



# Valuation – the issue of illiquidity

A qualitative retake on illiquidity discounts in the context of private company valuation on the Swedish market

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## **Abstract**

A private company lacks a direct observable market value and several situations may require a practitioner to compute the value of a private company. Since most of the valuation methods in use are based on data derived from the public stock markets certain adjustments may be appropriate when valuing a private company. Marketability and liquidity is said to be one of the more observable differences between a public and a private company. This implies that the shares in a private company have a lack of marketability and liquidity in comparison to the shares in a public company, which practitioners may have to adjust for.

Several quantitative studies are conducted on the subject in order to reassure price differences between public and private companies, namely a private company discount (PCD). Furthermore, several quantitative studies strive to establish a general and standardized cost for lack of marketability (liquidity) expressed as the illiquidity discount or the discount for lack of marketability (DLOM). These studies have different perceptions and use different hypothesis to identify illiquidity, which in turn will lead to a large span of different discounts. Essentially, earlier research examines assets marketability and liquidity with the assumption of them being equal in all other aspects. Professional practitioners constantly seek guidance in these studies to justify their estimated and applied illiquidity discount/DLOM when performing a valuation on a privately held company. Furthermore, we have also observed survey-studies adopting a more qualitative method in order to appreciate the level of discounts applied in a valuation by professional practitioners.

Consequently, this sea of studies provides the practitioner with a discount that ranges from 5% to 60% to take a stand on. The impossibility to determine the most adequate theory contributes to the inconsistency of how this issue is handled in reality by market participants and courts. In our study we first provide the reader with a rigorous literature study, which describes earlier research on the subject of illiquidity discount/DLOM. We conclude that research has gone one step too far when conducting all of these quantitative studies. This is why we conduct our own empirical data through semi-structured in-depth interviews with professional valuation experts on the Swedish market. This makes our approach a retake on the issue in order to generate suggestions to further studies.

What we find is that all of the independent consultants, primarily, does not apply a discount when valuing a majority interest due to the paradigm on the Swedish market. In contrast, the private equity fund manager, which only acquires majority interest, can use this type of discounts in their dependent valuation of majority interests. However, when valuing a minority interest the independent valuation consultants use quantitative empirical studies to derive a starting point of the discount. The level of the discount is then estimated upon the purpose of the valuation and firm-specific variables, which all of the participant's states to be the most important ones when estimating a illiquidity discount/DLOM. Based on these results we argue that one should be very careful when taking guidelines from quantitative empirical studies. Our interpretation is that the level of illiquidity/DLOM applicable depends on the level of attractiveness, which in turn has a bearing on all firm-specific variables. When it comes to applying the appropriate discount all of the participants argue in favor for a discount-on-value and not as some research suggest; a risk premium added to the discount rate.

We also generate adequate suggestions to further studies based on these interviews. Since courts and in particular the Swedish tax-court is inconsistent when approving or rejecting illiquidity discounts/DLOM we suggest legal actions on the issue. Furthermore we suggest a survey-like study in order to catch consensus take on how to estimate the level of discount. In fact, this can be done every year in a similar way as PwC's market risk premium study is conducted.

## **Acknowledgments**

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# 1. Introduction

In the business community situations might occur where professionals are assigned to estimate and communicate the value of a private company. Corporate transactions, disputes, tax-purposes, accounting issues and internal value discussions are all examples of such a situation. The practitioners could either be independent or dependent in their valuations. Independent when the task is to find a market value from a neutral perspective or dependent when representing the client's interest, in for example a transaction. In a simplified and general manner there are two types of values when working with business valuation (e.g. equity valuation), investment value and market value. The disparity between estimated market value and investment value is the various types of synergies accessible for only one, or a small group of specific investor(s). Bernström (2014, p. 9) refers to market value as an umbrella term for fair value and fair market value. The common framework of these terms is to describe the value from a *neutral* perspective. If for example the same types of companies exist on the stock-exchange (i.e. the same branch, same size and structure) this "*instant and current valuation*" (i.e. the price) set by the market as a whole can be of use when valuing a private company. Exchange-listed peers (i.e. counterparts on the stock exchange) can be deemed as a good benchmark for a market value through various methods. One distinguished factor between listed peers and the private company is marketability and thereof liquidity.

The proposition that liquidity matters when referring to an asset, like for example a company's shares, is widely accepted. Acquirers will pay more for a liquid asset compared to an otherwise less liquid one, all else being equal. This can in turn affect the derived market value of a private company. It is rational to think that the easier it is to convert your asset to cash, the more the asset is worth to a potential buyer. The owner of a liquid asset can, whenever decided in the future, turn the value of the asset into cash by selling the asset to a willing buyer. (Damodaran, 2012, pp. 683–684)

For an asset, liquidity can be measured on how frequent transactions appear, how many times a buyer and a seller interacts and a deal is completed, both in total money volume and number of completed transactions. To simplify the reasoning for the importance of liquidity one can describe the cost of illiquidity as the implicit transaction cost. Liquidity on a marketplace will provide both the seller and the acquirer with the possibility to sell and buy the asset to the current market value. One should also remember that the importance of liquidity in an asset varies depending on the underlying reason for the acquirer's intention with the purchase or the sellers divesting reasons. Liquidity will be a higher valued factor for an acquirer that has the intention to sell the purchased asset in a near future compared to a buyer with the intent to hold the asset during a longer time horizon. (Damodaran, 2012, p. 659)

When a public company's share lacks liquidity in the market due to low turnover (market turnover) and demand the shareholder that is looking to sell may have to reduce the price to meet the potential buyer and convert the shares into cash. This "transaction cost" is then due to illiquidity in the share. A share with low turnover will be defined as less liquid than a share with high turnover and high demand. This means that under perfect market conditions (e.g. low bid-ask spreads), which are to some extent provided by liquidity, a transaction will be executed at a market value. In the context of equity interest, a stock exchange is the nearest a perfect market condition we get.

**Unfortunately**, even on the stock exchange some stocks can fail to provide these conditions. This leaves the conclusion that a nonmarketable equity interest (i.e. private company equity interest) that in turn has fewer potential buyers than a publicly traded company bears higher implicit transaction costs due to lack of liquidity on the marketplace.

A private company misses a direct observable market value, thus the practitioners role is to create one. In general they're several more or less similar definitions of "market value". IFRS refers to market value as; *the price that would be received to sell an asset or paid to transfer a liability in an orderly transactions between market participants at the measurement date*" (FAR Akademi, 2014, p. 297). Higher liquidity on the marketplace will give you a higher quality of the observable "market value". As discussed, a private company's lower demand on the market due to the lack of potential buyers can affect *the price that would be received to sell an asset*. Therefore an adjustment for illiquidity to the final value could be reasonable in order to communicate the market value of the shares. In the context of equity interests, this is said to be one of the more complex problems professionals stand before when performing a valuation of a privately held company (i.e. nonmarketable equity interest). (Damodaran, 2012, p.684)

## **1.1 Problem discussion**

Our interest for finance and investing in shares on the stock exchange in particular have made us think about marketability and implicit liquidity as an important factor when evaluating investment opportunities. As discussed above one would want to be able to buy a share and not pay more than the estimated market value due to divergence in bid and ask price. Also, divest in a share later on and not be forced to sell at substantial lower price than expected due to large divergence in bid and ask price. It is clear that the level of liquidity is driving these differences in bid and ask prices, making a frequently traded share more liquid and leaving the bid-ask spread (as a percentage of asset value) on a lower level than those shares being less frequently traded or even not traded at all (i.e. unlisted private company). When examining a public market, such as the stock exchange: Nasdaq OMX Stockholm, one can easily see liquidity differences in terms of shares being turned over and bid-ask spreads. Less liquid shares have higher bid-ask spreads and do in fact bear higher implicit transactions costs. Consequently, frequently traded stocks have low cost of illiquidity while a less frequently traded stock has higher costs of illiquidity. Then, what about private companies whose stocks is not publicly traded? Analogues, due to the illiquidity of these nonmarketable equity interests the transaction cost would escalate. What adjustments must professionals make in their calculations in order to communicate the market value of a private company given the shares level of marketability and thereof liquidity? This is an extraordinary complex problem that can have a significant impact on the derived value of a privately held company (Bernström, 2014, p. 9).

