pool of rising leaders - managers can create excess value above market multiples. If such is true then present value approach is more appropriate to capture this premium in valuation process. *Empirical evidence / Valuation practitioners' views.*	SECTION: "EXPLANATION OF FACTORS AFFECTING VALUATION"
Services or People Driven Companies / High Goodwill	Services or people driven companies with strong goodwill may "deserve" a premium attributed to several factors that are not reflected in the financial statements. In this sense, the asset value method may not be appropriate for valuing service or people orientated businesses that are driven by intellectual rather than physical capital. On the contrary, asset value based methodologies are more suitable to capture value in companies with low goodwill or in companies which are not people driven. *Valuation practitioners' views.*	SECTION: "PROS AND CONS OF ASSET APPROACH" and CH. 6, SECTION: "DOES THE COMPANY TYPE MATTER?"
Listed Company	Listed companies have ample comparables in the stock market and due to their extensive financial reporting can be valued with multiples and present value approaches more appropriately. Due to listed companies' strong financial reporting, present value approaches, such as DCF which incorporates in depth analysis, become even more suitable for valuation. Furthermore, in the case of listed (publicly traded) companies, the asset approach does not take into account that most listed companies trade at a premium to their asset or net asset value. For non listed companies, transaction multiples are equally important as valuation approach with the asset values. *Empirical evidence / Valuation practitioners' views.*	"PRESENT VALUES" and CH. 4 "MULTIPLES"

PRIMARY FACTOR	BASIS OF RATING	PRESENTED IN SECTION
High Free Float (>50%) (Higher Transparency)	High free float in a listed company may imply and/or satisfy the market need for higher transparency and dissemination of information. In this sense, present values become the valuation approach most suitable to value the subject company due to the implied greater transparency and financial reporting that a company with high free float provides to investors. *Empirical evidence / Valuation practitioners' views.* FACTOR MOSTLY APPLIED IN LISTED COMPANIES.	SECTION "CONSIDERATION ISSUES OF INCOME APPROACH"
Strong Marketability in the Stock Market	For a company with low or lack of marketability in the stock market, the multiples approach becomes less important in weight. *Empirical evidence / Valuation practitioners' views.*	SECTION: "VALUATION OF BUSINESS INTERESTS"
High Synergy Generation	A purchaser that would make the most use of the asset or company under sale would be most likely willing to pay a premium. In this case, present value approach is more effective in capturing this premium.	SECTION: "THE SYNERGIES FACTOR"
Business Deals Data / Transaction Multiples Available	Availability of really comparable and significant in number multiples / transaction data increases the weight the multiple approach should have in the valuation process. Furthermore, *Alford A.W. (1992) in the article "The Effect of the Set of Comparable Firms on the Accuracy of the Price Earnings Valuation Method"* found out that "…matching firms on industry and ROE produced the lowest errors for a set of methods for determining the P/E ratio…" *Empirical evidence / Valuation practitioners' views.* THIS FACTOR IS APPLIED MORE APPROPRIATELY WHEN VALUATION IS PERFORMED FOR DEAL TRANSACTION PURPOSES.	SECTION: "TRANSACTIONS BASED APPROACH"
Financing Structure of Deal with High Debt Burden	Valuation performed on a company which carries significant debt burden following a recent financing restructuring (as result of a business deal or an investment decision) has to take into account this high debt burden to extract the most accurate possibly valuation. Present value approach such as DCF which subtracts debt to derive equity value, becomes more appropriate in comparison to multiples which may not fully incorporate the debt factor. *Empirical evidence / Valuation practitioners' views.* THIS FACTOR IS APPLIED MORE APPROPRIATELY WHEN VALUATION IS PERFORMED FOR DEAL TRANSACTION PURPOSES.	SECTION: "DISCOUNTED CASH FLOW METHOD"
Companies with Hard Assets	According to valuation practitioners, asset based approaches are appropriate in valuing businesses with "hard" assets, for example production companies holding fixed assets such as land, buildings, machinery, equipment and other. *Empirical evidence / Valuation practitioners' views.*	SECTION: "DOES THE COMPANY TYPE MATTER?"
Significant Assets Not Fully Operational Yet	Options based approach is considered as an effective tool for valuing a not fully utilized asset or project as it provides deeper information to the investor about the project's financial benefits during a specific time period until the expiration date. Empirical evidence / Valuation practitioners' views.	SECTION: "CONSIDERATIONS OF OPTION PRICING APPROACH"

SECONDARY FACTOR	BASIS OF RATING	PRESENTED IN SECTION
Developed Economy	Forecasting of financial accounts in developed economies can be considered as a more "safe" exercise in comparison to forecasting in emerging or undeveloped economies where greater economic volatility and / or uncertainty may exist. In this sense, present value approach can be utilized more effectively in a developed economy. Furthermore, in emerging markets and transitional economies it is hard to find comparable transactions or a representative peer group to apply the multiples or market approach in the valuation of the subject company. *Empirical evidence / Valuation practitioners' views.*	SECTION: "THE TYPE OF ECONOMY"
Strong Cash Position	It is important when valuing cash rich companies to weight higher the income and asset approaches. Theoretically, a company with extensive cash can be valued via either the market, income or asset approach. In the case of the market approach, normally the equity market should value the strong cash position fully and efficiently via trading prices (price quotes in the stock exchange) which imply the company's market capitalization. However this is not always the case. *Empirical evidence / Valuation practitioners' views.*	SECTION: "THE PARAMETER OF CASH"
High CEO and Corporate Insiders Ownership	Strong but not excessive corporate ownership positively favors operating performance and market value. This may imply that in such cases, the use of both income and market based approaches is consistent with the role and impact of these factors on valuation. Implied conclusion from *Oren Füerst and Sok-Hyon Kang (2000).*	SECTION: "REVIEW OF SELECTIVE ACADEMIC LITERATURE AND PRACTITIONERS' VIEWS"
Medium to Strong ESG / Sustainability	An increasing number of valuators and equity analysts tend to apply the most analytical approaches, namely the present and the asset values, when valuing companies exposed to environmental, social and governance (ESG) factors as these analysts wish to incorporate all these factors into the assumptions of their valuation models. Present value is the approach that entails the most analytical assumptions to derive corporate value.	SECTION: "ESG FACTORS AND EQUITY VALUATION"
Early Stage in Deal Making Process	Early in deal making process, multiples are more appropriate for valuing the subject company, whereas later in the deal making process the present value approach can be used. *Empirical evidence / Valuation practitioners' views.* Furthermore, in early stages of negotiations, the valuator may not have direct access to detailed information essential to perform a determination of the subject company's value. Therefore it is a common practice for the valuator to consider the net book of the subject company's assets. *Psarouthakis John (8 February 2012), Valuing and Pricing the Company.* THIS FACTOR IS APPLIED MORE APPROPRIATELY WHEN VALUATION IS PERFORMED FOR DEAL TRANSACTION PURPOSES.	SECTION: "REVIEW OF SELECTIVE ACADEMIC LITERATURE AND PRACTITIONERS' VIEWS"
Credible Accounting Standards (US GAAP, IFRS)	The quality of accounting plays a key role in the targeted credibility of the valuation outcome. Highly credible accounting standards facilitate the application of the income based valuation approach which entails the use of a great number of accounting based projections. *Empirical evidence / Valuation practitioners' views.*	SECTION: "VALUATION BASED ON CREDIBLE ACCOUNTING AND FORECASTING"

Note: Empirical evidence is used with the meaning of a source of knowledge acquired by means of observation of valuation practices. Empirical evidence is therefore treated as information that justifies a belief in the truth or falsity of the potential effect of an influential valuation factor.

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4. CHAPTER 4: APPLICATION OF THE PROPOSED METHODOLOGY FOR 10 SELECTED COMPANIES

4.1. INTRODUCTION

The previous chapter dealt with the presentation of the valuation approaches' influential factors as well as with the rating of these factors in order to form a weighting methodology. Based on the above proposed methodology, the application of the weighting methodology is demonstrated in 10 indicative company cases. The companies have been selected based on a range of criteria such as business sector, local or international market operations, financial performance, stock exchange listing or privately holding, etc. Among the selected companies, there are 8 listed and 2 non listed or privately held companies.

All companies constitute unique cases however at the same time they are used as generic examples[156] in order to demonstrate the application of the weighting methodology and indicate how the rating of factors is aligned with each company's specific characteristics. Therefore, these indicative companies may represent 10 alternative standardized corporate cases in terms of valuation approaches weighting.

The valuation approaches' weighting in each of the above company cases that is presented below it is extracted via the rating of the influential factors (fundamental, primary and secondary ones) based on knowledge for each company's qualitative and quantitative characteristics.

4.2. APPLICATION OF THE PROPOSED METHODOLOGY AND PRESENTATION OF THE RESULTS

4.2.1. INDITEX

Inditex is a global corporation with operations in many countries. Inditex is listed in Spain and internationally, and is characterized by a strong as well as healthy financial

[156] As it is shown in following section, several of the companies examined may represent a special category on its own with regard to the weighting of the valuation approaches.

performance. It is one of the world's largest fashion distributors and well established in all geographic markets it operates. It is thoroughly covered by financial analysts.

For this first example of company case, the following paragraphs demonstrate the concept, application and the results of the proposed weighting methodology based on the selected influential factors highlighted in the previous chapter.

Suppose that a financial analyst wishes to value Inditex using the four major valuation approaches (present values, asset values, multiples and options pricing). The analyst has extracted four fair values of Inditex, based on each of the four valuation approaches however he/she needs to weight the four fair values in order to come up with a weighted valuation figure for Inditex. It is important to note that until today and on international level, no official (promoted by an organization or institution) or well known (presented by valuation practitioners) weighting technique exists, that could be used towards this purpose.

As result, the financial analyst can rely on this thesis' proposed weighting methodology in order to extract the precise weights of the four valuation methods instead of randomly assigning each valuation method with a weight that in the end would be of course non-justified. This proposed weighting technique is based on the selection of three categories of influential (or determinant) factors, namely the fundamental, the primary and the secondary factors, and on the ratings of these factors as they are presented in the previous chapter. The ratings of the influential factors are based on a simplistic scale denoting each factor's importance or relevance to each of the four valuation approaches (or methods).

In the case of Inditex, the analyst can apply the weighting methodology using the previously presented three tables of factors' ratings and choosing the applicable "side" from each factor. The previous chapter demonstrated that there are three "sides" (the factor in effect, the opposite factor and the not applied / not relevant factor) for each influential factor that are rated in relation to the four major valuation approaches.

With regard to the first table of factors' ratings, the **Fundamental Factors**, the analyst can proceed with the following steps and assumptions. It is noted that the Fundamental Factors are the most important influential factors of value according to this thesis and their ratings are based on the scale presented below.

FUNDAMENTAL FACTOR	POINTS	RATING
	100	Strong
	50	Medium
	20	Weak
	0	Zero

The scale above has the only purpose to numerically present the ratings indicated (Strong, Medium, Weak, Zero).

1st Fundamental Factor: Suppose that the valuation of Inditex is performed not for the purpose of strategic advisory to the management, but instead for the purpose of a specific transaction (sale of a minority equity stake of the company). In this case, the analyst selects the ratings **"For Pricing Purposes (Value in Exchange)"** (the ratings are as follows: **Present Values 20 points, Asset Values 50 points, Multiples 100 points, Options Pricing 0 points**). These ratings assign higher points to those valuation approaches which are strongly related to the real world transaction prices, such as the multiples, primarily, and to a lesser extent the asset values (as they are based on the assets' real value). If the valuation was to be conducted for strategic reasons (for example advisory to the company's management) and not for transaction purposes, then the more analytical approaches such as the present values would be more appropriate and would have been assigned with higher points than the other approaches (in this case the ratings "For Valuing Purposes (Value in Exchange") would be selected with the rating points having as follows: Present Values 100 points, Asset Values 50 points, Multiples 20 points, Options Pricing 0 points).

2nd Fundamental Factor: Since Inditex is a publicly traded company and there is a lot of information disclosed and available for in depth analysis and valuation, the financial analyst by definition selects the ratings **"Information Sufficient for Detailed Valuation"** (the ratings are as follows: **Present Values 100 points, Asset Values 50 points, Multiples 20 points, Options Pricing 0 points**). In this case, the valuation approaches which entail a more detailed analytical process are weighted higher than the other ones.

3rd Fundamental Factor: By certainty, Inditex falls under the category of an established company in terms of market shares and brand name not only regionally but also globally. The Company operates over 5,600 stores in 85 geographic markets in all 5 continents. Therefore with regard to this factor, the ratings **"Established Company (Market Shares, Brand Name)"** are selected (**Present Values 100 points, Asset Values 50 points, Multiples 100 points, Options Pricing 0 points**). Present values and multiples are weighted higher in this case, in order to more effectively reflect the "established" cash flow generation by Inditex as well as the Company's publicly traded status and therefore its multiple-based valuation on a daily basis via the stock market.

4th Fundamental Factor: Historically Inditex has generated a return on equity of over 20% per annum which is by definition well above the average standards in the contemporary corporate world. Therefore with regard to this factor the analyst may select the ratings **"Company Generating Well Above Average ROIC"** (with the rating points having as follows: **Present Values 100 points, Asset Values 50 points, Multiples 20 points, Options Pricing 0 points**). As highlighted in previous chapter, for companies generating well above average return on invested capital, present value approach is more appropriate to capture the premium the company "deserves" or

should "deserve". For example in a present value approach, the valuator is in position to adopt assumptions that demonstrate or justify the subject company's ability to generate above average return on invested capital.

5th Fundamental Factor: Suppose again that the valuation of Inditex is performed not for the purpose of strategic advisory to the management, but instead for the purpose of a specific transaction (sale of a minority equity stake of the company). In this case and with regard to this particular factor, the analyst may chose the ratings **"Valuing a Minority Stake / Non Controlling Interest Valuation"** (with the rating points having as follows: **Present Values 50 points, Asset Values 20 points, Multiples 100 points, Options Pricing 0 points**). When valuing a minority stake, which any investor can also acquire via the stock market (when referring to a listed company such as Inditex), a market or transaction based approach is considered as the most appropriate approach.

On the other hand, a controlling interest possesses a value higher (namely a premium) than the one inherent in the minority interest for several reasons most of which relate to the critical strategic decisions the controlling owner can make regarding the subject company's business course. Analysts tend to weigh to a larger extent present value approaches against market approaches (multiples) when valuing controlling interests, because present value approaches is the essential tool to detect and justify the above premium.

6th Fundamental Factor: Given the fact that the nature of the business activity (design, manufacturing, distribution and retail sale of apparel, footwear and fashion accessories) of Inditex cannot be considered, in any case, as a very specialized one, the analyst with regard to this factor selects the ratings **"Generic Value of Business Activity"** (**Present Values 20 points, Asset Values 50 points, Multiples 100 points, Options Pricing 0 points**). Otherwise, if Inditex conducted a specialized business activity, then the present values approach would be more appropriate to illustrate the company's true valuation potential since the particular approach would be the only one to incorporate analytical assumptions relating to the realities as well as dynamics of a specialized business activity.

7th Fundamental Factor: This factor is not applicable for Inditex since the company does not possess any fixed assets, and to a large extent, that could be traded in an organized secondary market. Therefore the ratings **"Not Applied / Not Relevant"** are selected (**Present Values 0 points, Asset Values 0 points, Multiples 0 points, Options Pricing 0 points**). If for example, it was known that Inditex possesses to a significant extent fixed assets, for example a fleet of ships, etc., then this factor would be applicable. In that case, if there was an organized trading market for the company's ships the ratings "Active Secondary Market for the Company's Fixed Assets" (Present Values 50 points, Asset Values 100 points, Multiples 50 points, Options Pricing 0 points) would be selected by the analyst with the asset value

approach being weighted higher by definition. If the company had a fleet of ships but no active secondary market existed for its assets, then the ratings "Non Active Secondary Market for the Company's Fixed Assets" (Present Values 100 points, Asset Values 20 points, Multiples 100 points, Options Pricing 0 points) would be selected by the analyst.

8th Fundamental Factor: Based on the wider knowledge available for Inditex and as its business activity implies, the company does not own any unexploited assets, such as licenses, patents, etc., and therefore this factor is also considered as non relevant. In this case the ratings **"Not Applied / Non Relevant"** are selected (**Present Values 0 points, Asset Values 0 points, Multiples 0 points, Options Pricing 0 points**). This factor would mostly apply to corporate entities holding technological patents, oil drilling licenses, etc. on the basis of such assets representing a high percentage of their total assets. If such was the case, then the ratings "Unexploited Assets, Licenses, etc. Owned by the Company" would have been selected (with the ratings having as follows: Present Values 20 points, Asset Values 20 points, Multiples 20 points, Options Pricing 100 points). It is important to note that the options pricing valuation approach is commonly used in cases of companies that are in need to value assets they own and do not currently utilize or operate (such as technological patents, oil drilling licenses, etc.).

9th Fundamental Factor: With regard to this factor, as Inditex is not a property company but instead a design, manufacturing and trading company, the ratings **"Industrial / Commercial Company"** are selected (with the rating points having as follows: **Present Values 100 points, Asset Values 20 points, Multiples 100 points, Options Pricing 0 points**). It is noted that Inditex does own thousands of buildings for its stores all over the world however its property portfolio is not the driving force behind its real growth and valuation potential. As result, in this case the asset values are weighted lower than the present values and the multiples.

10th Fundamental Factor: Inditex activates in the global market place (in 85 geographic markets in all 5 continents as mentioned previously), which by no means can be considered as an uncertain or volatile economic environment, at least on an aggregate basis. Historically, the global economy is by no means as volatile or uncertain as other regional or national economies, on aggregate basis, and this is manifested by the relevant historic growth rates of the global economy over the years or decades. Therefore with regard to this factor, the ratings **"Broadly Stable or Growing Economic Environment"** are selected (**Present Values 100 points, Asset Values 50 points, Multiples 100 points, Options Pricing 0 points**). The ratings are based on the premise that during a period of great economic uncertainty steady cash flow generation and multiples-based valuation via the stock market cannot be taken for granted and vice versa.

With regard to the second table of factors' ratings, the **Primary Factors**, the analyst can proceed with the following steps and assumptions. It is noted that the Primary Factors are the second most important influential factors of value according to this thesis and their ratings are based on the scale presented below.

PRIMARY FACTOR	POINTS	RATING
	40	Strong
	20	Medium
	8	Weak
	0	Zero

The scale above has the only purpose to numerically present the ratings indicated (Strong, Medium, Weak, Zero).

1st Primary Factor: Inditex is an established company with a corporate history extending up to several decades. With regard to this factor, the analyst by definition selects the ratings **"Later Stage Company (>3-5 years)"** (with the rating points having as follows: **Present Values 20 points, Asset Values 0 points, Multiples 40 points, Options Pricing 0 points**). This is due to the concept that the two major valuation approaches can be more appropriately applied to a company with a long business history which is likely to have become a publicly traded company as in the case of Inditex. If the subject company was a startup, then both present values and multiples would be rated (and weighted) with lower points in order to take into account that a startup has highly speculative, thus non credible, cash flows and it will take years to solidify its business performance in order to become a listed company and "enjoy" a credible valuation via the stock market. In that case the analyst would choose the ratings ""Startup Company" (Present Values 8 points, Asset Values 0 points, Multiples 20 points, Options Pricing 0 points).

2nd Primary Factor: With regard to this factor, and by definition in the case of Inditex, the analyst can select the ratings **"Large Size Companies (Revenues >50 million)"** (with the rating points having as follows: **Present Values 40 points, Asset Values 8 points, Multiples 20 points, Options Pricing 0 points**), which weight higher the present values and multiples approaches. It is broadly accepted that large size companies are in a position to generate higher and more stable cash flows than smaller size companies. Furthermore, due to their large size, transaction multiples in such companies are more meaningful and credible since they are based on fundamentals (such as earnings, book values, sales, etc.) which are more solid than in the case of small size companies. In a different case, the ratings "Smaller Size Companies (Revenues <50 million) would be selected by the analyst, meaning that both present values and multiples would be rated with lower points (Present Values 8 points, Asset Values 8 points, Multiples 8 points, Options Pricing 0 points).

3rd Primary Factor: The analyst can easily assume in the case of Inditex that the company, given its long and successful business performance, is capable of creating a

sustainable pool of rising leaders - managers who in turn can generate excess value above market multiples. In such case, the present values are the most appropriate approach versus the other three ones to reflect such a premium. Therefore the analyst can select the ratings **"Management Depth"** (with the rating points having as follows: **Present Values 40 points, Asset Values 8 points, Multiples 20 points, Options Pricing 0 points**). If the analyst does not believe that, then he/she can select the alternative ratings "Lack of Management Depth" (Present Values 20 points, Asset Values 8 points, Multiples 20 points, Options Pricing 0 points) or even the ratings "Not Applied / Not Relevant" (Present Values 0 points, Asset Values 0 points, Multiples 0 points, Options Pricing 0 points).

4th Primary Factor: With regard to this factor, in the case of Inditex the analyst can select the ratings **"Non People Driven Companies / Low Goodwill"** (with the rating points having as follows: **Present Values 20 points, Asset Values 40 points, Multiples 20 points, Options Pricing 0 points**). This can be done on the premise that the company is not a services or people driven company. In other words Inditex is not for example a company holding intellectual property or even a consulting company offering services and therefore depending a lot on its goodwill. On the contrary Inditex is a manufacturer and trader of apparel and similar products appealing to the masses across the globe. If Inditex was to a large extent a people driven company, then it would likely deserve a premium which would be most appropriately reflected via the present values and transaction multiples approaches. In that case the ratings "Services or People Driven Companies / High Goodwill" would be selected by the analyst (with the rating points having as follows: Present Values 40 points, Asset Values 20 points, Multiples 40 points, Options Pricing 0 points).

5th Primary Factor: With regard to this factor the analyst can by definition select the ratings **"Listed Company"** (with the rating points having as follows: **Present Values 40 points, Asset Values 8 points, Multiples 20 points, Options Pricing 0 points**). This selection is based on the simple logic that since Inditex is a publicly traded company, the two major valuation approaches (present values and multiples) must be the ones with the higher weights versus the other two approaches. It is widely accepted that listed companies have ample comparables in the stock market and due to their extensive financial reporting can be valued via multiples and present values more effectively.

6th Primary Factor: This factor applies mainly to the listed companies as in the case of Inditex. Looking at the relevant company's disclosure with regard to its shareholders' structure, the analyst is led to select the ratings **"Low Free Float (<50%) (Lower Transparency)"** (with the rating points having as follows: **Present Values 20 points, Asset Values 8 points, Multiples 8 points, Options Pricing 0 points**). In general, high free float in a listed company may imply and/or satisfy the market need for higher transparency and dissemination of information. In this sense,

present values become the valuation approach most suitable to value the subject company, and vice versa. If Inditex had a larger free float in its shareholders' structure, then a higher (than the current one) dissemination of information and financial reporting would be likely required from investors. In that case the present values as well as multiples would be rated higher as more appropriate valuation approaches and the analyst would select the ratings "High Free Float (>50%) (Higher Transparency)" (with the rating points having as follows: Present Values 40 points, Asset Values 8 points, Multiples 20 points, Options Pricing 0 points).

7th Primary Factor: For a company with low or lack of marketability (trading depth) in the stock market, the multiples approach becomes less important in weight since it is based on a stock market price that has been derived from relatively fewer transactions. The reverse is also true. Inditex stock is a large cap stock with a market capitalization of tens of billions Euros and with an average daily transaction value exceeding tens of billions Euros as well. In that sense, in the case of Inditex and with regard to this factor, the analyst selects the ratings **"Strong Marketability in the Stock Market"** (with the rating points having as follows: **Present Values 20 points, Asset Values 8 points, Multiples 40 points, Options Pricing 0 points**).

8th Primary Factor: This factor would apply in case the subject company, Inditex, was involved as target-company in an acquisition or merger. As noted earlier the valuation is performed for the purpose of a specific transaction (sale of a minority equity stake of the company) which does not fall under the above category of corporate action (it is not a merger or an acquisition). In this case the ratings **"Not Applied / Non Relevant"** are selected by the analyst (**Present Values 0 points, Asset Values 0 points, Multiples 0 points, Options Pricing 0 points**). Otherwise, if Inditex was to be valued as a target company during an acquisition process, the analyst would select the ratings "High Synergy Generation" (Present Values 40 points, Asset Values 20 points, Multiples 20 points, Options Pricing 0 points) or "Low Synergy Generation" (Present Values 20 points, Asset Values 20 points, Multiples 40 points, Options Pricing 0 points) depending on his/her belief about the corporate action's true effect in terms of synergies. If the analyst believed that there would be a high synergy generation out of the corporate action (the merger or acquisition), then Inditex would be valued via a higher weight of present values (among the four valuation approaches) in order to capture the premium which the potential buyer would have to pay, and vice versa. As it was noted in previous chapter, a purchaser that would make the most use of the (target) company under sale would be most likely willing to pay a premium, and in such a case the present values approach would be more effective in capturing that premium.

9th Primary Factor: With regard to this factor, the analyst can select the ratings **"Not Applied / Non Relevant"** (**Present Values 0 points, Asset Values 0 points, Multiples 0 points, Options Pricing 0 points**), since the valuation is not performed

for the purpose of any large corporate action involving Inditex. If hypothetically Inditex was involved as a target company in a acquisition bid, then the analyst would select "Business Deals Data / Transaction Multiples Available" (Present Values 20 points, Asset Values 8 points, Multiples 40 points, Options Pricing 0 points) on the premise that there would be great availability of really comparable and significant in number multiples or transaction data in order to value the company. Inditex does belong to a business sector with a lot of comparable companies and with many available transaction data which would facilitate and make even more credible the use of the multiples valuation approach for the purpose of a large corporate action. In such a case multiples would be weighted higher than the other valuation approaches.

10th Primary Factor: With regard to this factor, the analyst can select the ratings **"Not Applied / Non Relevant"** (**Present Values 0 points, Asset Values 0 points, Multiples 0 points, Options Pricing 0 points**), since as noted earlier the valuation is not performed for the purpose of any large corporate action involving Inditex.

Otherwise if for example Inditex was bidding to acquire another company by using debt and also offering part of its own shares, and therefore there was a need to value Inditex in order to derive the number of shares offered as part of the paying price, then the analyst would accordingly select the ratings "Financing Structure of Deal with High Debt Burden" (Present Values 40 points, Asset Values 20 points, Multiples 20 points, Options Pricing 0 points) or "Financing Structure of Deal with Low to Zero Debt Burden" (Present Values 20 points, Asset Values 40 points, Multiples 40 points, Options Pricing 0 points) depending on the size of debt used for the acquisition. For example if there was a high debt burden involved, then the most analytical approach, which are the present values, would have to be weighted higher (than the other valuation approaches) in order to most accurately reflect the debt parameters of the deal and their effect on the valuation of Inditex (the acquiring company). On the contrary, asset values and multiples, as valuation approaches, would not accurately reflect the debt parameters of the deal and their effect on the valuation of Inditex since the particular approaches do not incorporate debt parameters in their calculations.

11th Primary Factor: According to valuation practitioners, asset based approaches are more appropriate in valuing businesses with "hard" assets, for example companies holding significant property in order to host their manufacturing facilities and operate their retail stores as in the case of Inditex. The property portfolio of Inditex is very significant given that the company owns the majority of the over 5,600 retail stores operating globally under its network, a portfolio that should not be "underestimated" in a valuation process. Thus with regard to this factor, the analyst can select the ratings **"Companies with Hard Assets"** (**Present Values 20 points, Asset Values 40 points, Multiples 20 points, Options Pricing 0 points**) which

implies a higher weight for the asset values in comparison to the other valuation approaches.

12th Primary Factor: With regard to this factor, the analyst can select the ratings **"Not Applied / Non Relevant"** (**Present Values 0 points, Asset Values 0 points, Multiples 0 points, Options Pricing 0 points**), since there is no public knowledge of Inditex possessing assets (for example large scale franchising agreements) that are not fully operational yet. On the opposite case, the analyst would select the ratings "Significant Assets Not Fully Operational Yet" (Present Values 20 points, Asset Values 40 points, Multiples 20 points, Options Pricing 40 points) which implies higher weights for the asset values and options pricing approaches.

With regard to the third table of factors' ratings, the **Secondary Factors**, the analyst can proceed with the following steps and assumptions. It is noted that the Secondary Factors are the least important influential factors of value according to this thesis and their ratings are based on the scale presented below.

SECONDARY FACTOR	POINTS	RATING
	20	Strong
	10	Medium
	4	Weak
	0	Zero

The scale above has the only purpose to numerically present the ratings indicated (Strong, Medium, Weak, Zero).

1st Secondary Factor: With regard to this factor, the analyst can select the ratings **"Developed Economy"** (**Present Values 20 points, Asset Values 10 points, Multiples 10 points, Options Pricing 0 points**). Forecasting of financial accounts in developed economies can be considered as a more "safe" as well as meaningful exercise in comparison to forecasting in emerging or undeveloped economies where greater economic volatility and / or uncertainty may exist. In this context, the present values approach can be utilized more effectively in a developed economy. Inditex activates in the global economy however the majority of its revenues and income derive from developed economies on aggregate basis. Therefore the company by definition falls under the above rating category.

2nd Secondary Factor: Inditex is a company holding billions of Euros in cash with negligible debt position. Therefore with regard to this factor, the analyst can select the ratings **"Strong Cash Position"** (**Present Values 20 points, Asset Values 20 points, Multiples 10 points, Options Pricing 0 points**). In general it is important when valuing cash rich companies to weight higher the income and asset approaches given the fact that cash & cash equivalents constitute an important asset which must analytically taken into account during the valuation process.

3rd Secondary Factor: With regard to this factor, and given that Inditex is characterized by a high participation of its management team in the company, the analyst can select the ratings **"High CEO and Corporate Insiders Ownership"** (**Present Values 10 points, Asset Values 4 points, Multiples 10 points, Options Pricing 0 points**). Strong but not excessive corporate ownership positively favors operating performance and market value. Thus in such cases, the use as well as a relatively higher weight of both income and market based approaches is consistent with the role and impact of these factors on valuation.

4th Secondary Factor: Due to its financial size and corporate as well as social impact, Inditex applies for years a series of policies relating to the so-called ESG (Environment, Society, Governance) factors. Therefore with regard to this factor, the analyst can select the ratings **"Medium to Strong ESG / Sustainability"** (**Present Values 20 points, Asset Values 20 points, Multiples 10 points, Options Pricing 0 points**). An increasing number of valuators and equity analysts tend to apply the most analytical approaches, namely the present and the asset values, when valuing companies exposed to environmental, social and governance (ESG) factors as these analysts wish to incorporate all these factors into the assumptions of their valuation models.