On the basis that private companies is acquired at a discount compared to its publicly traded counterparts; what factors is driving this discount? One can be sure that illiquidity is a prominent factor when looking at empirical research which will be presented in the referential framework of this study. A lot of legit authors such as Koeplin, Sarin, & Shapiro (2000); Bajaj, Dennis, Ferris & Sarin (2001); Kooli, Kortas & L'Her (2003); Block (2007) and Elnathan, Gavius, & Hauser (2010) has been conducting this kind of empirical studies, which will be presented. Due to the fact that



few research and studies has been conducted on the Swedish market we'd like to, in this study provide an insight on how far the work has come to recognize the *private company discount* (PCD) and the *illiquidity discount/discount for lack of marketability* (DLOM). The problem that earlier studies tend to confront is in the attempt of trying to provide a standardized and general quantified cost for illiquidity (as a percentage of asset value or risk premiums on discount rate) hence, the illiquidity discount (DLOM). Many different approaches are in use and conclusions seem to be widely spread out, leaving a discount range from 5% to 60% for professionals within valuation to take a stand on. Practitioners are thus faced with an estimation problem (Damodaran, 2012, p. 685). KPMG Corporate Finance has announced for assistance to solve the practical problem associated with the issue of illiquidity (KPMG AB, 2014). This is further evidence of the practical problem and the topical importance of illiquidity in the context of valuation.

We ask how this subject is discussed between valuation practitioners on the Swedish market when deriving the value of a private company. Is this type of discount always to consider or does the purpose of the valuation matter? Practitioners could be either independent or dependent in the valuation. Does this affect how DLOM is addressed? (Elnathan, Gavius, & Hauser, 2010, pp. 388-389) The valuation subject could either be a minority interest or a majority interest. The reasons to apply a DLOM for controlling interests may be different from the factors affecting DLOM for minority interests (Pratt, 2009, p. 399). If one decides that a discount is applicable, from where do one start the estimation process? Numerous studies have been conducted throughout the years with the purpose of providing guidance to practitioners, but how do practitioners navigate in this sea of empirical studies and how do practitioners decide which hypothesis and conclusion to rely on? Can these studies be of use in order to generate arguments and motivations in favor to the applied discount? How much is DLOM a question of a case-by-case analysis (Bernström, 2014, p. 14)?

A valuation is based on assumptions and appraisals and there is no absolute certainty. Correspondingly, a DLOM follows the same track. How well worked is the analysis regarding DLOM in reality? This is important to address as the applied discount can affect the final value substantially (Bernström, 2014, p. 9) Can a practitioner use a generalized and standardized discount or do firm-specific variables and market conditions affect the applicable level of DLOM? "*It is amazing how many so-called experts throw out a number with little or no analysis*" according to Pratt (2009 pp. 399-400).

Depending on the choice of valuation method, where in the calculation do practitioners apply the discount making it reflect the given level of illiquidity? Is it a matter of discount-on-final-value or is it a firm-specific risk that might affect the discount rate in an income approach valuation? If for example a market approach valuation is favorable when deriving the market value of a nonmarketable equity interest (i.e. private company), do we need to adjust the value of the private company due to the lack of liquidity because the derived multiples from the listed peers are in fact marketable and thereof liquid? The problem is not the existence of illiquidity; the problem is how to handle it (Damodaran, 2012, p. 684).

### 1.1.1 Problem formulation

According to our problem discussion the gap we see today is the ignorance on *how valuation experts assess and handle the issue of illiquidity and the use of a DLOM when deriving the value of a private business. In turn, the disparity between reality and science.* This problem formulation will lead on to the formulation of questions in the purpose of this study.

## 1.2 Purpose

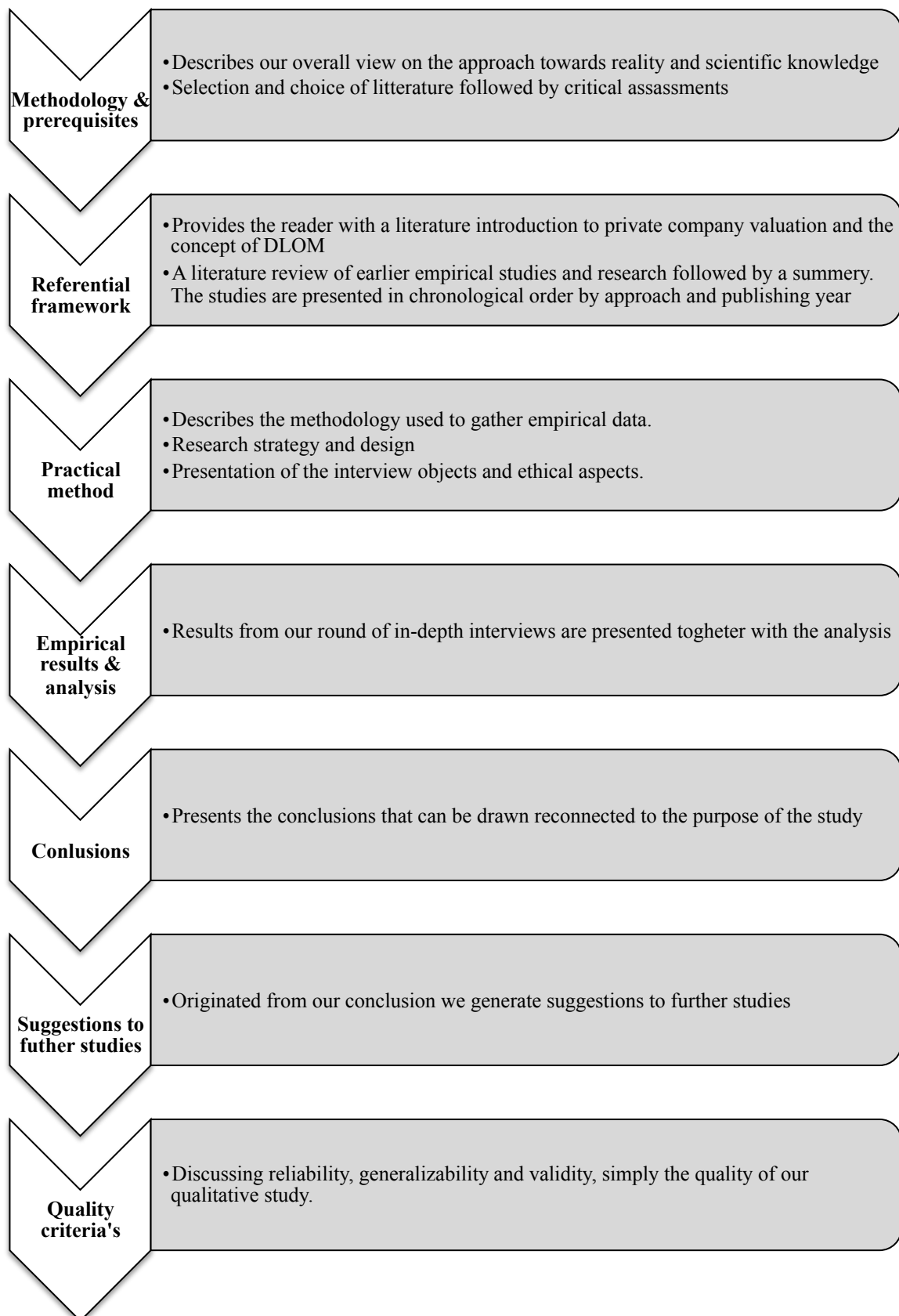
Our purpose with this study is to examine how practitioners handle the issue of DLOM. Also, as a first step address how far research has come to determine adjustments for illiquidity in the valuations of nonmarketable equity interests (i.e. private companies). The approach of this study will be to *summarize* earlier studies on the subject and identify the most distinguished ways of computing the DLOM. Then by conducting interviews based on these studies our contribution to the research area will be to *examine* how practitioners within business valuation on the Swedish market assess the lack of liquidity and how the illiquidity question is taken into consideration.

By conducting information about how professionals take marketability and thereof illiquidity into account this study will also aim to present what these methods and approaches presented in earlier studies actually provide practitioners with. We aim to generate suggestions to how future studies should tackle the subject in order to come closer of being able to identify and quantify the level of DLOM in the valuation process of private companies. Consequently, strive to provide *guidelines* to professional valuation experts in their daily work.

To sum up, the conclusions of the study should, if carried out correctly, provide answers to the following questions:

- *How do practitioners use guidelines provided by empirical studies?*
- *When do practitioners consider a DLOM?*
- *How do practitioners estimate a DLOM?*
- *Where in the calculation do practitioners apply a DLOM?*
- *How do practitioners justify and motivate the applied DLOM?*

## 1.3 Disposition



## 2. Methodology & Prerequisites

*This chapter describes our perspective towards reality and scientific research. We will go through our approach towards how we design the study and explain the overall research strategy. Furthermore we describe the way we collect scientific literature addressing our problem followed up by critical assessments to this selection.*

### 2.1 Ontology

Ontology is the science that concerns the **nature of reality** (Saunders et al., 2012, p. 130). Ontology addresses the researcher's assumptions and perceptions about how *the world operates* and the commitment one has towards a particular view. Saunders et al. (2012, p. 130) describes two aspects of ontology, which business and management researchers refer to. The first aspect discussed is **objectivism**. Objectivism refers to that something exists with a meaningful purpose independent of us as social actors. In an objective stance one could say that we find knowledge and fact instead of creating it through social experiences (Saunders et al., 2012, p. 131). In an objective standpoint the purpose would be to understand how things work in reality and not, as in our case, why a valuation is conducted as it is (Schwandt, 2000, p. 197). The second aspect, **subjectivism**, says that something is created by our perceptions and consequences. To study something from a subjective perspective the details of the situation is of most importance to understand what is happening or the reality behind what is happening. Subjectivism is often associated with, or referred to, the term constructionism, or **social constructionism**, which views reality as being socially constructionism. (Saunders et al., 2012, p. 131)

When studying company valuation *one might prefer to view the **objective** aspects of a valuation*. Valuation methods and values derived from the stock market is objective in their manner. On the other hand the studies trying to quantify a DLOM are **subjective** in their fashion since the authors choose what data and methods that will lay the foundation to their estimation process. In this study we're working towards building an understanding as to **how** and **why** practitioners accomplish a valuation in the way they do. Furthermore, we build our questionnaires and referential framework on studies that we choose ourselves. **This will argue for a subjective, social constructionist, approach in our study.**

We will conduct our study based on research built upon objective data, but computed subjectively. We want to understand **how** a DLOM is estimated during a valuation. Furthermore **why** the valuation is conducted in the way it is. We have a subjective approach, which is defined as social constructionism. (Saunders et al., 2012, p. 131)

### 2.2 Epistemology

According to Saunders et al. (2012, p.134), epistemology concerns what is acceptable knowledge in the field of study. He discusses two types of researchers, the "resource" researcher and the "feelings" researcher. We see ourselves more like the "feelings" researcher, as Saunders et al., expresses it. We place concerns in valuation expert feelings and attitudes towards issues of valuing a privately held firm and the DLOM question in particular (Saunders et al., 2012, p. 134). In regard to our gap and problem discussion we share the interpretivism (hermeneutic) philosophy as explained by Saunders et al. We motivate this by the fact that we strive to provide a rich insight into

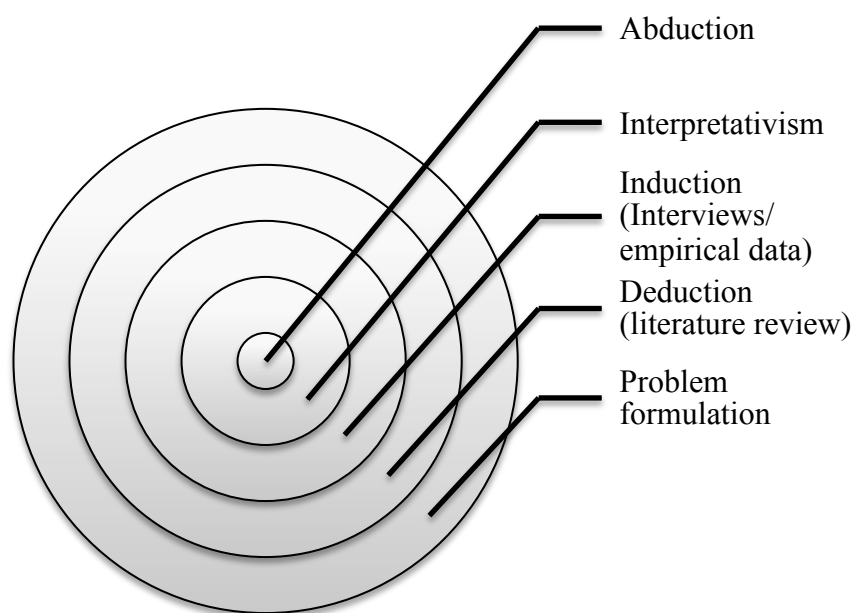
the fairly complex world of business valuation. We are not to generalize our results, but instead give the reader and ourselves an in depth insight to the theory behind the DLOM and how practitioners handle the issue in reality, not in theory. (Saunders et al., 2012, p.137)

From our point of view DLOM presented in a narrative way and with a qualitative approach deserves as much authority as an “objective” research presented in a statistical form by the “resource” researcher. This is primarily the case in earlier studies on the subject of DLOM. (Saunders et al., 2012, pp. 132-134)

## 2.3 Research methodology

In the first part of our referential framework we summarize earlier empirical evidence on DLOM, which is typical for a deductive approach. Since these studies rely on quantitative empirical data, primarily from the stock-exchange and databases collecting information regarding private company transactions, the nature of these studies is objective, but conducted subjectively. As we choose the most relevant ones for our study, the selection will be subjective. In the very ground foundation of these studies trying to come up with “the right way” of quantifying DLOM these studies hypothesis are also subjective. Different methods are in use and the data is collected in different timespans. When we present these studies throughout our referential framework we have a **deductive approach**. Later on when connecting this to our interview results, interpreting, analyzing and drawing conclusions we have an **inductive approach**. This type of research methodology Saunders et al. (2012, p. 144), explains as **abduction**. Saunders states that; “*Abduction strives to explain patterns and by collecting data generate a new or modify an existing theory*” (Saunders et al., 2012, p. 145). We are not to create a new theory, but instead provide an in-depth insight and a new comprehension, which agrees with the purpose of our study.