5th Secondary Factor: With regard to this factor, the analyst can select the ratings **"Not Applied / Non Relevant"** (**Present Values 0 points, Asset Values 0 points, Multiples 0 points, Options Pricing 0 points**), since as noted earlier the valuation is not performed for the purpose of any large corporate action or business deal involving Inditex. Hypothetically, if Inditex was involved as a target company in a acquisition bid, then the analyst would select "Early Stage in Deal Making Process" (Present Values 10 points, Asset Values 20 points, Multiples 20 points, Options Pricing 0 points) or "Later Stage in Deal Making Process" (Present Values 20 points, Asset Values 10 points, Multiples 10 points, Options Pricing 0 points) depending on the stage of negotiations. Early in the deal making process when there is no great need for in depth analysis and valuation of the subject company, multiples and asset values are easier and more practical to apply and thus more appropriate for valuing the subject company. However later in the deal making process the present values approach can be used and weighted higher since an in-depth and due diligence style analysis and valuation would be needed.

6th Secondary Factor: With regard to this factor, the analyst can select the ratings **"Credible Accounting Standards"** (**Present Values 20 points, Asset Values 10 points, Multiples 10 points, Options Pricing 0 points**) as Inditex is a publicly traded company with international operations and applies the international financial reporting standards. As noted in previous chapter, the quality of accounting plays a key role in the targeted credibility of the valuation outcome. Highly credible

accounting standards facilitate the application of the income based valuation approach which entails the use of a great number of accounting based projections.

The three tables of factors' ratings for Inditex as explained above are presented in the following pages.

It is important to note that the influential (Fundamental, Primary and Secondary) factors selected and rated are based on the research, literature review and practitioners' views presented in this thesis. Each financial analyst may come up with additional or alternative influential factors as well as with an alternative rating structure in order to build his/her own weighting methodology version.

Finally it is noted that the weighting methodology, as it is developed and applied, it mostly favors the weighting of the Present Values and Multiples approaches. This is in line with the real world's valuation practices and also reflects the higher emphasis given from the broader academic community on these two valuation approaches. On the other hand, the proposed weighting methodology does take into consideration the other two major valuation approaches, the Asset Values and the Options Pricing.

Note: Valuation approaches' weighting is extracted by dividing the rating points assigned to the particular valuation approach with the total rating points aggregated by all four valuation approaches. For example in Inditex, present values weighting is calculated as follows: 900 / (2,320) = 39%.

Table 16: Inditex's Rating based on Fundamental Factors

INDITEX

FUNDAMENTAL INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
For Valuing Purposes (Value in Use) For Pricing Purposes (Value in Exchange) Not Applied / Not Relevant	20	50	100	0
Information Sufficient for Detailed Valuation Information Non Sufficient for Detailed Valuation Not Applied / Not Relevant	100	50	20	0
Established Company (Market Share, Brand Name) Not Established Company Not Applied / Not Relevant	100	50	100	0
Company Generating Well Above Average ROIC Company Generating Near Average or Lower ROIC Not Applied / Not Relevant	100	50	20	0
Valuing a Majority Stake / Controlling Interest Valuation Valuing a Minority Stake / Non Controlling Interest Valuation Not Applied / Not Relevant	50	20	100	0
Very Specialized Nature of Business Activity Generic Nature of Business Activity Not Applied / Not Relevant	20	50	100	0
Active Secondary Market for Company's Fixed Assets Non Active Secondary Market for Company's Fixed Assets Not Applied / Not Relevant	0	0	0	0
Unexploited Assets, Licenses, etc. Owned by the Company No Unexploited Assets, Licenses, etc. Owned Not Applied / Not Relevant	0	0	0	0
Property Company Commercial / Industrial Company Not Applied / Not Relevant	100	20	100	0
Uncertain or Volatile Economic Environment Broadly Stable or Growing Economic Environment Not Applied / Not Relevant	100	50	100	0

Table 17: Inditex's Rating based on Primary Factors

PRIMARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Later Stage Company (>3-5 years)	20	0	40	0
Startup Company				
Not Applied / Not Relevant				
Large Size Companies (Revenues > EUR 50 million)	40	8	20	0
Smaller Size Companies (Revenues < EUR 50 million)				
Not Applied / Not Relevant				
Management Depth	40	8	20	8
Lack of Management Depth				
Not Applied / Not Relevant				
Services or People Driven Companies / High Goodwill				
Non People Driven Companies / Low Goodwill	20	40	20	0
Not Applied / Not Relevant				
Listed Company	40	8	20	0
Non Listed Company				
Not Applied / Not Relevant				
High Free Float (>50%) (Higher Transparency)				
Low Free Float (<50%) (Lower Transparency)	20	8	8	0
Not Applied / Not Relevant				
Strong Marketability in the Stock Market	20	8	40	0
Low or Lack of Marketability in the Stock Market				
Not Applied / Not Relevant				
High Synergy Generation				
Low Synergy Generation				
Not Applied / Not Relevant	0	0	0	0
Business Deals Data / Transaction Multiples Available				
Business Deals Data / Transaction Multiples Not Available				
Not Applied / Not Relevant	0	0	0	0
Financing Structure of Deal with High Debt Burden				
Financing Structure of Deal with Low to Zero Debt Burden				
Not Applied / Not Relevant	0	0	0	0
Companies with Hard Assets	20	40	20	0
Opposite Factor				
Not Applied / Not Relevant				
Significant Assets Not Fully Operational Yet				
Opposite Factor				
Not Applied / Not Relevant	0	0	0	0

Table 18: Inditex's Rating based on Secondary Factors

SECONDARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Developed Economy Emerging Economy Not Applied / Not Relevant	20	10	10	10
Strong Cash Position Weak Cash Position Not Applied / Not Relevant	20	20	10	0
High CEO and Corporate Insiders Ownership Low CEO and Corporate Insiders Ownership Not Applied / Not Relevant	10	4	10	0
Medium to Strong ESG / Sustainability Low to Medium ESG / Sustainability Not Applied / Not Relevant	20	20	10	0
Early Stage in Deal Making Process Later Stage in Deal Making Process Not Applied / Not Relevant	0	0	0	0
Credible Accounting Standards (US GAAP, IFRS) Other Accounting Standards (Local Standards) Not Applied / Not Relevant	20	10	10	0

INDITEX					
TOTAL RATING POINTS	900	524	878	18	2,320
WEIGHTING OF VALUATION APPROACHES	39%	23%	38%	1%	

Based on the above three tables, the extracted weights for each valuation approach in the case of Inditex are the following: Present Values 39%, Asset Values 23%, Multiples 38% and Options Pricing 1% (after rounding, they add up to 100%). Therefore, based on the application of the proposed weighting methodology, it is indicated that present values and multiples are the most appropriate valuation techniques for Inditex. In similar company cases it can be assumed that the two approaches are of almost equal importance for well established, financially healthy and strong, listed companies which are not so dependent on "hard" assets.

Following the above procedure, the financial analyst has now available the justified weights of the four major valuation approaches in order to extract the weighted fair value of Inditex.

4.2.2. LAMDA HELLIX

Lamda Hellix is a privately held, non-listed, company active in the data centers and collocation services market in Greece. It is active in the local market and is characterized by healthy financial structure and good information flow for a company that is not listed and thus not obliged to report significant financial information.

Table 19: Lamda Hellix's Rating based on Fundamental Factors

LAMDA HELLIX

FUNDAMENTAL INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
For Valuing Purposes (Value in Use) For Pricing Purposes (Value in Exchange) Not Applied / Not Relevant	100	50	20	0
Information Sufficient for Detailed Valuation Information Non Sufficient for Detailed Valuation Not Applied / Not Relevant	100	50	20	0
Established Company (Market Share, Brand Name) Not Established Company Not Applied / Not Relevant	50	20	50	0
Company Generating Well Above Average ROIC Company Generating Near Average or Lower ROIC Not Applied / Not Relevant	100	50	20	0
Valuing a Majority Stake / Controlling Interest Valuation Valuing a Minority Stake / Non Controlling Interest Valuation Not Applied / Not Relevant	100	20	50	0
Very Specialized Nature of Business Activity Generic Nature of Business Activity Not Applied / Not Relevant	100	50	20	0
Active Secondary Market for Company's Fixed Assets Non Active Secondary Market for Company's Fixed Assets Not Applied / Not Relevant	100	20	100	0
Unexploited Assets, Licenses, etc. Owned by the Company No Unexploited Assets, Licenses, etc. Owned Not Applied / Not Relevant	0	0	0	0
Property Company Commercial / Industrial Company Not Applied / Not Relevant	20	100	20	0
Uncertain or Volatile Economic Environment Broadly Stable or Growing Economic Environment Not Applied / Not Relevant	50	100	100	0

Table 20: Lamda Hellix's Rating based on Primary Factors

PRIMARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Later Stage Company (>3-5 years)	20	0	40	0
Startup Company				
Not Applied / Not Relevant				
Large Size Companies (Revenues > EUR 50 million)				
Smaller Size Companies (Revenues < EUR 50 million)	8	8	8	0
Not Applied / Not Relevant				
Management Depth	40	8	20	8
Lack of Management Depth				
Not Applied / Not Relevant				
Services or People Driven Companies / High Goodwill	40	20	40	0
Non People Driven Companies / Low Goodwill				
Not Applied / Not Relevant				
Listed Company				
Non Listed Company	20	8	8	0
Not Applied / Not Relevant				
High Free Float (>50%) (Higher Transparency)				
Low Free Float (<50%) (Lower Transparency)				
Not Applied / Not Relevant	0	0	0	0
Strong Marketability in the Stock Market				
Low or Lack of Marketability in the Stock Market				
Not Applied / Not Relevant	0	0	0	0
High Synergy Generation				
Low Synergy Generation				
Not Applied / Not Relevant	0	0	0	0
Business Deals Data / Transaction Multiples Available	20	8	40	0
Business Deals Data / Transaction Multiples Not Available				
Not Applied / Not Relevant				
Financing Structure of Deal with High Debt Burden				
Financing Structure of Deal with Low to Zero Debt Burden				
Not Applied / Not Relevant	0	0	0	0
Companies with Hard Assets	20	40	20	0
Opposite Factor				
Not Applied / Not Relevant				
Significant Assets Not Fully Operational Yet				
Opposite Factor				
Not Applied / Not Relevant	0	0	0	0

Table 21: Lamda Hellix's Rating based on Secondary Factors

SECONDARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Developed Economy Emerging Economy Not Applied / Not Relevant	10	4	4	4
Strong Cash Position Weak Cash Position Not Applied / Not Relevant	20	20	10	0
High CEO and Corporate Insiders Ownership Low CEO and Corporate Insiders Ownership Not Applied / Not Relevant	10	4	10	0
Medium to Strong ESG / Sustainability Low to Medium ESG / Sustainability Not Applied / Not Relevant	10	20	20	0
Early Stage in Deal Making Process Later Stage in Deal Making Process Not Applied / Not Relevant	0	0	0	0
Credible Accounting Standards (US GAAP, IFRS) Other Accounting Standards (Local Standards) Not Applied / Not Relevant	20	10	10	0

LAMDA HELLIX					
TOTAL RATING POINTS	**958**	**610**	**630**	**12**	**2,210**
WEIGHTING OF VALUATION APPROACHES	**43%**	**28%**	**29%**	**1%**	

Thus, it can be concluded that for a non listed, property owner, company with good information flow and financial reporting, multiples are less important due to lack of marketability. Therefore the importance of asset approach increases. Present values remain the major approach.

4.2.3. PINNATTA

Pinnatta is a startup company based in Greece and the US, dealing with interactive messenger systems for mobile handsets. The company received funding of over USD 2 million from private investors in the first 2 years of operations. Its business idea is to cover the needs of the mobile market globally.

Table 22: Pinnatta's Rating based on Fundamental Factors

PINNATTA				
FUNDAMENTAL INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
For Valuing Purposes (Value in Use) For Pricing Purposes (Value in Exchange) Not Applied / Not Relevant	100	50	20	0
Information Sufficient for Detailed Valuation Information Non Sufficient for Detailed Valuation Not Applied / Not Relevant	20	50	100	0
Established Company (Market Share, Brand Name) Not Established Company Not Applied / Not Relevant	50	20	50	0
Company Generating Well Above Average ROIC Company Generating Near Average or Lower ROIC Not Applied / Not Relevant	20	50	100	0
Valuing a Majority Stake / Controlling Interest Valuation Valuing a Minority Stake / Non Controlling Interest Valuation Not Applied / Not Relevant	100	20	50	0
Very Specialized Nature of Business Activity Generic Nature of Business Activity Not Applied / Not Relevant	100	50	20	0
Active Secondary Market for Company's Fixed Assets Non Active Secondary Market for Company's Fixed Assets Not Applied / Not Relevant	0	0	0	0
Unexploited Assets, Licenses, etc. Owned by the Company No Unexploited Assets, Licenses, etc. Owned Not Applied / Not Relevant	0	0	0	0
Property Company Commercial / Industrial Company Not Applied / Not Relevant	0	0	0	0
Uncertain or Volatile Economic Environment Broadly Stable or Growing Economic Environment Not Applied / Not Relevant	50	100	100	0

Table 23: Pinnatta's Rating based on Primary Factors

PRIMARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Later Stage Company (>3-5 years)				
Startup Company	8	0	20	0
Not Applied / Not Relevant				
Large Size Companies (Revenues > EUR 50 million)				
Smaller Size Companies (Revenues < EUR 50 million)	8	8	8	0
Not Applied / Not Relevant				
Management Depth	40	8	20	8
Lack of Management Depth				
Not Applied / Not Relevant				
Services or People Driven Companies / High Goodwill	40	20	40	0
Non People Driven Companies / Low Goodwill				
Not Applied / Not Relevant				
Listed Company				
Non Listed Company	20	8	8	0
Not Applied / Not Relevant				
High Free Float (>50%) (Higher Transparency)				
Low Free Float (<50%) (Lower Transparency)				
Not Applied / Not Relevant	0	0	0	0
Strong Marketability in the Stock Market				
Low or Lack of Marketability in the Stock Market				
Not Applied / Not Relevant	0	0	0	0
High Synergy Generation	40	20	20	0
Low Synergy Generation				
Not Applied / Not Relevant				
Business Deals Data / Transaction Multiples Available				
Business Deals Data / Transaction Multiples Not Available	40	8	20	0
Not Applied / Not Relevant				
Financing Structure of Deal with High Debt Burden				
Financing Structure of Deal with Low to Zero Debt Burden				
Not Applied / Not Relevant	0	0	0	0
Companies with Hard Assets				
Opposite Factor				
Not Applied / Not Relevant	0	0	0	0
Significant Assets Not Fully Operational Yet				
Opposite Factor				
Not Applied / Not Relevant	0	0	0	0

Table 24: Pinnatta's Rating based on Secondary Factors

SECONDARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Developed Economy Emerging Economy Not Applied / Not Relevant	10	4	4	4
Strong Cash Position Weak Cash Position Not Applied / Not Relevant	10	10	4	0
High CEO and Corporate Insiders Ownership Low CEO and Corporate Insiders Ownership Not Applied / Not Relevant	4	10	4	0
Medium to Strong ESG / Sustainability Low to Medium ESG / Sustainability Not Applied / Not Relevant	10	20	20	0
Early Stage in Deal Making Process Later Stage in Deal Making Process Not Applied / Not Relevant	10	20	20	0
Credible Accounting Standards (US GAAP, IFRS) Other Accounting Standards (Local Standards) Not Applied / Not Relevant	10	10	20	0

PINNATTA					
TOTAL RATING POINTS	**690**	**486**	**648**	**12**	**1,836**
WEIGHTING OF VALUATION APPROACHES	**38%**	**26%**	**35%**	**1%**	

Therefore, based on the proposed methodology it can be concluded that for startups where present value approach cannot be always reliable, transaction multiples are very important in valuation and are designated with a higher weight than in the case of other company types, for example property companies (Lamda Hellix and Lamda Development). Present value approach is weighted less than in the case of listed and non listed companies which possess economic history and significant information flow.