A brief summary regarding our research design is displayed in figure 2.1.



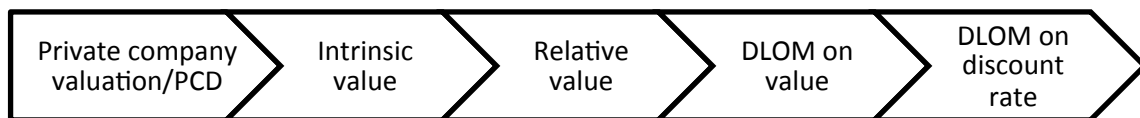
**Figure 2.1 Research onion**

## 2.4 Literary search

Our literature review aims to conduct the most prominent research on DLOM in the context of a private company valuation. Naturally we strive to present what type of research and knowledge that already exists on the subject and how far research has come until today.

In order to assure that we find the most current and valid literature and research on the area we signed up for a course in how to use Zotero<sup>1</sup> and how to get the most out of a database search. Also we scheduled an appointment for one hour with a librarian at *Umeå University Library* in order to gain knowledge and suggestions on how to find the most prominent research done by legit authors.

After planning and preparing for the literature research we started by searching for articles concerning *private company valuation* and *PCD*. After that we scaled down towards more specific categories of valuation, displayed in figure 2.2. This way helped us with limiting our framework for the search of literature that discusses discounts in the valuation process.



**Figure 2.2 Starting point of literary search**

The different databases we used to search for articles were *Business source premier* and *Google scholar*. Legitimacy was double-checked in *Scopus* and *Ulrichsweb*.

Business source premier and Google scholar were the search engines primarily used when searching for articles. When searching for a specific word, such as; *liquidity* or any other word mentioned below separately, the search results was unmanageable in the aspect of being far too broad. Using clever features in the databases one can limit the research by for example limiting to **peer reviewed** articles only, using multiple search words divided into **all-text**<sup>2</sup> or **title** and sort articles based on relevance and date. After finding studies in the databases we read the abstract to sort out irrelevant studies for us and also draw inspiration for additional search words.

Our total list of search words was as follows:

- Private company valuation
- Liquidity
- Illiquidity
- Illiquidity discount

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<sup>1</sup> Zotero is a research and reference management software program.

<sup>2</sup> This feature searches for the word through all text.

- PCD, Private company discount
- DLOM, Discount for lack of marketability
- Marketability
- Intrinsic value
- Market value
- DCF
- Relative valuation
- Market approach
- Control premium
- Premium
- Discount
- Mergers & Acquisitions
- Private
- Privately held company

As mentioned above we used multiple search words in order to limit the results in our search. By only using *private company discount*, limited to **peer reviewed** and **all-text**, we had approximately 30,000 hits. By adding a second search word, *DLOM* the results came down to 9 hits. This only one example of how we used these types of tools to limit our search results.

After finding a good base of studies to work through we had approximately 30 different studies. We then needed to limit our framework to a reasonable amount of studies. By using the **Scopus** database we could search for the author to find out if he or she was well cited, what university (if any) the research was carried out on and if the author had published other relevant studies. The articles found at Google scholar is not always ensured to be peer reviewed so for those studies taken from scholar we used **Ulrichsweb** to search for the journal and publisher. Famous publishers such as *John Wiley & Son*, *McGraw-Hill* and *Blackwell* are often more professionally directed then for example *Bonnier* that are directed towards fictional literature. Ulrichsweb were also used on the articles found at Business source premier in order to double-check the legitimacy of the publisher.

After having sorted out the articles that we recognized as not reviewed enough we read through the ones we had left. We choose about a dozen that we would add in our referential framework and later on use as a solid foundation to establish our interview guide.

Furthermore we used several different books addressing financial valuation. These books are primarily student and specialist literature. We use these books as reliance when addressing more advanced financial concepts to ensure legitimacy.

During our methodological review we seek guidance from primarily student literature and books that were recommended by our study advisor. Some of these books are used more frequent in the methodological prerequisite and other was used to shape the interview guide and assist when processing the collected data.

## 2.5 Critical assessment

Consistently through our literature research we've strived towards being critical when considering what articles, research studies and literature we want to use. Both Scopus and Ulrichsweb as earlier mentioned contributed assistance when reviewing authors and publishers of research papers. This is a way to further strengthen the legitimacy of the research that will be used in the referential framework. By taking assistance from a librarian and from our tutor we found acknowledged literature towards conducting a qualitative study. Also the seminar about Zotero and database search helped us when reviewing articles and research studies.

In parts of the referential framework we had to refer to research studies and articles in second-hand due to the fact that Umeå University Library didn't allow access to these studies through their databases. These studies are *The Emory pre-IPO Studies* by John D. Emory and *Willamette Management Associate pre-IPO studies* by Willamette Management Associates (WMA). According to our thesis manual *second-hand references should be avoided as far as possible due to quality reasons. There is always a risk for the original source to be misrepresented. The thesis manual does argue for situations where a second-hand reference might be suited, for example if a book isn't available or if it's written in another language.* ("Uppsatsmanual - Umeå universitet," 2014, p. 35) **In our case** the original article wasn't available through the university databases and we had to use Reilly & Rotkowski's article and Pratt's book *Business valuation: discounts and premiums* to gain access. Although we argue for the legitimacy of Reilly and Rotkowskis, both well cited and represented in the area. Another second-hand reference is the study of *Quantitative marketability discount model (QMDM)* written by Z. Christopher Mercer, which we refer to through Hitchner's book *Financial valuation: applications and models*. Hitchner is a well cited author on the area which we have reviewed through Scopus.

As explained above we have consistently seek *peer reviewed* articles, this is however not any certainty of the level of legitimacy in these articles. To further emphasize this we expanded our selection criteria by using *Ulrichsweb* and *Scopus* as a second bar to pass. *Ulrichsweb* provide us with information regarding the publisher. *Scopus* gave us the possibility to critically seek information about the authors of the articles, relevant background and prior published studies.

## 2.6 Timeframe

It is important for us to communicate the timeframe of this study. A bachelor thesis is 15 ECTS credits on basic level and approximately 8 weeks of fulltime studies. The deeper we dug into this subject the more we learned. New perspectives and ideas were constantly evolving during the process of computing the study. One cannot exclude that a longer timeframe would have yielded even more angles of incidence. After all, eight weeks can be seen as quite a small timetable. As we, the authors, developed a serious interest for the subject we put down a lot of hard work in order to study the subject thoroughly. In order to work goal-orientated and being able to set deadlines for different chapters we therefore made a timeframe. Down below in table 2.1 our planned timeframe is displayed.



	Weeks 2014							
	45	46	47	48	49	50	51	52
Subject	✓							
Literature review	✓							
Background/disposition	✓							
Methodology		✓						
Referential framework		✓	✓					
Empirical study				✓	✓			
Results & Analysis						✓		
Conclusions						✓		

**Table 2.1 Planned thesis timeframe**

After having started the research we became aware of that the set timeframe wouldn't work out perfectly. We always proceeded from the planned timeframe but after having completed the study we could see that we had followed a schedule more similar to what is shown in figure 2.2.