4.2.4. LAMDA DEVELOPMENT

Lamda Development is a property development firm based in Greece with presence in the South East European property market. It is publicly traded.

Table 25: Lamda Development's Rating based on Fundamental Factors

LAMDA DEVELOPMENT

FUNDAMENTAL INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
For Valuing Purposes (Value in Use) For Pricing Purposes (Value in Exchange) Not Applied / Not Relevant	100	50	20	0
Information Sufficient for Detailed Valuation Information Non Sufficient for Detailed Valuation Not Applied / Not Relevant	100	50	20	0
Established Company (Market Share, Brand Name) Not Established Company Not Applied / Not Relevant	100	50	100	0
Company Generating Well Above Average ROIC Company Generating Near Average or Lower ROIC Not Applied / Not Relevant	20	50	100	0
Valuing a Majority Stake / Controlling Interest Valuation Valuing a Minority Stake / Non Controlling Interest Valuation Not Applied / Not Relevant	100	20	50	0
Very Specialized Nature of Business Activity Generic Nature of Business Activity Not Applied / Not Relevant	20	50	100	0
Active Secondary Market for Company's Fixed Assets Non Active Secondary Market for Company's Fixed Assets Not Applied / Not Relevant	0	0	0	0
Unexploited Assets, Licenses, etc. Owned by the Company No Unexploited Assets, Licenses, etc. Owned Not Applied / Not Relevant	0	0	0	0
Property Company Commercial / Industrial Company Not Applied / Not Relevant	20	100	20	0
Uncertain or Volatile Economic Environment Broadly Stable or Growing Economic Environment Not Applied / Not Relevant	50	100	100	0

Table 26: Lamda Development's Rating based on Primary Factors

PRIMARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Later Stage Company (>3-5 years)	20	0	40	0
Startup Company				
Not Applied / Not Relevant				
Large Size Companies (Revenues > EUR 50 million)	40	8	20	0
Smaller Size Companies (Revenues < EUR 50 million)				
Not Applied / Not Relevant				
Management Depth				
Lack of Management Depth	20	8	20	0
Not Applied / Not Relevant				
Services or People Driven Companies / High Goodwill				
Non People Driven Companies / Low Goodwill	20	40	20	0
Not Applied / Not Relevant				
Listed Company	40	8	20	0
Non Listed Company				
Not Applied / Not Relevant				
High Free Float (>50%) (Higher Transparency)				
Low Free Float (<50%) (Lower Transparency)	20	8	8	0
Not Applied / Not Relevant				
Strong Marketability in the Stock Market				
Low or Lack of Marketability in the Stock Market	40	8	20	0
Not Applied / Not Relevant				
High Synergy Generation				
Low Synergy Generation				
Not Applied / Not Relevant	0	0	0	0
Business Deals Data / Transaction Multiples Available	20	8	40	0
Business Deals Data / Transaction Multiples Not Available				
Not Applied / Not Relevant				
Financing Structure of Deal with High Debt Burden				
Financing Structure of Deal with Low to Zero Debt Burden				
Not Applied / Not Relevant	0	0	0	0
Companies with Hard Assets	20	40	20	0
Opposite Factor				
Not Applied / Not Relevant				
Significant Assets Not Fully Operational Yet				
Opposite Factor				
Not Applied / Not Relevant	0	0	0	0

Table 27: Lamda Development's Rating based on Secondary Factors

SECONDARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Developed Economy Emerging Economy Not Applied / Not Relevant	10	4	4	4
Strong Cash Position Weak Cash Position Not Applied / Not Relevant	10	10	4	0
High CEO and Corporate Insiders Ownership Low CEO and Corporate Insiders Ownership Not Applied / Not Relevant	10	4	10	0
Medium to Strong ESG / Sustainability Low to Medium ESG / Sustainability Not Applied / Not Relevant	10	20	20	0
Early Stage in Deal Making Process Later Stage in Deal Making Process Not Applied / Not Relevant	0	0	0	0
Credible Accounting Standards (US GAAP, IFRS) Other Accounting Standards (Local Standards) Not Applied / Not Relevant	20	10	10	0

LAMDA DEVELOPMENT					
TOTAL RATING POINTS	810	646	766	4	2,226
WEIGHTING OF VALUATION APPROACHES	36%	29%	34%	0%	

Based on the application of the proposed methodology it can be concluded that in a real estate (property) company, which is listed and activates both domestically and internationally, the weighting of the asset value approach is the highest in comparison to other company types such as industrials or commercials (for example Inditex). However, present values and multiples remain of great importance in terms of weighting.

4.2.5. KARELIA TOBACCO

Karelia Tobacco is an industrial corporation based in Greece. Karelia is well established in the domestic market and possesses strong export orientation. It is publicly traded and has a thin free float.

Table 28: Karelia Tobacco's Rating based on Fundamental Factors

KARELIA TOBACCO

FUNDAMENTAL INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
For Valuing Purposes (Value in Use) For Pricing Purposes (Value in Exchange) Not Applied / Not Relevant	100	50	20	0
Information Sufficient for Detailed Valuation Information Non Sufficient for Detailed Valuation Not Applied / Not Relevant	100	50	20	0
Established Company (Market Share, Brand Name) Not Established Company Not Applied / Not Relevant	100	50	100	0
Company Generating Well Above Average ROIC Company Generating Near Average or Lower ROIC Not Applied / Not Relevant	20	50	100	0
Valuing a Majority Stake / Controlling Interest Valuation Valuing a Minority Stake / Non Controlling Interest Valuation Not Applied / Not Relevant	100	20	50	0
Very Specialized Nature of Business Activity Generic Nature of Business Activity Not Applied / Not Relevant	20	50	100	0
Active Secondary Market for Company's Fixed Assets Non Active Secondary Market for Company's Fixed Assets Not Applied / Not Relevant	0	0	0	0
Unexploited Assets, Licenses, etc. Owned by the Company No Unexploited Assets, Licenses, etc. Owned Not Applied / Not Relevant	0	0	0	0
Property Company Commercial / Industrial Company Not Applied / Not Relevant	100 0	20 0	100 0	0 0
Uncertain or Volatile Economic Environment Broadly Stable or Growing Economic Environment Not Applied / Not Relevant	50	100	100	0

Table 29: Karelia Tobacco's Rating based on Primary Factors

PRIMARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Later Stage Company (>3-5 years)	20	0	40	0
Startup Company				
Not Applied / Not Relevant				
Large Size Companies (Revenues > EUR 50 million)	40	8	20	0
Smaller Size Companies (Revenues < EUR 50 million)				
Not Applied / Not Relevant				
Management Depth	40	8	20	8
Lack of Management Depth				
Not Applied / Not Relevant				
Services or People Driven Companies / High Goodwill				
Non People Driven Companies / Low Goodwill	20	40	20	0
Not Applied / Not Relevant				
Listed Company	40	8	20	0
Non Listed Company				
Not Applied / Not Relevant				
High Free Float (>50%) (Higher Transparency)				
Low Free Float (<50%) (Lower Transparency)	20	8	8	0
Not Applied / Not Relevant				
Strong Marketability in the Stock Market				
Low or Lack of Marketability in the Stock Market	40	8	20	0
Not Applied / Not Relevant				
High Synergy Generation				
Low Synergy Generation				
Not Applied / Not Relevant	0	0	0	0
Business Deals Data / Transaction Multiples Available				
Business Deals Data / Transaction Multiples Not Available				
Not Applied / Not Relevant	0	0	0	0
Financing Structure of Deal with High Debt Burden				
Financing Structure of Deal with Low to Zero Debt Burden				
Not Applied / Not Relevant	0	0	0	0
Companies with Hard Assets	20	40	20	0
Opposite Factor				
Not Applied / Not Relevant	0	0	0	0
Significant Assets Not Fully Operational Yet				
Opposite Factor				
Not Applied / Not Relevant	0	0	0	0

Table 30: Karelia Tobacco's Rating based on Secondary Factors

SECONDARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Developed Economy Emerging Economy Not Applied / Not Relevant	10	4	4	4
Strong Cash Position Weak Cash Position Not Applied / Not Relevant	20	20	10	0
High CEO and Corporate Insiders Ownership Low CEO and Corporate Insiders Ownership Not Applied / Not Relevant	10	4	10	0
Medium to Strong ESG / Sustainability Low to Medium ESG / Sustainability Not Applied / Not Relevant	20	20	10	0
Early Stage in Deal Making Process Later Stage in Deal Making Process Not Applied / Not Relevant	0	0	0	0
Credible Accounting Standards (US GAAP, IFRS) Other Accounting Standards (Local Standards) Not Applied / Not Relevant	20	10	10	0

KARELIA TOBACCO					
TOTAL RATING POINTS	**910**	**568**	**802**	**12**	**2,292**
WEIGHTING OF VALUATION APPROACHES	**40%**	**25%**	**35%**	**1%**	

Therefore, it can be concluded that in Karelia case, multiples weigh lower against Inditex due to lack of marketability for Karelia's stock and also due to low free float. Asset values weigh significantly, as in the case of Inditex, due to the existence of hard assets such as machinery and factories. Since Karelia is not a pure property company, asset values have a lower weight than in the case of Lamda Development which is a pure property company. Finally, present values are designated with almost the same weight as in Inditex.

4.2.6. PLAISIO

Plaisio is a leading IT and consumer electronics retail chain in Greece. Plaisio possesses a healthy balance sheet and is publicly traded.

Table 31: Plaisio's Rating based on Fundamental Factors

PLAISIO				
FUNDAMENTAL INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
For Valuing Purposes (Value in Use) For Pricing Purposes (Value in Exchange) Not Applied / Not Relevant	100	50	20	0
Information Sufficient for Detailed Valuation Information Non Sufficient for Detailed Valuation Not Applied / Not Relevant	100	50	20	0
Established Company (Market Share, Brand Name) Not Established Company Not Applied / Not Relevant	100	50	100	0
Company Generating Well Above Average ROIC Company Generating Near Average or Lower ROIC Not Applied / Not Relevant	20	50	100	0
Valuing a Majority Stake / Controlling Interest Valuation Valuing a Minority Stake / Non Controlling Interest Valuation Not Applied / Not Relevant	100	20	50	0
Very Specialized Nature of Business Activity Generic Nature of Business Activity Not Applied / Not Relevant	20	50	100	0
Active Secondary Market for Company's Fixed Assets Non Active Secondary Market for Company's Fixed Assets Not Applied / Not Relevant	0	0	0	0
Unexploited Assets, Licenses, etc. Owned by the Company No Unexploited Assets, Licenses, etc. Owned Not Applied / Not Relevant	0	0	0	0
Property Company Commercial / Industrial Company Not Applied / Not Relevant	100	20	100	0
Uncertain or Volatile Economic Environment Broadly Stable or Growing Economic Environment Not Applied / Not Relevant	50	100	100	0

Table 32: Plaisio's Rating based on Primary Factors

PRIMARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Later Stage Company (>3-5 years)	20	0	40	0
Startup Company				
Not Applied / Not Relevant				
Large Size Companies (Revenues > EUR 50 million)	40	8	20	0
Smaller Size Companies (Revenues < EUR 50 million)				
Not Applied / Not Relevant				
Management Depth	40	8	20	8
Lack of Management Depth				
Not Applied / Not Relevant				
Services or People Driven Companies / High Goodwill	40	20	40	0
Non People Driven Companies / Low Goodwill				
Not Applied / Not Relevant				
Listed Company	40	8	20	0
Non Listed Company				
Not Applied / Not Relevant				
High Free Float (>50%) (Higher Transparency)				
Low Free Float (<50%) (Lower Transparency)	20	8	8	0
Not Applied / Not Relevant				
Strong Marketability in the Stock Market				
Low or Lack of Marketability in the Stock Market	40	8	20	0
Not Applied / Not Relevant				
High Synergy Generation				
Low Synergy Generation				
Not Applied / Not Relevant	0	0	0	0
Business Deals Data / Transaction Multiples Available				
Business Deals Data / Transaction Multiples Not Available				
Not Applied / Not Relevant	0	0	0	0
Financing Structure of Deal with High Debt Burden				
Financing Structure of Deal with Low to Zero Debt Burden				
Not Applied / Not Relevant	0	0	0	0
Companies with Hard Assets				
Opposite Factor				
Not Applied / Not Relevant	0	0	0	0
Significant Assets Not Fully Operational Yet				
Opposite Factor				
Not Applied / Not Relevant	0	0	0	0

Table 33: Plaisio's Rating based on Secondary Factors

SECONDARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Developed Economy Emerging Economy Not Applied / Not Relevant	10	4	4	4
Strong Cash Position Weak Cash Position Not Applied / Not Relevant	20	20	10	0
High CEO and Corporate Insiders Ownership Low CEO and Corporate Insiders Ownership Not Applied / Not Relevant	10	4	10	0
Medium to Strong ESG / Sustainability Low to Medium ESG / Sustainability Not Applied / Not Relevant	20	20	10	0
Early Stage in Deal Making Process Later Stage in Deal Making Process Not Applied / Not Relevant	0	0	0	0
Credible Accounting Standards (US GAAP, IFRS) Other Accounting Standards (Local Standards) Not Applied / Not Relevant	20	10	10	0

PLAISIO					
TOTAL RATING POINTS	**910**	**508**	**802**	**12**	**2,232**
WEIGHTING OF VALUATION APPROACHES	**41%**	**23%**	**36%**	**1%**	

The application of the proposed methodology indicated that the weighting outcome for Plaisio is very identical to the one of Karelia, except from the fact that Plaisio does not possess "hard" assets. Therefore, asset values acquire a lower weight whereas present values and multiples acquire a slightly higher weight compared to Karelia.

4.2.7. HELLENIC CABLES

Hellenic Cables is active in the international cable industry and is member of Greece's largest industrial group Viohalco. It possesses strong export orientation and is publicly traded.

Table 34: Hellenic Cables' Rating based on Fundamental Factors

HELLENIC CABLES

FUNDAMENTAL INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
For Valuing Purposes (Value in Use) For Pricing Purposes (Value in Exchange) Not Applied / Not Relevant	100	50	20	0
Information Sufficient for Detailed Valuation Information Non Sufficient for Detailed Valuation Not Applied / Not Relevant	100	50	20	0
Established Company (Market Share, Brand Name) Not Established Company Not Applied / Not Relevant	100	50	100	0
Company Generating Well Above Average ROIC Company Generating Near Average or Lower ROIC Not Applied / Not Relevant	20	50	100	0
Valuing a Majority Stake / Controlling Interest Valuation Valuing a Minority Stake / Non Controlling Interest Valuation Not Applied / Not Relevant	100	20	50	0
Very Specialized Nature of Business Activity Generic Nature of Business Activity Not Applied / Not Relevant	20	50	100	0
Active Secondary Market for Company's Fixed Assets Non Active Secondary Market for Company's Fixed Assets Not Applied / Not Relevant	50	100	50	0
Unexploited Assets, Licenses, etc. Owned by the Company No Unexploited Assets, Licenses, etc. Owned Not Applied / Not Relevant	0	0	0	0
Property Company Commercial / Industrial Company Not Applied / Not Relevant	100	20	100	0
Uncertain or Volatile Economic Environment Broadly Stable or Growing Economic Environment Not Applied / Not Relevant	50	100	100	0

Table 35: Hellenic Cables' Rating based on Primary Factors

PRIMARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Later Stage Company (>3-5 years)	20	0	40	0
Startup Company				
Not Applied / Not Relevant				
Large Size Companies (Revenues > EUR 50 million)	40	8	20	0
Smaller Size Companies (Revenues < EUR 50 million)				
Not Applied / Not Relevant				
Management Depth	40	8	20	8
Lack of Management Depth				
Not Applied / Not Relevant				
Services or People Driven Companies / High Goodwill				
Non People Driven Companies / Low Goodwill	20	40	20	0
Not Applied / Not Relevant				
Listed Company	40	8	20	0
Non Listed Company				
Not Applied / Not Relevant				
High Free Float (>50%) (Higher Transparency)				
Low Free Float (<50%) (Lower Transparency)	20	8	8	0
Not Applied / Not Relevant				
Strong Marketability in the Stock Market				
Low or Lack of Marketability in the Stock Market	40	8	20	0
Not Applied / Not Relevant				
High Synergy Generation				
Low Synergy Generation				
Not Applied / Not Relevant	0	0	0	0
Business Deals Data / Transaction Multiples Available				
Business Deals Data / Transaction Multiples Not Available				
Not Applied / Not Relevant	0	0	0	0
Financing Structure of Deal with High Debt Burden	40	20	20	0
Financing Structure of Deal with Low to Zero Debt Burden				
Not Applied / Not Relevant				
Companies with Hard Assets	20	40	20	0
Opposite Factor				
Not Applied / Not Relevant				
Significant Assets Not Fully Operational Yet				
Opposite Factor				
Not Applied / Not Relevant	0	0	0	0

Table 36: Hellenic Cables' Rating based on Secondary Factors

SECONDARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Developed Economy Emerging Economy Not Applied / Not Relevant	10	4	4	4
Strong Cash Position Weak Cash Position Not Applied / Not Relevant	10	10	4	0
High CEO and Corporate Insiders Ownership Low CEO and Corporate Insiders Ownership Not Applied / Not Relevant	4	10	4	0
Medium to Strong ESG / Sustainability Low to Medium ESG / Sustainability Not Applied / Not Relevant	20	20	10	0
Early Stage in Deal Making Process Later Stage in Deal Making Process Not Applied / Not Relevant	0	0	0	0
Credible Accounting Standards (US GAAP, IFRS) Other Accounting Standards (Local Standards) Not Applied / Not Relevant	20	10	10	0

HELLENIC CABLES					
TOTAL RATING POINTS	984	684	860	12	2,540
WEIGHTING OF VALUATION APPROACHES	39%	27%	34%	0%	

Hellenic Cables is a heavy industrial company, with "hard" assets and high debt burden. Therefore, based on the proposed methodology, asset values have an increased weight as compared to Karelia and Plaisio. Furthermore due to the company's high debt burden, multiples have a decreasing weight as compared to Karelia and Plaisio. Only Lamda Development and Lamda Hellix, which belong to the property company type, have asset values' weight higher than Hellenic Cables.

4.2.8. SPRIDER STORES

Sprider Stores is an apparel and footwear retail chain with operations mainly in Greece. It is a financially distressed company and listed on Athens Exchange.

Table 37: Sprider Stores' Rating based on Fundamental Factors

SPRIDER STORES				
FUNDAMENTAL INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
For Valuing Purposes (Value in Use) For Pricing Purposes (Value in Exchange) Not Applied / Not Relevant	100	50	20	0
Information Sufficient for Detailed Valuation Information Non Sufficient for Detailed Valuation Not Applied / Not Relevant	20	50	100	0
Established Company (Market Share, Brand Name) Not Established Company Not Applied / Not Relevant	50	20	50	0
Company Generating Well Above Average ROIC Company Generating Near Average or Lower ROIC Not Applied / Not Relevant	20	50	100	0
Valuing a Majority Stake / Controlling Interest Valuation Valuing a Minority Stake / Non Controlling Interest Valuation Not Applied / Not Relevant	100	20	50	0
Very Specialized Nature of Business Activity Generic Nature of Business Activity Not Applied / Not Relevant	20	50	100	0
Active Secondary Market for Company's Fixed Assets Non Active Secondary Market for Company's Fixed Assets Not Applied / Not Relevant	0	0	0	0
Unexploited Assets, Licenses, etc. Owned by the Company No Unexploited Assets, Licenses, etc. Owned Not Applied / Not Relevant	0	0	0	0
Property Company Commercial / Industrial Company Not Applied / Not Relevant	100	20	100	0
Uncertain or Volatile Economic Environment Broadly Stable or Growing Economic Environment Not Applied / Not Relevant	50	100	100	0

Table 38: Sprider Stores' Rating based on Primary Factors

PRIMARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Later Stage Company (>3-5 years)	20	0	40	0
Startup Company				
Not Applied / Not Relevant				
Large Size Companies (Revenues > EUR 50 million)	40	8	20	0
Smaller Size Companies (Revenues < EUR 50 million)				
Not Applied / Not Relevant				
Management Depth				
Lack of Management Depth	20	8	20	0
Not Applied / Not Relevant				
Services or People Driven Companies / High Goodwill				
Non People Driven Companies / Low Goodwill	20	40	20	0
Not Applied / Not Relevant				
Listed Company	40	8	20	0
Non Listed Company				
Not Applied / Not Relevant				
High Free Float (>50%) (Higher Transparency)				
Low Free Float (<50%) (Lower Transparency)	20	8	8	0
Not Applied / Not Relevant				
Strong Marketability in the Stock Market				
Low or Lack of Marketability in the Stock Market	40	8	20	0
Not Applied / Not Relevant				
High Synergy Generation				
Low Synergy Generation	20	20	40	0
Not Applied / Not Relevant				
Business Deals Data / Transaction Multiples Available				
Business Deals Data / Transaction Multiples Not Available				
Not Applied / Not Relevant	0	0	0	0
Financing Structure of Deal with High Debt Burden	40	20	20	0
Financing Structure of Deal with Low to Zero Debt Burden				
Not Applied / Not Relevant				
Companies with Hard Assets				
Opposite Factor	40	20	40	0
Not Applied / Not Relevant				
Significant Assets Not Fully Operational Yet				
Opposite Factor				
Not Applied / Not Relevant	0	0	0	0

Table 39: Sprider Stores' Rating based on Secondary Factors

SECONDARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Developed Economy Emerging Economy Not Applied / Not Relevant	10	4	4	4
Strong Cash Position Weak Cash Position Not Applied / Not Relevant	10	10	4	0
High CEO and Corporate Insiders Ownership Low CEO and Corporate Insiders Ownership Not Applied / Not Relevant	10	4	10	0
Medium to Strong ESG / Sustainability Low to Medium ESG / Sustainability Not Applied / Not Relevant	0	0	0	0
Early Stage in Deal Making Process Later Stage in Deal Making Process Not Applied / Not Relevant	0	0	0	0
Credible Accounting Standards (US GAAP, IFRS) Other Accounting Standards (Local Standards) Not Applied / Not Relevant	20	10	10	0

SPRIDER STORES					
TOTAL RATING POINTS	**810**	**528**	**896**	**4**	**2,238**
WEIGHTING OF VALUATION APPROACHES	**36%**	**24%**	**40%**	**0%**	

In a financially distressed company, the transparency and quality of information is gradually diminishing. Based on the methodology applied it is noted that Present values approach which requires substantial and transparent financial reporting, is becoming less important in valuation than multiples as compared to previous company cases. Assets in a financially distressed company are constantly loosing value and becoming complex in valuation therefore asset valuation approach is "losing ground" as well, in terms of weight.

4.2.9. JUMBO

Jumbo is one of the largest retail chains in Greece and listed on Athens Exchange. It is a well established, financially healthy, and cash rich company.

Table 40: Jumbo's Rating based on Fundamental Factors

JUMBO				
FUNDAMENTAL INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
For Valuing Purposes (Value in Use) For Pricing Purposes (Value in Exchange) Not Applied / Not Relevant	100	50	20	0
Information Sufficient for Detailed Valuation Information Non Sufficient for Detailed Valuation Not Applied / Not Relevant	100	50	20	0
Established Company (Market Share, Brand Name) Not Established Company Not Applied / Not Relevant	100	50	100	0
Company Generating Well Above Average ROIC Company Generating Near Average or Lower ROIC Not Applied / Not Relevant	100	50	20	0
Valuing a Majority Stake / Controlling Interest Valuation Valuing a Minority Stake / Non Controlling Interest Valuation Not Applied / Not Relevant	100	20	50	0
Very Specialized Nature of Business Activity Generic Nature of Business Activity Not Applied / Not Relevant	20	50	100	0
Active Secondary Market for Company's Fixed Assets Non Active Secondary Market for Company's Fixed Assets Not Applied / Not Relevant	100	20	100	0
Unexploited Assets, Licenses, etc. Owned by the Company No Unexploited Assets, Licenses, etc. Owned Not Applied / Not Relevant	0	0	0	0
Property Company Commercial / Industrial Company Not Applied / Not Relevant	100	20	100	0
Uncertain or Volatile Economic Environment Broadly Stable or Growing Economic Environment Not Applied / Not Relevant	50	100	100	0

Table 41: Jumbo's Rating based on Primary Factors

PRIMARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Later Stage Company (>3-5 years)	20	0	40	0
Startup Company				
Not Applied / Not Relevant				
Large Size Companies (Revenues > EUR 50 million)	40	8	20	0
Smaller Size Companies (Revenues < EUR 50 million)				
Not Applied / Not Relevant				
Management Depth	40	8	20	8
Lack of Management Depth				
Not Applied / Not Relevant				
Services or People Driven Companies / High Goodwill				
Non People Driven Companies / Low Goodwill	20	40	20	0
Not Applied / Not Relevant				
Listed Company	40	8	20	0
Non Listed Company				
Not Applied / Not Relevant				
High Free Float (>50%) (Higher Transparency)	40	8	20	0
Low Free Float (<50%) (Lower Transparency)				
Not Applied / Not Relevant				
Strong Marketability in the Stock Market	20	8	40	0
Low or Lack of Marketability in the Stock Market				
Not Applied / Not Relevant				
High Synergy Generation				
Low Synergy Generation				
Not Applied / Not Relevant	0	0	0	0
Business Deals Data / Transaction Multiples Available				
Business Deals Data / Transaction Multiples Not Available				
Not Applied / Not Relevant	0	0	0	0
Financing Structure of Deal with High Debt Burden				
Financing Structure of Deal with Low to Zero Debt Burden				
Not Applied / Not Relevant	0	0	0	0
Companies with Hard Assets	20	40	20	0
Opposite Factor				
Not Applied / Not Relevant				
Significant Assets Not Fully Operational Yet				
Opposite Factor				
Not Applied / Not Relevant	0	0	0	0

Table 42: Jumbo's Rating based on Secondary Factors

SECONDARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Developed Economy Emerging Economy Not Applied / Not Relevant	10	4	4	4
Strong Cash Position Weak Cash Position Not Applied / Not Relevant	20	20	10	0
High CEO and Corporate Insiders Ownership Low CEO and Corporate Insiders Ownership Not Applied / Not Relevant	10	4	10	0
Medium to Strong ESG / Sustainability Low to Medium ESG / Sustainability Not Applied / Not Relevant	0	0	0	0
Early Stage in Deal Making Process Later Stage in Deal Making Process Not Applied / Not Relevant	0	0	0	0
Credible Accounting Standards (US GAAP, IFRS) Other Accounting Standards (Local Standards) Not Applied / Not Relevant	20	10	10	0

JUMBO					
TOTAL RATING POINTS	**1,070**	**568**	**844**	**12**	**2,494**
WEIGHTING OF VALUATION APPROACHES	**43%**	**23%**	**34%**	**0%**	

Jumbo is a listed and cash rich company, possessing strong financial performance and financial reporting. Therefore, based on the applied methodology it can be noted that present values gain significant weight against multiples and of course asset values.

4.2.10. APPLE

Apple is a multinational corporation and global leader in a wide range of high technology consumer products. It is a publicly traded, financially healthy and cash rich company.

Table 43: Apple's Rating based on Fundamental Factors

APPLE

FUNDAMENTAL INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
For Valuing Purposes (Value in Use) For Pricing Purposes (Value in Exchange) Not Applied / Not Relevant	100	50	20	0
Information Sufficient for Detailed Valuation Information Non Sufficient for Detailed Valuation Not Applied / Not Relevant	100	50	20	0
Established Company (Market Share, Brand Name) Not Established Company Not Applied / Not Relevant	100	50	100	0
Company Generating Well Above Average ROIC Company Generating Near Average or Lower ROIC Not Applied / Not Relevant	100	50	20	0
Valuing a Majority Stake / Controlling Interest Valuation Valuing a Minority Stake / Non Controlling Interest Valuation Not Applied / Not Relevant	100	20	50	0
Very Specialized Nature of Business Activity Generic Nature of Business Activity Not Applied / Not Relevant	20	50	100	0
Active Secondary Market for Company's Fixed Assets Non Active Secondary Market for Company's Fixed Assets Not Applied / Not Relevant	0	0	0	0
Unexploited Assets, Licenses, etc. Owned by the Company No Unexploited Assets, Licenses, etc. Owned Not Applied / Not Relevant	20	20	20	100
Property Company Commercial / Industrial Company Not Applied / Not Relevant	100	20	100	0
Uncertain or Volatile Economic Environment Broadly Stable or Growing Economic Environment Not Applied / Not Relevant	100	50	100	0

Table 44: Apple's Rating based on Primary Factors

PRIMARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Later Stage Company (>3-5 years)	20	0	40	0
Startup Company				
Not Applied / Not Relevant				
Large Size Companies (Revenues > EUR 50 million)	40	8	20	0
Smaller Size Companies (Revenues < EUR 50 million)				
Not Applied / Not Relevant				
Management Depth	40	8	20	8
Lack of Management Depth				
Not Applied / Not Relevant				
Services or People Driven Companies / High Goodwill	40	20	40	0
Non People Driven Companies / Low Goodwill				
Not Applied / Not Relevant				
Listed Company	40	8	20	0
Non Listed Company				
Not Applied / Not Relevant				
High Free Float (>50%) (Higher Transparency)	40	8	20	0
Low Free Float (<50%) (Lower Transparency)				
Not Applied / Not Relevant				
Strong Marketability in the Stock Market	20	8	40	0
Low or Lack of Marketability in the Stock Market				
Not Applied / Not Relevant				
High Synergy Generation	40	20	20	0
Low Synergy Generation				
Not Applied / Not Relevant				
Business Deals Data / Transaction Multiples Available				
Business Deals Data / Transaction Multiples Not Available				
Not Applied / Not Relevant	0	0	0	0
Financing Structure of Deal with High Debt Burden				
Financing Structure of Deal with Low to Zero Debt Burden				
Not Applied / Not Relevant	0	0	0	0
Companies with Hard Assets				
Opposite Factor				
Not Applied / Not Relevant	0	0	0	0
Significant Assets Not Fully Operational Yet				
Opposite Factor				
Not Applied / Not Relevant	0	0	0	0

Table 45: Apple's Rating based on Secondary Factors

SECONDARY INFLUENTIAL FACTOR	PRESENT VALUES	ASSET VALUES	MULTIPLES	OPTIONS PRICING
Developed Economy Emerging Economy Not Applied / Not Relevant	20	10	10	10
Strong Cash Position Weak Cash Position Not Applied / Not Relevant	20	20	10	0
High CEO and Corporate Insiders Ownership Low CEO and Corporate Insiders Ownership Not Applied / Not Relevant	4	10	4	0
Medium to Strong ESG / Sustainability Low to Medium ESG / Sustainability Not Applied / Not Relevant	20	20	10	0
Early Stage in Deal Making Process Later Stage in Deal Making Process Not Applied / Not Relevant	0	0	0	0
Credible Accounting Standards (US GAAP, IFRS) Other Accounting Standards (Local Standards) Not Applied / Not Relevant	20	10	10	0

APPLE					
TOTAL RATING POINTS	**1,104**	**510**	**794**	**118**	**2,526**
WEIGHTING OF VALUATION APPROACHES	**44%**	**20%**	**31%**	**5%**	

Apple is a company with high intrinsic value and high transparency in the stock market. It is cash rich and with not fully exploited assets. Therefore, according to the proposed methodology it can be concluded that Present values are by far the most appropriate valuation approach, followed by multiples and to a lesser extent by asset values. Options pricing is weighted notably, due to the existence of unexploited assets such as patents and R&D assets in the company.