	Weeks 2014							
	45	46	47	48	49	50	51	52
Subject	✓							
Literature review	✓	✓	✓					
Background/disposition	✓							
Prerequisites		✓						
Referential framework		✓	✓		✓			
Empirical study				✓	✓			
Methodology						✓		
Results & Analysis					✓	✓		
Conclusions						✓	✓	

**Table 2.2 Actual thesis timeframe**

## 2.7 Demarcation of theory

As explained in chapter 2.6 *Timeframe* we have limited resources in this study. The theories we present in chapter 3 *Referential framework* will have foundation in both literature and scientific studies. The first part, which examines general concepts of valuation and illiquidity, is limited to specialist literature and student literature. The literature study in the second part focus on scientific studies trying to quantify, hence the second part is limited to quantitative studies on illiquidity discounts/DLOM. The third part of our referential framework and the second part of our literature study strives to examine earlier studies adopting a more qualitative approach of how the issue of illiquidity discount/DLOM is handled in reality. These demarcations are made to answer our problem discussion and the first part of the purpose; to *summarize* and *examine* how far research has come to recognize the issues of illiquidity in the context of private company valuation.

### 3. Referential framework

*First an introduction to the most common methods in use to value privately held firms are given, also, the different levels of value this can result in as well as an explanation to the concept of premiums and discounts. These are given to the reader in order to be more responsive when in the second part discussing theories supporting a DLOM and how they may be applicable. In the third part, a summery will link together the conclusions made in different studies and methods quantifying a DLOM. The fourth part will examine the aspects of existing literature and empirical evidence on how practitioners handle DLOM. The second, third and fourth part is presented as a literature study and does not follow the traditional way of a thesis.*

#### 3.1 Private company valuation

When an expert employs a valuation of a private company there are mainly three different approaches in use; *the market approach, the income approach and the asset based approach*. (Pinto, 2010, p. 360; Bernström, 2014, pp. 5–7; Reilly & Rotkowski, 2007, p. 243) A common misinterpretation is that these three approaches should, and will, yield three different outcome values when applied to the same valuation subject by the same analyst and under the same valuation purpose. This is not true. If a business valuation is carried out correctly these three models should yield the exact same output. “*Company value is driven by company fundamentals, not by the choice of valuation model(s)*”. (Bernström, 2014, p. 5) These three approaches will briefly be described to give the reader an introduction to a valuation process, which is essential to understand the concept of illiquidity discounts also *when* and *how* it may be applied.

##### 3.1.1 Market approach

An analyst using the market approach is interested in how similar firms to the valuation object are priced on the stock exchange or through company transactions (e.g. acquisitions). The goal is to form a *peer group* of comparable firms with as similar operation and structure as possible to the valuation subject. The task will be to find price-related indicators (e.g. valuations multiples) such as price paid (i.e. the value of equity) or enterprise value (i.e. the value of equity plus net debt) in relation to earnings (P/E, EV/EBIT), sales (EV/SALES), assets (P/B, EV/BV), etc. and apply to the valuation subject in question to derive the final value of the company. Differences between the firms, such as size, business risk, profitability and future growth potential, among other things, must be considered when justifying and applying the appropriate valuation multiple to the valuation subject in question. (Bernström, 2014, p. 6)

##### 3.1.2 Income approach

The income approach aims to value an asset (e.g. equity interest in a private company) by the net present value of the income expected from it. There are several different methods within the income approach. (Pinto, 2010, p. 360) One of the most general and accepted methods is the discounted cash flow (DCF) approach. The net present value of the business enterprise will be given by all its future expected cash flows, discounted by an appropriate risk-adjusted rate of return. The analyst can either start from the basis of *free cash flow to firm* (FCFF) or *free cash flow to equity* (FCFE). The difference between these two *cash flows* is that FCFF originate to both shareholders and lenders and FCFE is only attributed to the shareholders. To obtain the value of equity (i.e. the value of the shares) the outcome value from the basis of FCFF needs to be adjusted by

the net debt in the valuation subject (e.g. the company) on the valuation date. However, a DCF based on FCFE will provide us with the value of the shares instantaneously without any adjustments. (Bernström, 2014, pp. 5–6)

### 3.1.3 Asset-based approach

This approach is based on the underlying value of the company assets less the value of its liabilities, sometimes also referred to as the *net asset approach*. This approach aims to adjust the balance sheet values to the market value of the assets and liabilities. Consequently there are two ways of doing this. One is to find price indicators of similar asset on the market. For example you may be able to derive the price of a real estate from similar transactions in the neighborhood based on price per square foot, but this is not always possible. For a machine in an industrial company this may nearly be impossible since there is no open market for such niche machines. The second way is to use a DCF model under a *going concern assumption* for every cash-generating asset in the company. By using this approach you will capture synergies among assets and values that are only attributed to the specific company. This is often required to calculate the value of an asset when the company is the only one who can benefit from the asset. Some machines for example are specialized for the company in question. This implies that a fully executed *net asset approach* based on several DCF models will equal the derived value from the *income approach* and the *DCF-model described above* in particular. (Bernström, 2014, pp. 6–7)

## 3.2 Marketability & Liquidity

So far we have not made any distinction between *marketability* and *liquidity* even though different dictionaries can describe these terms in various ways. In general, *marketability* refers to the right to sell something (if the asset has a ready market) and *liquidity* how fast we can convert the asset into cash without a loss in value (i.e. accepting a lower price to meet the buyer's terms). (Pratt, 2009, p. 7) Consequently, a nonmarketable asset is thereof illiquid and vice versa, but an asset can also be marketable and illiquid at the same time, making it "*marketable illiquid*". In table 3.1 follows some easy examples:

Asset	Level of marketability	Level of liquidity
Publicly traded stock	High	High
Controlling equity interest	Medium	Low
Minority equity interest	Low	Low
Real Estate	Medium	Low
Machinery & Equipment	Medium	Low

**Table 3.1 Levels of marketability & liquidity developed by the authors in regard to Hitchner (2011, p. 369)**

Controlling interests, real estate, machinery & equipment falls under the term *marketable illiquid*. A publicly traded stock is considered *marketable* and thereof *liquid*. Minority interests are considered *nonmarketable* and thereof *illiquid*. To make an easy

example, one could argue that for example the real estate market is somewhat marketable (i.e. has a ready market) but that it takes long time and effort and often some costs to convert a real estate into cash on the bank account. The real estate market is thereof marketable but has a lack of liquidity (i.e. one cannot, in just a few days, convert the asset into cash). A hot industry where many acquisitions have taken place lately can also be assumed to have some level of marketability but a lack of liquidity due to costs and time spent to close a deal (i.e. flotation costs). (Hitchner, 2011, pp. 368–369)

Even though the literature is somewhat bisectional in this manner, an expert valuing a privately held firm will rarely communicate two different discount and separate *marketability* and *liquidity*, therefore the terms; *discount for lack of marketability* (DLOM) and *illiquidity discount* tend to be used interchangeably. (Pratt, 2009, p. 7) We will in the remainder of this paper also use these terms interchangeably.