5. CHAPTER 5: CONCLUDING REMARKS

The following four tables sort out the weighting of each valuation approach for the 10 selected company cases and present a relevant comment or conclusion:

Table 46: Sorting of Present Values' Weights for the 10 Companies and Conclusion

COMPANY	PRESENT VALUES	COMMENT / CONCLUSION
Sprider Stores	36%	
Lamda Development	36%	Present values are weighted higher
Pinnatta	38%	for listed companies with strong cash flows,
Hellenic Cables	39%	high transparency and strong financial
Inditex	39%	reporting. Present values are
Karelia Tobacco	40%	weighted lower for financially
Plaisio	41%	distressed companies and
Jumbo	43%	startups.
Lamda Hellix	43%	
Apple	44%	

Table 47: Sorting of Asset Values' Weights for the 10 Companies and Conclusion

COMPANY	ASSET VALUES	COMMENT / CONCLUSION
Apple	20%	
Inditex	23%	
Plaisio	23%	Asset values are weighted higher
Jumbo	23%	for those companies owning
Sprider Stores	24%	property and / or "hard" assets.
Karelia Tobacco	25%	
Pinnatta	26%	
Hellenic Cables	27%	
Lamda Hellix	28%	
Lamda Development	29%	

Table 48: Sorting of Multiples' Weights for the 10 Companies and Conclusion

COMPANY	MULTIPLES	COMMENT / CONCLUSION
Lamda Hellix	29%	
Apple	31%	As valuation approach,
Jumbo	34%	multiples are not so "appropriate"
Hellenic Cables	34%	for non listed companies or
Lamda Development	34%	for companies with "hard" assets.
Karelia Tobacco	35%	They are more useful for
Pinnatta	35%	listed companies, and for startups
Plaisio	36%	if there is a transaction market.
Inditex	38%	
Sprider Stores	40%	

Table 49: Sorting of Options Pricing's Weights for the 10 Companies and Conclusion

COMPANY	OPTIONS PRICING	COMMENT / CONCLUSION
Sprider Stores	0%	
Lamda Development	0%	
Hellenic Cables	0%	Options pricing is the valuation approach
Jumbo	0%	with lowest weight since
Karelia Tobacco	1%	the majority of 10 selected companies
Plaisio	1%	do not possess unexploited assets.
Lamda Hellix	1%	
Pinnatta	1%	
Inditex	1%	
Apple	5%	

Therefore, based on the application of the proposed methodology on the selected companies it can be concluded that:

- Present values and multiples are the more "weighted" valuation approaches among the four examined. This is in line with the real world's valuation practices and also reflects the higher emphasis given from the broader academic literature on these two valuation approaches;
- The weightings extracted from the selected companies can be standardized and used as paradigms. For example, in order to value a global, listed and

well established company, the valuator or financial analyst is in a position to apply the four major valuation approaches based on the weights of Inditex or Apple depending on the precise similarities between the subject company and either of these two companies.

In overall, the following points can be concluded with regard to the "corporate valuation approaches weighting technique" presented in this chapter:

- The technique is a simple in use methodology for a valuator or financial analyst to derive the weights of the four major valuation approaches (present values, asset values, multiples and options pricing) when valuing a company;
- The technique is essentially based on the identification, selection and rating of influential factors of value. During all this process, a great deal of subjective judgment has been or must be made.
- As the methodology is developed and applied, it mostly favors the weighting of the present values and multiples approaches.
- Implicitly, this technique may provide "food for thought" and incentive for further scientific work over the critical issues raised and discussed in this thesis: (a) How the valuation approaches interact with one another, (b) Why they give different answers, (c) Which cases they should be mostly utilized for and (d) How the financial analyst decides which valuation approach to choose as the most appropriate one in valuing a subject company.
- Finally, this methodology may assist the financial analyst to tackle questions such as the following: "Which is the appropriate weighting of the major valuation approaches to be utilized when valuing a company with activities in several emerging markets, with limited corporate governance transparency, high risk capital structure, low cash position, in a particular stage of the negotiation process, given the profiles of the buyer and seller, etc.?"[157]

[157] The question is presented as indicative example.

APPENDICES

APPENDIX 1: PRESENT VALUES or INCOME VALUATION APPROACH

In Synopsis

The following table presents the most recognized income valuation approaches that have been discussed by academicians and applied by valuation practitioners.

REVIEW OF SELECTED PRESENT VALUE (or INCOME) VERSIONS TO ESTIMATE CORPORATE VALUE

Approach	Value Extracted	Discounted Stream	Discount Rate	Comment
Dividend Growth Model	Equity Value (= Enterprise Value minus Debt plus Cash)	Dividends	Cost of Equity	
Weighted Average Cost of Capital (WACC)	Enterprise Value (= Equity Value plus Debt minus Cash)	Operating Cash Flow after Tax	Weighted Average Cost of Capital (WACC) (after Tax)	
Adjusted Present Value (APV)	Enterprise Value = (1) Unlevered Enterprise Value + (2) Value of Financing Benefits	Step 1: Operating Cash Flow after Tax Step 2: Financing Benefits	Step 1: Unlevered Cost of Capital Step 2: Interest Rate of Financing Benefits	
Economic Value Added (EVA)	Enterprise Value (= Equity Value plus Debt minus Cash)	Economic Profit after Tax	Weighted Average Cost of Capital (WACC) (after Tax)	
Equity Residual Method (ERM)	Equity Value (= Enterprise Value minus Debt plus Cash)	Residual Cash Flow to Equity	Cost of Equity	

NOTES ABOUT THE PRESENT VALUE VERSIONS

Dividend Growth Model (DGM): The model is suitable for external analysts with no in depth or internal knowledge of the company that is to be valued. It is based on earnings and dividend payout projections, and on either one-stage or multi-stage growth assumptions.

Weighted Average Cost of Capital (WACC): The focus is on the company's key business strategy in future which entails that numerous assumptions have to be made with regard to revenues, profit margins, capital expenditure and working capital among other elements. The approach is used by corporate managers in takeover or merger projects and by equity analysts for equity coverage.

Adjusted Present Value (APV): The approach is appropriate to estimate corporate value in cases of company financing that is to be utilized for a certain investment project.

Economic Added Value (EVA): EVA is used to estimate corporate performance in terms of economic and not cash flow measures. The approach focuses on the generation of economic value for an explicit period of time.

Equity Residual Method (ERM): The approach is commonly used in leverage buyouts in which financing becomes a key issue and the viability of the new entity is critical in decision making. ERM focuses on both financing and business issues.

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APPENDIX 2: ASSET BASED APPROACH Part 1:

BRAND NAME VALUATION

Article by Nicholas Ir. Georgiadis, Valuation & Research Specialists (VRS), Year 2009

"A product is something that is made in a factory; a brand is something that is bought by a customer. A product can be copied by a competitor; a brand is unique. A product can be quickly outdated; a successful brand is timeless."

Stephen King, WPP Group, London.

Building a brand name, which refers mainly to a product or service, and maintaining such at the top is a very crucial and challenging process in the financial sector and also in the broader business market. Using only a few words (1 to 3), together with imagination but also simplicity, the brand name becomes a trademark, the "feature" that follows a company endlessly during its journey through time. In an era characterized by fierce competition globally, where mergers and acquisitions are a common business practice, brand names gain additional value; correspond to the most powerful commercial growth driver of a company, categorized in intangible assets and translated into capital. This is the very essence of brand name valuation, which is vital for any business development.

BRAND NAME: A CONCEPTUAL APROACH

The functional role of a brand is to distinguish the products of one manufacturer from those of another, by providing consumers with the freedom of choice. According to Ted Levitt (PROFESSOR THEODORE LEVITT, LEGENDARY MARKETING SCHOLAR AND FORMER HARVARD BUSINESS REVIEW EDITOR), brand names add new dimensions to products, differentiating such by some manner from other products that were designed to satisfy the same needs. Such differences may be functional, material or may even be more symbolic and intangible. In fact, what distinguishes a brand from a product is the overall sum of consumer opinions and impressions regarding the product's characteristics, the name of the brand and what it represents for the company that created the brand.

ORIGIN OF THE BRAND NAME DEFINITION

A brand name operates, categorically, as a bridge between what has occurred in the past and what may occur in the future. What is commonly referred to as a "brand", is something that has been around for many centuries as a method that aims at distinguishing between the different products of producers. Conceptually, the word "brand" has its origin from the Scandinavian word "brandr", which means "mark made by burning", as brands were and still are the means used by owners of livestock to mark their animals. According to another approach by Professor Torsten H. Nilson, the word brand arises from the Scandinavian word "branna", which is used to express burning, whereas fire is the meaning of "brand". Whatever conceptual approach is followed, the word brand implies the marking of one's ownership or assets.

WHY BRANDS ARE VALUABLE

Brands are particularly important to their owners for two quite different reasons. First of all, brands focus on the dedication of consumers and thus evolve into active capital for the business, which ensures future demand and therefore future income. In this perspective, brands provide stability to companies; they prevent expansive competition and contribute to investment and planning. At the same time, a brand name "captures" promotional investment, which is hidden behind the brand. Large brand names, such as Marlboro, Pepsi etc, still benefit from the significant investments in brand building even today. The examples are brand names that were designed by their owners in the 1950's and 1960's when advertising means, in contrast to today, were cheaper.

A second feature of the brand name is its strategic importance. The manner in which each brand name operates has been described as a process via which the manufacturer approaches directly the consumer, and not indirectly by involving the retailer.

According to the above, brand names secure demand for their manufacturers, together with a more powerful negotiation position in agreements with retailers, while they also constitute a mean to influence consumer behavior. Finally, brand names also provide the company with legal protection concerning the product's unique characteristics.

However, brands are also of particular importance for consumers themselves. A brand name may constitute an agreement between the manufacturer and the consumer and as such, branding is not a cynical activity imposed on the unwary consumer without his/her own "consent". On the contrary, one can argue that brands

allow consumers to realize their purchases with great confidence and convenience as the brand name itself offers a reliable guarantee for the product's quality, value and satisfaction.

WHY BRANDS ARE VALUED

Although public perceptions of brand valuation are often focused on balance sheet valuations, the reality is that the majority of valuations are now actually carried out to assist with the brand management and strategy. Companies are increasingly recognizing the importance of brand guardianship and management as key to the successful running of any business.

The values are associated with the product or service communicated through the brand to the consumer. Consumers no longer want just a service or product but they want a relationship based on trust and familiarity. In return businesses will enjoy an earnings stream secured by loyalty of customers who have "bought into" the brand.

Some of the most significant scopes and applications of brand valuation are as follows:

- Brand management and development
- Improvement of communication management
- Benchmarking of competition
- Monitoring value year on year
- Creating a brand-centric culture
- External licensing, brand control and tax planning
- Mergers and acquisitions
- Joint-venture agreements
- Expert Witness – evaluating the economic damage of trade mark infringement
- Financing and insolvency – securing funds through identification of value of intangible assets
- Balance sheet

HOW BRANDS ARE VALUED

There are two critical questions to answer in brand valuation. The first is exactly what is being valued. The trademarks, the brand or the branded business? The second important question is the purpose of the valuation. An important distinction can be made between technical and commercial valuations.

Technical valuations are generally conducted for balance sheet reporting, tax planning, litigation, securitization, licensing, mergers and acquisitions and investor relations purposes. They focus on giving a point in time valuation that represents the value of the trademarks or of the brand as defined above.

There are a number of recognized methods for valuing trademarks or brands. Initially, the valuation can be based either on historic costs or on implied costs. Both cost methods are subjective, however either one is usually followed with consistency as the relevant parties want to know what a brand might cost to create.

One may also use market value as a reference, though frequently there is no market value for intangibles, particularly for trademarks or brands. Therefore, the most efficient – from several perspectives - approach to brand valuation is to employ a valuation method, which results in a monetary value.

In summary, there is the price premium or the gross margin approaches that consider price premiums or superior margins versus a generic business as the metric for quantifying the value that the brand contributes to.

Economic substitution analysis is another approach - if that trademark or brand did not exist what would the financial performance of the branded business be? The problem with this approach is that it relies on subjective judgments as to what the alternative substitute might be.

On the other hand, the two most useful approaches for brand valuation consist of the earnings split and "relief-from-royalty" methods.

According to the "relief-from-royalty" method, the value of a brand name / trademark is defined by the present value of future cash flows that would arise if the royalties for the use of the brand name / trade mark were "rented" by another company. The concept of this valuation method refers to the general definition of opportunity cost. Specifically, the value is defined as the royalty rate on the future sales or profit that would result from the use of the specific trade mark. At a later stage, the result is discounted to present value, after deducting the corresponding tax. The royalty rate that is applied in this method is defined according to real agreements for the use of brand names / trademarks that have been made in the market or sector. The discount rate used in this method is usually higher than the company's weighted average cost of capital (WACC), in order to reflect the higher risk related to the return of an intangible asset.

CONCLUSION

It is important for the business community to comprehend that brand names constitute a large and significant asset, which notably exceeds the value of fixed assets and other investments, as the brand is essentially formed from a continuous, over the year or decades, business activity. Those who appreciate the benefits of brand building invest significant amounts in this process and thus set the base for reaching a future target of value. This fundamental target is linked to the strengthening and broad recognition of the brand name in the market which can be a profitable factor for any company. Therefore, investing in brand names, as well as the appropriate valuation of the brand itself, are key elements in establishing a company in its sector and its viability through time.

SOURCES

- WPP Group
- Professor THEODORE LEVITT, LEGENDARY MARKETING SCHOLAR AND FORMER HARVARD BUSINESS REVIEW EDITOR
- Professor Torsten H. Nilson
- www.poolonline.com
- The newspaper «KATHIMERINI»
- Brand Name Valuation Institutions
- Web Pages on Brand Names
- Articles from International Press

ASSET BASED APPROACH Part 2:

CASE STUDY OF BRAND STRATEGY IN A SECTOR - PROFESSIONAL SPORTS

Over the past decades, athletic teams have managed to evoke an emotional response from their fans, a type of "give-and-take", whose strength possibly exceeds any other "relationship" present in any other business activity. The superiority of this relationship is attested not as much by economic data rather than through the persistent devotion of fans towards their team, which in developed economies can be interpreted as the source of income for professional athletic clubs. In an effort to capitalize on this emotional relationship teams share with their fans, professional athletic teams try to signal and thus project their "identity" through a brand name, which corresponds to the name of the team that has "entered" the conscience of fans for many decades and in many cases for longer than a century. In business, the same holds for companies that sell brand name products with a decade or even century long history (Coca Cola, Levis etc), as the management of such companies utilize this intangible asset as well as the "special" relationship that has been established with the customers / consumers.

A professional sports team, from any sports whatsoever, has the opportunity to build what is known as brand equity, namely capitalizing on the "emotional" relationship it shares with its fans. The so-called brand equity is defined by terms that refer to the influence the brand itself has through the marketing strategy: "it accumulates a natural result which emerges from the advertising of a product or service due to its brand, whereas such a result would not arise if the particular product or service did not have such a known name" (Keller, K. L., 1993, Conceptualizing, measuring, and managing customer-based brand equity, Journal of Marketing). Therefore, the brand equity of a company translates into a promise it gives to its customers in order to meet their expectations as well as to the accumulation of any value created throughout the years on a constant and steady basis.

The value of an athletic brand can be distinguished amongst two categories. Initially, the value is translated in terms of valuation for the purposes of balance sheets, mergers, acquisitions or for purposes of dividend policy. On a different level, a strong brand name can be reflected in additional sales of athletic products and services both due to wide recognition and acceptance of the athletic name, and due to the indirect promise of quality ensured for customers, a quality that is linked to the "weight" of the athletic name. Due to acute competition and multifaceted demand,

athletic companies consistently strive to increase the level of expectations as well as the interest of their fans through an appropriate marketing strategy. As is the case for companies, athletic teams' managers also must understand in depth as well as effectively the psychology and behavior of consumers and fans, in order to proceed each time with more carefully planned and designed strategic decisions.
Having the above in mind, most – although not all – sports teams have aimed at "conveying" their condition to another level and to be established as brands according to their own principles and convictions. Internationally acclaimed teams such as Manchester United, Real Madrid, New York Yankees and Boston Celtics are some illustrative examples. Such are characteristic examples of athletic clubs that reflect the success of an aggressive sports name strategy, by promoting their teams in the market as large and significant. Of course in the market there are several smaller teams that follow a more conservative path.

A powerful athletic name provides the team it characterizes with the ability to develop and restore the trust of its fans, a fact that with no doubt contributes to creating value from sales of a broad range of products and services linked to the team. For example, the football (soccer) team Real Madrid gained income from advertising during 2004 amounting to USD 225 million. In reality, powerful brands have a financial / business value that is strongly connected to the opportunity provided for the sports team to create additional income by "taking advantage" of the name launched as its trademark. At the same time however, there is an increasing number of sports teams that seem to act through a long-term strategy and plan the building and leverage of their name.

ASSET BASED APPROACH Part 3:

INDICATIVE GLOBAL BRAND VALUES [as of Year 2007]

Logos	Brand Name	Rating 2007	Rating 2006	Brand Value ($ million)	Country	Sector	Turnover 2007 (in million USD)	Earnings a.t. 2007 (in million USD)	Turnover 2007 (in million local currency units)	Earnings a.t. 2007 (in million local currency units)		Based on the following company	Brand Value / Turnover	Brand Value Earnings
	Coca Cola	1	1	65,324	United States	Beverages	28,857	5,981				The Coca Cola Company (Cons.)	2.26	10.92
	Microsoft	2	2	58,709	United States	Computer Software	51,122	14,065				Microsoft	1.15	4.17
	IBM	3	3	57,090	United States	Computer Services	98,786	10,418				IBM	0.58	5.48
	GENERAL ELECTRICS	4	4	51,569	United States	Diversified	172,738	22,208				GE	0.30	2.32
	NOKIA	5	6	33,696	Finland	Consumer Electronics	66,580	9,395	51,058	7,205	EUR	NOKIA Corporation & Subsidiaries	0.51	3.59
	TOYOTA	6	7	32,070	Japan	Automotive	15,912	504				TOYOTA Industries Corporation	2.02	63.63
	INTEL	7	5	30,954	United States	Computer Hardware	38,334	6,976				INTEL (Cons.)	0.81	4.44
	McDonald's	8	9	29,398	United States	Restaurants	22,787	2,395				McDonald's Corporation	1.29	12.27
	Disney	9	8	29,210	United States	Media	35,510	4,687				The Wald Disney Company	0.82	6.23
	Mercedes Benz	10	10	23,568	Germany	Automotive	129,616	5,196	99,399	3,985	EUR	Daimler Group	0.18	4.54

Logos	Brand Name	Rating 2007	Rating 2006	Brand Value ($ million)	Country	Sector	Turnover 2007 (in million USD)	Earnings a.t. 2007 (in million USD)	Turnover 2007 (in million local currency units)	Earnings a.t. 2007 (in million local currency units)	Based on the following company	Brand Value / Turnover	Brand Value Earnings
	Citibank	11	11	23,442	United States	Financial Services	81,698	3,617			Citigroup	0.29	6.48
	HP	12	13	22,197	United States	Computer Hardware	104,286	7,264			HEWLETT-PACKARD CO. & SUBSIDIARIES	0.21	3.06
	BMW	13	15	21,612	Germany	Automotive	48,310	1,184			BMW AG	0.45	18.25
	Marlboro	14	12	21,282	United States	Tobacco	73,801	9,786			Altria Group	0.29	2.17
	American Express	15	14	20,827	United States	Financial Services	27,731	4,012			American Express (Cons.)	0.75	5.19
	Gillette	16	16	20,415	United States	Personal Care	76,476	10,340			P&G Global Operation	0.27	1.97
	Louis Vuitton	17	17	20,321	France	Luxury	1,189	74			Gartner	17.09	274.61
	Cisco	18	18	19,099	United States	Computer Services	34,922	7,333			Cisco	0.55	2.60
	HONDA	19	19	17,998	Japan	Automotive	93,919	5,018			HONDA Motor Co. & Subsidiaries	0.19	3.59
	Google	20	24	17,837	United States	Internet Services	16,594	4,204			Google (Cons.)	1.07	4.24

Logos	Brand Name	Rating 2007	Rating 2006	Brand Value ($ million)	Country	Sector	Turnover 2007 (in million USD)	Earnings a.t. 2007 (in million USD)	Turnover 2007 (in million local currency units)	Earnings a.t. 2007 (in million local currency units)		Based on the following company	Brand Value / Turnover	Brand Value Earnings
	SAMSUNG	21	20	16,853	Republic of Korea	Consumer Electronics	105,018	8,447				Samsung Electronics & Subsidiaries	0.16	2.00
	Merrill Lynch	22	21	14,343	United States	Financial Services	62,675	-8,047				Merrill Lynch	0.23	-1.78
	HSBC	23	28	13,563	United Kingdom	Financial Services	92,359	20,455				HSBC	0.15	0.66
	NESCAFE	24	23	12,950	Switzerland	Beverages	92,193	9,757	107,552	11,382	CHF	NESTLE (Cons.)	0.14	1.33
	SONY	25	26	12,907	Japan	Consumer Electronics	70,303	1,071				SONY (Cons.)	0.18	12.05
	PEPSI	26	22	12,888	United States	Beverages	39,474	5,599				Pepsico	0.33	2.30
	ORACLE	27	29	12,448	United States	Computer Software	17,996	4,274				FedEx Corporation	0.69	2.91
	UPS	28	32	12,013	United States	Transportation	49,692	382				UPS	0.24	31.45
	NIKE	29	31	12,003	United States	Sporting Goods	16,325	1,491				NIKE Inc.	0.74	8.05
	Budweiser	30	27	11,652	United States	Alcohol	16,686	2,115				US BEER CORPORATION	0.70	5.51

Source: Interbrand. http://www.interbrand.com

Note: Revenues refer to interest income and similar income for banking groups.

APPENDIX 3: MARKET BASED APPROACH MULTIPLES & TRANSACTIONS

Case Study:

ANAVEX EQUITY RESEARCH REPORT[158]

The following case study depicts the valuation of ANAVEX, a life sciences corporation, and is taken from an equity research report issued in 2009 by Valuation & Research Specialists (VRS), an independent equity research and corporate valuation firm based in Athens, Greece.

COMPANY'S DESCRIPTION AND KEY INVESTMENT POINTS

Anavex Life Sciences Corp. (www.anavex.com) is an emerging biopharmaceutical company. It is engaged in the discovery and development of novel drugs which target the treatment of cancer and neurological diseases such as Alzheimer's, epilepsy and depression. The Company's shares are listed in the US OTC market (OTCBB: AVXL).

ANAVEX has a robust portfolio of drugs in development targeting diseases of the Central Nervous System (CNS), such as Alzheimer's, epilepsy and depression, as well as types of cancer. The ANAVEX drug candidates have a new, unique mechanism of action. This offers not only a proven symptomatic treatment mechanism of cognitive disorders but, more importantly, the potential for a disease-modifying approach.

[158] ANAVEX Life Sciences Corp., Sector : Biopharmaceuticals, US Equities, September 15, 2009, Equity research report prepared by Valuation & Research Specialists (VRS), Analysts: Christophoros J. Makrias, Nicholas Ir. Georgiadis, Maria Papadopoulou. Permission has been granted by Valuation & Research Specialists (VRS) for using the contents of the report as case study in the appendix of this thesis.

The Company, ANAVEX, has 7 product candidates in development for 8 disease indications. One of the products is in IND stage and six of them in Preclinical stage. The Company's target is to launch Human Clinical Trials for 4 of its compounds (Alzheimer's, Melanoma, Prostate and Epilepsy) by the beginning of 2010, while the other compounds will follow up.

The potential sales of the Company's products after their launch are estimated to reach US$6 billion.

Efficacy, very low toxicity, possible use in combination therapies and potential disease modifying mechanism of action are some of the Company's two leading compound characteristics (Alzheimer's and Melanoma). The aforementioned characteristics provide confidence to the Company that the compounds will reach Phase II stage by late 2010 or early 2011 with high certainty.

We initiate coverage on the Company with a Buy recommendation, setting our target price at $6.30 per share valuing the Company at $130.90 million and estimating a 163% upside potential.

The Company has a high-risk profile, given the development stage of its products and the lack of any revenues realized yet. However, the innovative platform for its drugs' development along with the remarkable results demonstrated so far, provide confidence that its products will reach safely the market. The potentials at that stage are tremendous.

VALUATION METHODOLOGY

We have applied two valuation methods in order to value ANAVEX Corp. given the nature and the current development stage of the Company.

As the Company has not generated any sales yet from its products while it has spent a substantial amount for the research and the development of its products, it has reported only cumulative losses so far. Consequently we haven't applied any methodology involving future earnings or cash flows forecasting, but alternatively we have been based on multiples and past reported deals of the industry. We have chosen though to display a number of companies listed whose products have proceeded to Phases I, II and III aiming at presenting the potential value of the Company in the future stages. In addition, we have presented the expected evolution of the Company's compounds in 2010 and 2011 where it can be shown more clearly their rapid development within the following two years. The expected stages of the compounds have been estimated based on the results they have demonstrated so far. In addition we have also displayed a list of deals conducted in similar stages in order to present the size and the value that a company could potentially worth at these stages.

Price to Sales Ratio

The first methodology applied is based on multiples valuation and especially on the Price/Sales ratio. The methodology has been modified though, in order to take into account the level of uncertainty for each product to reach the market and generate the respective sales.

The pool of data chosen in order to obtain the P/S multiple is consisted of twelve major pharmaceutical companies (presented in the table below) which operate globally. We have selected the specific companies as they can be characterized as benchmarks of the industry while their worldwide operations, substantial market capitalization and significant liquidity make the results of the analysis more unbiased.

Symbol	Company Name	Price* (in US$)	Market Capitalization (in US$,000)	2009 Revenue estimates (in US$,000)	P/S 2009
PFE	PFIZER INC	16.88	113,930,000	45,364,500	2.51x
AZN	ASTRAZENECA PLC ADS	46.09	66,740,000	31,932,875	2.09x
NVS	NOVARTIS AG ADS	46.03	104,250,000	42,562,333	2.45x
ABT	ABBOTT LABORATORIES	46.16	71,370,000	30,432,462	2.35x
BMY	BRISTOL-MYERS SQUIBB	23.08	45,720,000	21,540,538	2.12x
LLY	LILLY ELI CO	33.93	38,990,000	21,264,267	1.83x
GSK	GLAXOSMITHKLINE PLC	39.20	99,350,000	45,471,265	2.18x
JNJ	JOHNSON AND JOHNS DC	61.31	168,930,000	60,959,941	2.77x
SNY	SANOFI-AVENTIS SA	34.01	88,800,000	42,951,000	2.07x
WYE	WYETH	48.17	64,320,000	22,246,000	2.89x
SGP	SCHERING PLOUGH CP	28.26	46,180,000	18,288,500	2.53x
MRK	MERCK CO INC	32.80	69,180,000	23,440,308	2.95x
	Simple P/S Average				**2.40x**
	Weighted P/S Average				**2.45x**

Source: www.nasdaq.com, www.yahoo.com/finance. *Market prices as of 26/08/2009.

The multiples displayed above are based on current market data and revenues estimates for 2009 (JCF estimates).

The factor incorporating the uncertainty for each product to reach the market is included into the valuation through the application of a certain probability of success. Each product candidate bears a certain probability of success based on its current stage of development.

Development Stage	Time for Completion (average)	Expected Cost %	Expected Cost ($US million)	Probability of Success
Discovery	1.5 years	6%	$1 - $3	1%
Pre-clinical	4.5 years	14%	$4 - $7	5%-7%
IND	0.5 years	2%	$0,5-$1	7%-10%
Phase I	1-1.5 years	6%	$1 - $3	15%-25%
Phase II	2-2.5 years	12%	$3 - $6	35%-45%
Phase III	3.5 years	52%	$12 - $24	50%-70%
NDA Preparation & FDA Review	2 years	8%	$2 - $4	75%-100%
	15-16 years	**100%**	**23.5 – 48**	

Source: http://wistechnology.com/articles/377/

In the table presented above, we have displayed the 6 stages that a compound has to complete before obtaining the final FDA approval and reach the market. We have also displayed the average time needed for the completion of each stage and the average expected cost per stage. In addition, based on the historical data each compound carries a certain probability of success based on its current stage.

We have estimated each product's revenues based on the current number of patients, the expansion growth rate of each disease on population and the expected yearly therapy cost per patient. Given the fact that the Company's product candidates are expected to be launched in the market and generate sales in a certain time in the future, we have discounted the projected sales per product into 2009 terms.

We have applied a 5% probability of success on each product based on their current stage of development.

The table below presents the estimated launch year per product, the expected revenues at that time and the discounted revenues in 2009 terms. The discount rate applied was set at 25% given the high risk profile of the products' current stage. Based on the international bibliography a risk premium of 8%-10% would be a safe discount rate (see references). Provided though that the Company is in developing stage, we have chosen to apply a high discount rate. The specific rate is the average Profit before Taxes (PBT) margin for the big 12 pharmaceutical companies chosen as comparables (25%-26%) on the basis that this would be the minimum return (IRR) that a big pharmaceutical company would require in order to make a similar investment.