### 3.3 The concepts of premiums & discounts

Even though premiums and discounts are two different fundamental tools available for analysts when valuing a privately held company one must understand the complexity and see the whole picture and the connection between premium and discounts. The discounts reduce the value of the interest in a privately held company and premiums increase the value of the interest in a privately held company. Premiums and discounts aims to make adjustments from some base value to reflect differences between, for example, a private and public company, synergies, control or marketability. (Hitchner, 2011, p. 365)

The most common valuation discounts and premiums come from the basic concepts of *control* and *marketability*. In a valuation analysis, the control factor is often considered before the degree of marketability because; *the degree of control or lack of it has a bearing on both the size of the DLOM and the procedure that are appropriate to quantify the DLOM* (Pratt, 2009, p. 5). In regards to our purpose with this thesis, we will focus on the DLOM as one of the factors explaining the PCD. In general there are two categories of discounts. Those discounts that affect all shareholders (entity level) and those that affect one or a small group of shareholder (shareholder level) like a minority interest. (Pratt, 2009, pp. 2–3)

Often discounts are applied individually towards the end of the valuation process as a percentage rate of the value. On the other hand one could also reflect the DLOM as an adjustment of the discount rate in for example a DCF model, or as a percentage of the derived multiple. If this approach is used it is generally a part of the *firm-specific risk adjustments*, which does not correspond with the characteristics of the base group from which the derived value are based. (Pratt, 2009, p. 2)

Expanding the reasoning of DLOM and thereof illiquidity discount to reflect either a minority interest or majority interests. One could set the *marketability* and *liquidity* of a minority interest in a privately held company in comparison with actively traded public stocks, which can be sold more or less instantaneously, converting the asset to pure cash within a few days. This implies that there is almost never a questionable doubt that a DLOM is appropriate for minority interest in a privately held company due to the lack of a ready market and thereof lack of liquidity. Also, the lack of control makes it far less attractive to acquirers. A majority interests in a privately held company is far less *marketable* and *liquid* than an actively traded stock but not as *nonmarketable* and

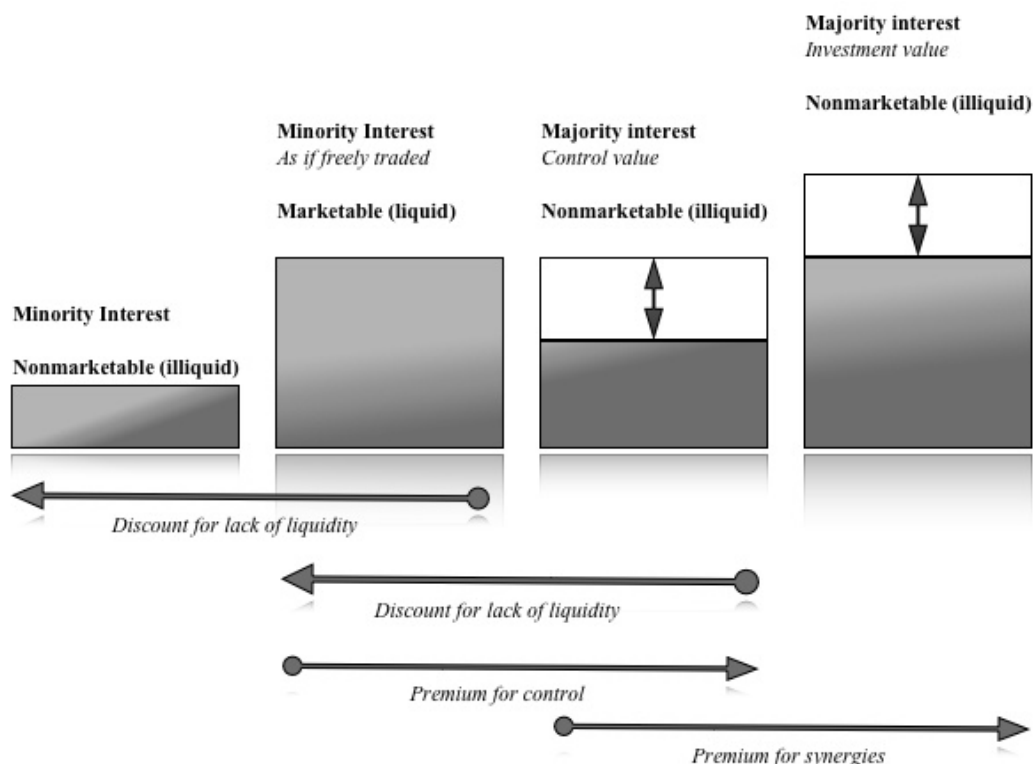
thereof *illiquid* as a minority interest in a privately held company as the control factor makes it much more attractive for acquirers. According to Pratt there are currently no benchmarks against *marketability* and thereof *liquidity* for a controlling interest. (Pratt, 2009, pp. 6–7)

In a *level of value* perspective, the discount for illiquidity in a majority interest may be equal to the premium for control, resulting in a zero net effect, if the practitioner were to adjust for both aspects. Based on this, some consider it to be inappropriate trying to classify and quantify a DLOM for a controlling interest (Pratt, 2009, p. 6-7). However as Bernström (2014, p. 15) addresses it; *“it may be the case, but not in any way have to be so, that the discount charged for illiquidity proves equal to the premium applied for control.”*

Taking it even further, one can argue just as the U.S. Tax Court does regarding DLOM for controlling interests (i.e. majority equity interests); *“Even controlling shares in a nonpublic corporation suffer from lack of marketability because of the absence of a ready private placement market and the fact that flotation costs would have to be incurred if the corporation were to publicly offer its stock.”* (Pratt, 2009, p. 201)

### **3.3.1 Levels of value**

Based on the choice of valuation approach and method valuation experts must always keep track of from which the value is derived. Not just only to know from which value a discount (premium) may be deducted (added) but also for the valuation purpose overall. For example, when valuing a minority interest in a private company through the market approach, meaning, by the ways of how similar firms are priced on the stock exchange. The value will correspond with a marketable and thereof liquid minority interest (i.e. publicly traded stock). In order to move from this level of value to a nonmarketable and thereof less liquid (i.e. illiquid) minority interest the analyst needs to make adjustments and a DLOM may be appropriate. In reverse, when the purpose of the valuation is to value a majority interest (i.e. controlling interest) in the same company as above. The value derived from the market approach representing a marketable and liquid minority interest needs to be adjusted for *control* and *illiquidity*, thus a premium for *control* and a discount for *illiquidity* may be appropriate in order to move to a nonmarketable majority interest. (Bernström, 2014, pp. 13–18) Hitchner (2011, p. 367) reports the following levels of value as presented in figure 3.1



**Figure 3.1 Levels of value developed by the authors in regard to Hitchner (2011, p. 367)**

The highest value possible to be achieved is the *synergistic value* (i.e. investment value or acquisition value) that is only applicable to one or a small group of investors. The second highest value might be the standalone *control value*, that is a controlling interest without any synergies, or/and a marketable minority interest represents the market capitalization value (i.e. *as if freely traded* minority interest). In the bottom is the corresponding lower value, the nonmarketable minority interest. Recall from the introduction of this subchapter, **3.3.1 Levels of value**, when talking about a marketable minority interest as a base value from which an analyst adds premiums and discount to make the final value represent a higher or a lower level of value. (Hitchner, 2011, pp. 367–368) In reality it is not practical to use the nonmarketable minority interest as a base value to start with in, for example, a market approach valuation. The databases do not track these transactions so there is no direct empirical data leading to that level of value. (Pratt, 2009, p. 5)

The concept of premiums and discounts is to make adjustments from a base value. In our example the base value from which the value is derived represent the marketable minority interest (i.e. as if freely traded minority interest) this value corresponds with the second value from the left in figure 3.1. Depending on the valuation purpose an analyst may have to move right or left, from one value to another, adding discounts and/or premiums. (Pratt, 2009, p. 2) Thus, an analyst must keep track of and understand that different valuation approaches, methods and input can result in different levels of value before applying any premium and/or discount to the appropriate base value. (Pratt, 2009, p. 8)

### 3.4 Empirical evidence of DLOM

Several studies with different methodologies and approaches have been carried out trying to find empirical evidence of the existence of DLOM in order to provide quantitative guidelines to experts valuing a privately held firm. By reviewing existing studies and literature we've come to the conclusion that in the scope of DLOM for minority interests the *restricted stock approach* and *pre-IPO approach* are widely recognized between researchers and experts. (Pratt, 2009, p. 87) However, the literature mentions several other approaches as well. Hitchner (2011, p. 382) also refers to the *quantitative marketability discount model* (QMDM) and the *Option pricing model* as adequate methodologies in the estimation process. Another prominent researcher on the subject, Aswath Damodaran from NYU Stern School of Business, refers to the *restricted stock approach* or the *bid-ask spread approach* in his book; Investment Valuation: Tools and Techniques for Determining the Value of Any Asset (3<sup>rd</sup> edition), 2012. (Damodaran, 2012, p. 684) Furthermore, *the acquisition approach* is another way to capture the price difference between public and private companies. This provides empirical evidence that a private company is acquired at a discount compared to its public counterparts. (Koeplin, 2000, p. 94)