Furthermore, the specific discount rate corresponds to an average rate of return that a pharmaceutical company would generate by investing its capital in the marketing of a ready product instead of pursuing R&D procedure for a new candidate product.

In addition, provided the early developing stage of the Company's compounds, a high discount rate applied would correspond to the current high risk profile of the Company.

Compound	Disease	Current Stage (2009)	Probabilities	Average Probability applied	Year of Product's Launch	Projected Yearly Sales After Launch ($,000)	Discount rate	Discounted Revenues in US$'000	Weighted Average P/S	Discounted Market Value in US$'000	Valuation based on Probabilty of success according to 2009 stage in US$'000
ANAVEX 3-97	**Cancer (MELANOMA)**	**Pre-clinical**	**5%-7%**	**5%**	**01/01/2016**	**443,237**	**25%**	**92,953**	**2.45**	**227,441**	**11,372.07**
ANAVEX 7-1037	**Cancer (PROSTATE)**	**Pre-clinical**	**5%-7%**	**5%**	**01/01/2018**	**615,867**	**25%**	**82,660**	**2.45**	**202,256**	**10,112.78**
ANAVEX 22-1068	**Cancer (PANCREAS)**	**Pre-clinical**	**5%-7%**	**5%**	**01/01/2015**	**241,796**	**25%**	**63,385**	**2.45**	**155,093**	**7,754.65**
ANAVEX 2-73 (backup ANAVEX 1-41)	**Alzheimer**	**IND**	**7%-10%**	**5%**	**01/01/2017**	**1,753,282**	**25%**	**294,152**	**2.45**	**719,740**	**35,986.98**
ANAVEX 2-73	**Diabetic Degenerations**	**Pre-clinical**	**5%-7%**	**5%**	**01/01/2019**	**218,460**	**25%**	**23,457**	**2.45**	**57,395**	**2,869.76**
ANAVEX 19-144	**Epilepsy**	**Pre-clinical**	**5%-7%**	**5%**	**01/01/2018**	**837,931**	**25%**	**112,465**	**2.45**	**275,183**	**13,759.17**
ANAVEX 1-41	**Depression**	**Pre-clinical**	**5%-7%**	**5%**	**01/01/2019**	**1,147,224**	**25%**	**123,182**	**2.45**	**301,406**	**15,070.30**
ANAVEX 10-90	**Neuropathic Pain**	**Pre-clinical**	**5%-7%**	**5%**	**01/01/2020**	**745,757**	**25%**	**64,060**	**2.45**	**156,744**	**7,837.20**
TOTAL						**6,003,553**		**856,315**		**2,095,258**	**104,762.91**

Source: Company's Estimates & VRS Projections.

Sensitivity Analysis

We have also prepared a sensitivity analysis based on the probability of success and discount rate factors. [Values are expressed in USD ,000]

		Discount Rate						
		10.00%	15.00%	20.00%	25.00%	30.00%	35.00%	40.00%
Probabilities of Success	4.00%	253,132	171,811	118,928	83,810	60,039	43,662	32,196
	4.50%	284,773	193,288	133,794	94,287	67,544	49,120	36,221
	5.00%	316,415	214,764	148,660	104,763	75,048	54,578	40,245
	5.50%	348,056	236,240	163,526	115,239	82,553	60,036	44,270
	6.00%	379,698	257,717	178,392	125,715	90,058	65,493	48,294
	6.50%	411,339	279,193	193,258	136,192	97,563	70,951	52,319

Source: VRS Estimates.

Our valuation incorporates a sensitivity analysis based on the discount rate range of 10% - 40% and a probability of success between 4% - 6.5%.

Past Deals

Apart from the valuation method based on the comparable analysis we have also approached the Company's value based on the previous deals made in the industry and especially with companies in similar developing stage with products targeting the same diseases.

The previous deals sealed are basically categorized into acquisitions and alliances. In the first category the companies / targets were fully acquired by the acquirer. In the second category, we have included the alliances contracted between small developing companies and big pharmaceutical ones.

Acquisitions							
Public / Private Company	**Company /Target**	**Acquirer**	**Deal Date**	**Product Phase at Time of Deal**	**Deal Value (in $ mn)**	**Product**	**Indication**
Listed	Arius Research	Roche	23/7/2008	Preclinical & Research	189	FunctionFIRST™ platform and early pipeline of antibody candidates	Cancer and Immunology
Private	U3 Pharma AG	Daiichi Sankyo Co., Ltd.	21/5/2008	Preclinical & Research	235	U3-1287 (fully-human anti-HER3 monoclonal antibody (mAb))	Cancer
Listed	Renovis, Inc.	Evotec AG	19/9/2007	Preclinical	151.8	EVT 201, EVT 101, EVT302, VR1 antagonists, P2X7 antagonists, P2X3 antagonists	Neurological and Inflammatory Diseases
Private	Morphotek	Eisai Inc.	22/3/2007	Early Clinical and preclinical candidates	325	Therapeutic monoclonal antibodies	Oncology, rheumatoid arthritis, and infectious disease
Listed	NeuroMedix Inc.	Transition Therapeutics Inc.	21/3/2007	Preclinical	11.1	Minozac	Alzheimer's disease
Private	Domantis Ltd	GlaxoSmithKline plc	8/12/2006	Preclinical	454	Monoclonal antibodies	Rheumatoid arthritis, asthma, chronic obstructive pulmonary disease, and multiple myeloma
Average market value					**227.65**		
Discounted average market value by applying a 30% discount rate					**159.355**		

Source: Company, VRS Database.

Alliances- Licenses							
Public / Private Company	**Company / Target**	**Acquirer**	**Deal Date**	**Product Phase at Time of Deal**	**Deal Value (in $ mn)**	**Product**	**Indication**
Listed	Array BioPharma Inc.	Celgene Corp	24/9/2007	IND	540	New Discovery Targets	Oncology and Inflammation
Listed	Exelixis Inc.	Genentech, Inc.	1/1/2007	IND	40	XL518	Oncology
Listed	BTG plc	Onyx Pharmaceuticals Inc.	7/11/2008	Late Preclinical	320	BGC 945	Cancer
Private	DeveloGen AG	Boehringer Ingelheim	13/5/2009	Preclinical	322	Novel therapeutics	Diabetes, obesity, metabolic syndrome, and other insulin resistance-related disorders
Listed	CombinatoRx, Incorporated	Novartis Corporation	8/5/2009	Preclinical	62	Novel anti-cancer combinations	Cancer
Listed	Micromet Inc.	Bayer Pharma	12/1/2009	Preclinical	396	BiTE antibodies	Oncology
Listed	Biocompatibles International Plc	AstraZeneca PLC	24/12/2008	Preclinical	422.6	Glucagon-like peptide (GLP-1) analogue	Diabetes and obesity
Private	Deciphera Pharmaceuticals LLC	Elli Lilly	3/10/2008	Preclinical	130	B-Raf kinase inhibitor programme	Oncology
Private	Nycomed GmbH	Bayer Schering Pharma	7/8/2008	Preclinical	80	Kinase inhibitor program	Cancer
Listed	Dyax Corp.	Sanofi Aventis	12/2/2008	Preclinical	500	DX-2240	Oncology
Private	Aegera Therapeutics	Human Genome Science	20/12/2007	Preclinical	315	AEG 40826	Oncology
Listed	3M	Coley Pharmaceuticals Inc.	12/6/2007	Preclinical	20	Small molecules targeting TLR7 and TLR8, 200 issued, other pending patents and a library of c.10,000 compounds	Oncology
Private	Aveo Pharmaceuticals	Schering-Plough	4/4/2007	Preclinical	460	AV-299	Oncology
Private	Adnexus Therapeutics	Bristol-Myers Squibb	26/2/2007	Preclinical	240	Angiocept	Oncology
Private	AC Immune Ltd.	Genentech, Inc,	6/12/2006	Preclinical	300	Anti-Beta-Amyloid Antibodies	Alzheimer's Disease and Other Human Diseases
Private	Biotica Technology Limited	Wyeth Pharmaceuticals	5/10/2006	Preclinical	195	Rapamycin analogs	Autoimmune, inflammation, Oncology
Private	CGI Pharmaceuticals	Genentech,	4/10/2006	Preclinical	500	Small molecule therapeutics	Oncology
Private	Xenon Pharmaceuticals Inc	Takeda Pharmaceuticals Inc	2/10/2006	Preclinical	75.5	XEN401	Pain
Listed	Santaris Pharma A/S	Enzon Pharmaceuticals Inc.	1/7/2006	Preclinical	211	HIF-1 alpha antagonist and the Survivin antagonist, and 6 proprietary RNA Antagonist candidates	Oncology
Private	Astex Therapeutics	Novartis Corporation	7/12/2005	Preclinical	520	AT9311, AT7519	Oncology
Listed	Renovis, Inc.	Pfizer Inc.	1/5/2005	Preclinical	187	VR1 antagonists	Pain
Listed	Memory Pharmaceuticals Inc.	Hoffmann-La Roche Inc.	1/7/2002	Preclinical	12	PDE4 Inhibitors	Alzheimer's disease
Average market value					**258.36**		
Discounted average market value by applying a 30% discount rate					**180.85**		

Source: Company, VRS Database.

As transaction values of alliances and acquisitions deals in the pharmaceutical - biotech sector used in our model span a 4 year period (2005-2009), during which volatility in equity values increased substantially, we apply a discount rate of 30% in order to better reflect the current stock market levels in our valuation approach. The following table presents the relevant changes of two key US stock indices in the period under consideration.

US Stock Indices Past Performance

	4-y High Oct. 2007	Aug. 2008	*Change % Oct. '07 - Aug. '08*	4-y High March 2009	*Change % Oct. '07 - Mar. '09*	*Change % Aug. '08 - Mar. '09*	28 Aug. 2009	*Change % Oct. '07 - Aug. '09*
S&P 500	1,562.47	1,300.68	*-16.75%*	683.38	*-56.26%*	*-47.46%*	1,028.12	*-34.20%*
Dow Jones IA 30	14,164.53	11,715.18	*-17.29%*	6,626.94	*-53.21%*	*-43.43%*	9,633.33	*-31.99%*

Source: Bloomberg.

In more detail the S&P500 and Dow Jones IA 30 have depicted a decrease in their values by 34.20% and 31.99% respectively for the period October 2007 until August 2009.

Furthermore, the deals contracted, incorporate a premium which represents the potentials of these deals. ANAVEX has not discussed or signed any agreement or alliance yet and therefore by applying a discount rate we exclude partially any premium incorporated in the average value of the deals.

Based on the valuation stemming from the three different approaches we have applied a weight on each value in order to take into account the result of all the approaches. We have applied a 20% weight on the value stemming from the average value of the acquisitions and alliances and a 60% weight on the value resulting from the comparables approach. We have applied a higher weight on the comparables approach as it includes the company-specific factors and the potentials of its unique technology.

Anavex Valuation			
Valuation Method	**Value (in $ mn)**	**Weight**	**Final Value (in $ mn)**
Valuation based on **Comparables**	104.76	60%	62.86
Valuation based on **Acquisitions**	159.36	20%	31.87
Valuation based on **Alliances-Licenses**	180.85	20%	36.17
Total Value			**130.90**

Source: VRS Estimates.

Based on the weighted valuation arising from the three valuation approaches we have valued Anavex at $ 130.9 million. This amount is expressed in per share data at $6.30 per share based on the outstanding number of shares and at $ 4.86 / per share at a fully dilutive basis. Given that the current market price per share of the Company stands at $2.4 per share and $1.85 per share on fully dilutive basis, the valuation provides an upside of 163%.

Despite the fact that our valuation has been based only on comparables and past deals we have chosen to display a list of companies which can be considered as future comparables to ANAVEX. The products of these companies are in higher developing stages vs. that of ANAVEX while as it can be concluded from their market value the potential for the Company once their compounds proceed to next phases will be substantial.

Company	Symbol	Pipeline	Market Cap (US$ mn) *	Company Description	Market Listed
Geron Corporation	GERN	2 Phase I/II (Cancer) 1 Phase I 2 Preclinical (Stem Cells)	642	Geron develops first-in-class biopharmaceuticals for the treatment of cancer and chronic degenerative diseases, including spinal cord injury, heart failure and diabetes. It is advancing an anti-cancer drug and a cancer vaccine that target the enzyme telomerase through multiple clinical trials. It is also the world leader in the development of human embryonic stem cell-based therapeutics. It has received FDA clearance to begin the world's first human clinical trial of a HESC-based therapy: GRNOPC1 for acute spinal cord injury.	Nasdaq
Alnylam Pharmaceuticals, Inc.	ALNY	1 Phase II 1 Phase I Several Discovery & Preclinical	932	Alnylam has developed an entirely new class of innovative medicines based on a breakthrough discovery in biology known as RNA interference, or RNAi. With RNAi technology, they intend to treat disease and impact the lives of patients in a fundamentally new way by silencing disease-causing genes upstream of today's medicines.	Nasdaq

Ardea Biosciences, Inc.	RDEA	2 Phase II 3 Phase I 2 Preclinical	328	Ardea Biosciences develops drugs for Cancer, Inflammatory Diseases & HIV. Its most advanced clinical-stage product candidates include RDEA594, a URAT1 transporter inhibitor for the treatment of hyperuricemia and gout; RDEA119, a specific inhibitor of mitogen-activated ERK kinase (MEK) for the treatment of cancer and inflammatory diseases; and RDEA806, a non-nucleoside reverse transcriptase inhibitor (NNRTI) for the treatment of HIV.	Nasdaq
Medivation Inc.	MDVN	1 Phase III 1 Phase II	821	Medivation, Inc. is a biopharmaceutical company with small molecule drugs in clinical development to treat three large, unmet medical needs—Alzheimer's disease, Huntington's disease and castration-resistant prostate cancer.	Nasdaq

* Market prices as of 28/08/2009

Source : www.nasdaq.com

APPENDIX 4:FACTORS DETERMINING THE SELECTION OF VALUATION METHODOLOGY AND AFFECTING VALUATION OUTCOME

MARKETABILITY DISCOUNT

The following table depicts a broad set of factors influencing marketability according to IRS[159] DLOM[160] Job Aid. [161]

	Subject Company's Factors per IRS DLOM Job Aid
1	Value of subject company's privately versus publicly traded securities
2	Dividend – paying ability and history
3	Dividend yield
4	Attractiveness of subject business
5	Attractiveness of subject industry

[159] Internal Revenue Service, US
[160] DLOM stands for Discount for Lack of Marketability.
[161] Presented in the article: Understanding the Largest Valuation Discount #17: Factors Influencing Marketability Expanded, Mercer Chris (October 1, 2012), posted in Gift and Estate Matters, Marketability Discounts (DLOMs).

6	Prospects for a sale or public offering of the company
7	Number of identifiable buyers
8	Attributes of controlling shareholder(s), if any
9	Availability of access to information or reliability of that information
10	Management
11	Earnings levels
12	Revenue levels
13	Book to market ratios
14	Information requirements
15	Ownership concentration effects
16	Financial condition
17	Percent of shares held by insiders
18	Percent of shares held by institutions
19	Percent of independent directors
20	Listing on a major exchange
21	Active versus passive investors
22	Registration costs
23	Availability of hedging opportunities
24	Market capitalization rank
25	Business risk

	Subject Interest Factors per IRS DLOM Job Aid
1	Restrictive transfer provisions
2	Length of the restriction period
3	Level of expected holding period
4	Offering size a % of total shares outstanding
5	Registered versus unregistered
6	General economic conditions
7	Prevailing stock market conditions
8	Volatility of stock

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