Even though a privately held company valuation is different in many aspects to a public company valuation, principles of discounts and premiums may also be applicable to public companies. Almost all data and evidence of DLOM derives from the public stock market in some way. Thus, an analyst estimating and applying a discount relies heavily on data conducted from the public market because that is the only place to observe illiquidity discount behaviors. Almost anyone have the opportunity to conduct information about public firm but this is not the case with private firms. Only fragments of price information are available about private company transactions when comparing with those public ones. Analysts and decision makers would rather have empirical evidence than just an opinion when a discount is estimated and subsequently applied to a valuation subject. (Pratt 2009, pp. 9-10) This explains from where these approaches evolve from.

The reader will now first briefly be introduced to the different approaches and studies. Then a summary describing differences and similarities will be given.

#### 3.4.1 The Restricted Stock approach

The restricted stock is one of the basic approaches used in existing studies to decide the appropriate size of the DLOM. Restricted stock refers to a stock that is held in a publicly owned company (sometimes named "letter stock"). The *restriction* in the stock refers for a certain period of time in which the stock cannot be sold (e.g. one or two years). In the U.S., restricted stocks appears in acquisitions or as an alternative to a new issue when raising capital due to the time and cost of registering the new stock with the U.S. Security Exchange Commission (SEC) (Pratt, Reilly, & Schweihs, 2000, p. 422)

Company A, for example have freely trading public stocks valued at \$20 per share on the market and a non-freely traded restricted stock outstanding at the same time. Let's suppose the restricted stock is acquired at the value of \$16 per share. The price difference between the two would represent the discount for illiquidity according to the hypothesis. When a researcher looks at hundreds of such studies over a given time period, an average discount can be determined and applied to a non-publicly traded

company to estimate their adjusted value. With time, the estimated discount conducted from restricted-stock studies has declined. The explanation to the decline in the discount comes from changes made affecting restricted stocks, namely *SEC rule 144* (which specifies the conditions for how the restricted stock should be held). First major change to this rule allowed institutional investors to trade unregistered securities between themselves without having to file a registration statement. This resulted in the restricted stocks becoming more marketable and reduced the discount for illiquidity. Another modification to the now-called Rule 144A occurred in April 1997 when the SEC changed the minimum required holding period for a restricted stock from two years to one year. Once again, this reduced the conducted discount for illiquidity. (Block, 2007, p. 31)

Throughout the years a large number studies have been conducted using this approach, starting from the 1970's. Down below we will in this thesis present two of the more cited studies made on the restricted stock approach. One conducted in 2001 by Mukesh Bajaj, David J Denis, Stephen Ferris and Atulya Sarin. Another more modern study was made by Robert Comment in 2012, written with a more skeptical approach. The utility of restricted stock studies has faced criticism due to the fact that investors in restricted stocks often are institutional investors whose time horizon often is long and therefore the need for a liquid stock is small. Another thing that has been criticized is that only a part of the overall discount in a private placement of restricted stocks represents the marketability discount. (Block, 2007, p. 34)

#### **3.4.1.1 Bajaj Study**

Bajaj et al. (2001) provided some new evidence regarding the restricted stock approach in their study *Firm Value and Marketability Discount*. First they summarized earlier empirical studies and limitations associated with those earlier techniques. Secondly they draw inspiration from these studies using restricted stocks and private placement announcements respectively. The purpose was to provide useful results and guidelines for the valuation of nonmarketable interests (i.e. privately held companies) (Bajaj et al., 2001, pp. 2–3). They reduced their first sample of observations from the electronic database of Securities Data Corporation (SDC) by deducting transactions related to announcements represented by multiple news articles describing the same transaction and when there was no pure equity transaction. Also, all observations regarding foreign firms were deducted due to accounting and price data availability. The final sample consisted of 88 observations between 1 January 1990 and 31 December 1995. 46 of those took place in 1992 and 1993. The authors describe this circumstance to firm-specific and macroeconomic factors<sup>3</sup>; referring to that this is also the case in previous findings. Stock prices and trading volume were obtained from the Center for Research in Security Prices (CRSP). Accounting data came from Compustat-database. (Bajaj et al., 2001, p. 16) In the listing profile of these observations 72 out of 88 were listed on the OTC market<sup>3</sup> (Bajaj et al., 2001, p. 17).

The first result when looking at privately placed shares relative to the firm's stock price on the market yielded a discount of 22.21%. This result could not entirely be attributed to the lack of marketability because the fact that the 38 firms were listed on the stock exchange and involved registered shares, indicating that these shares had a ready

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<sup>3</sup> Over the counter (OTC) is a market where there is no organized exchange and the assets are traded by a network of dealers. (Brealey, Myers, & Allen, 2014, p. 360)



market. Despite marketability these registered private placements were placed at an average discount of 14.04%. The authors then looked at placements of unregistered shares for a quantitative estimate of the marketability discount and found an average discount of 28.13%, which in turn is 14.09% higher than the average discount on registered shares placements. The most distinguished difference between these two types of placements is in their level of marketability, indicating that the marketability discount could be computed to 14.09% (28.13-14.04). To say that this difference only is due to lack of marketability is according to the authors the wrong conclusion. They argue that differences between registered issues and unregistered issues not solely depend on the lack of marketability, instead four major characteristics of the firm and its private placements were observed:

- 
1. *The fraction of total shares offered in the placement.* Firms with high-expected growth in the future are harder to value due to uncertainty. These firms also tend to have a greater need for external financing. Consequently, tend to offer a greater fraction of total shares (i.e. existing equity in the firm) in a private placement. Therefore the discount should increase with the fraction of total shares being placed.
  2. *Business risk.* The greater degree of business risk associated with the firm and the importance of monitoring managerial decisions in the future the higher discount should be applicable.
  3. *Financial distress.* Firms in financial distress will have to offer greater discounts due to more scrutiny when analyzing the value of the business.
  4. *Total proceeds from the placement.* The larger the scale of a private placement, the easier it is to absorb fixed costs. Larger proceeds of the private placements will lower the discount needed.

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(Bajaj et al., 2001, pp. 19–21)

When performing a cross-sectional regression analysis the explanatory power of above-mentioned factors all had significant impact. Controlling for all other factors influencing a private placement discount, the discount for lack of marketability could be computed to 7.23%. (Bajaj et al., 2001, p. 26) However, Bajaj suggests that an analyst valuing a privately held company should use discounts provided by the total private placement discount or discounts observed through the acquisition approach. This because even though marketability could be the most prominent factor of the discounts the analysis goal is to determine the total valuation discount. On the other hand, if the discount only should reflect the marketability issue, Bajaj suggests that one should see to distinctions between the total valuation discount and the marketability discount. This meaning, when the applied discount solely depends on marketability, and thereof illiquidity. (Bajaj et al., 2001, p. 27)

### **3.4.1.2 Comment Study**

Robert Comment is a self-employed economist and author earlier active at John Hopkins University and before then Simon Business School at University of Rochester and NYU Stern School of Business. In his study Comment discusses earlier

accomplished so-called restricted stock-studies, which have analyzed the average percentage discounts of private placements of restricted stocks. Comment presents a critical view on the earlier made studies of restricted stocks, as they tend to transmit the “hard-to sell-part” of an asset as a type of risk. Comment means that it’s doubtful to adjust for the illiquidity as a type of risk because of that fact that this is something that already should have been adjusted for in the firm-specific risk in the valuation of the particular company in the same way the DLOM later is applied to that valuation. This argues for, as Comment expresses it, a redundancy that results in a double discounting for the risk in an intrinsic valuation like DCF (Comment, 2012, p. 80).

Comment carried out his study; *Revisiting the Illiquidity Discount for Private Companies: A New (and “Skeptical”) Restricted Stock Study* in 2012. The basic idea was to avoid four common mistakes that he identified as routinely made in earlier studies of the liquidity discount seen in private placements of restricted stocks.

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1. *The mistake to assume that discounts in private placements of restricted stocks are tied solely to restricted marketability since discounts also occur in private placements of free-trading shares.*
  2. *In earlier studies OTC companies account for a large proportion of the companies featured in the selection for the study. Out of the 1,103 private placements of common stocks during 2004-2010 Comment use in his selection only 41% OTC companies. This could be compared with 82% of 88 deals in Bajaj’s study that was discussed earlier in the chapter (Bajaj et al., 2001). The excluding of OTC companies is important according to Comment due to the fact that the largest discounts in the data occur in deals by OTC companies.*
  3. *The third mistake Comment means to avoid in his study is the mistake of overlooking the change in market price of the share during the time before the deal is made.*
  4. *The difference in discounts from one deal to another is broad and an attribute tempting to overlook. Because of the fact that the difference is broad Comment explains the importance of addressing the feature of the data. T-statistics increase with sample size, statistical significance presents a low bar in a sample as large as the sample Comment uses in his study.*

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(Comment, 2012, p. 81)

The purpose of Comment’s study was to “*determine if data on discounts in private placements of restricted stocks imply a DLOM that is different from the DLOM on the riskless assets*” (Comment, 2012 p. 89). This is a new dimension in the world of DLOM studies. Comment computes the illiquidity discount between a five-year maturity bank certificate of deposit, which is according to Comment illiquid due to penalties for early withdrawal, and a five-year U.S. treasury security, which is highly liquid. He found that the average DLOM for a riskless asset is 2.5%. This implies according to Comment that any discount beyond 2.5% (in an intrinsic valuation, such as DCF-model) would be as if you did a second round of discounting (whereas the first round of discounting occurs in a DCF-model or similar). Furthermore, liquidity is highly correlated with company size, and size should already have been taken into consideration while computing the

discount rate. This meaning, that one might unintentionally double count the DLOM. (Comment, 2012, p. 90)

Comments study is not designed as earlier studies. The study has no bearing on hypothesizes and is not to some part desired by an interested party (i.e. on behalf of somebody). First and foremost this study strives to allocate the DLOM as a part of the restricted stock discount that refer directly to the restricted marketability, and thereof illiquidity, of the stock. Comment argue that earlier studies are based on the assumption that the regulatory restriction is the sole cause of DLOM and that this will produce default estimates of the DLOM due to regression analysis misinterpretations. Instead Comment isolates the direct effect of the regulatory restriction on the average discount in private placements after controlling for several other factors. In his study, Comment places no portion of the allocation of the DLOM based on presumptions since concluded that one should not use the assumption that regulatory restrictions is the sole cause of DLOM. The result of the multiple-regression in his approach reports a DLOM no higher than 5.2% or 5.6%. Without this assumption there is in fact little of the discount that can be tied to the “restricted nature” of restricted stocks. Private companies may merit a discount, even a double-digit one, but a large discount is not primarily a DLOM. *“This is because a DLOM is not reliably different from the DLOM on the riskless assets, or 2,5 %”*. (Comment, 2012, p. 9)

### **3.4.2 The Pre-IPO approach**

In a pursuit to quantify DLOM some rely on the pre-IPO approach. This may be the simplest way of conducting differences between marketable and liquid shares with nonmarketable and illiquid shares. The methodology is to compare stock prices for a company before and after they made an initial public offering (IPO) (Hitchner, 2011, p. 384). The samples consist of transactions in a private company prior to an IPO and the price at which the IPO were agreed upon. John D. Emory is the pioneer of these types of studies, starting conducting data from 1980 and published several articles on the subject throughout the years. Emory used equity transactions in a maximum of five months prior to an IPO; he argued that the difference in price before and after an IPO is related to changes in marketability and thereof liquidity (Emory Sr & ASA III, 2002, pp. 190-191). Some argue that the pre-IPO approach suffers from selections bias since there are only firms that made a successful IPO in the sample (Block, 2007, pp. 36–37). Other criticism comes from Dr. Mukesh Bajaj who raised questions regarding the high discounts obtained from pre-IPO studies which imply an unreasonable high-annualized return. Also, buyers of stocks prior to an IPO are likely to be insiders who provide some sort of service to the firm, in which they are compensated for in regard to the lower price and thereof larger discounts. This discount is then due compensation rather than marketability, according to Dr. Bajaj. (Hitchner, 2011, pp. 389–390)

In our literature review of pre-IPO studies we will summarize two of the most-cited studies: John D Emory studies from 1980-2000 and Willamette Management Associate (WMA) studies from 1975-2000.

#### **3.4.2.1 Emory Studies**

From 1980 until 2000 John D. Emory conducted nine studies on the pre-IPO approach. The samples in every study were based solely on IPO's in which Baird & Company either participated in or received prospects about. The methodology was to analyze the

prospects to obtain differences in the price at which the stock was initially offered to the public and the price at which the latest private transaction took place (up to five months prior to the IPO). When looking at results from Emory's studies spanning from 1980 until 2000 an average mean price difference in the range of 42% to 48% is observed (excluding results from 1980-1981 study due to abnormally high). (Reilly & Rotkowsky, 2007, pp. 259–260)

The purpose of these studies is to provide helpful data to quantify the DLDM, comparing the price of transactions within five months prior to an IPO to the price at which the IPO is agreed upon. A stock transaction in a firm prior to an IPO lacks marketability and liquidity but is likely to get it in relatively short time. The difference in price before and after an IPO is related to changes in marketability, which Emory expresses as a percentage discount from the IPO price. Emory also states that the discounts found occurs where a high degree of marketability is probable, consequently not certain and that maybe the discount should be even higher for the more typical private company. Meaning, a greater discount for that firm's that does not bear evidence of being sold or having an IPO any time soon. (Emory Sr & ASA III, 2002, pp. 190-191)

#### ***3.4.2.2 Willamette Management Associate Studies***

Willamette Management Associate (WMA) conducted 18 pre-IPO studies from 1975 until 2002. In their most recent study, including transactions from 1998-2002, the method was similar to previous studies such as Emory (2002) when comparing the private market stock transactions on an arm's length<sup>4</sup> basis and repurchases of treasury stocks by the closely held company with the price at IPO. One factor differencing WMA and Emory studies is that WMA studies eliminate all transactions involving granting of employee, executive, or other compensation related stock derivatives and all stock sale transactions involving insiders. When analyzing year on year results the average mean discount stretches from 35.0% in 1998 to 55.8% in 2002. A large abnormal premium occurred in the average mean 2001, and in fact the results from 1999-2001 are significantly lower than previous findings in the WMA studies and Emory studies. Several circumstances could explain these divergences. One is that there were relatively few IPO's and private transactions that qualified into the WMA study selection criteria. Another is that the "dot-com bubble" occurred during the time frame of the study. A third is that the average first-day return on an IPO was explicitly high during 1999 and 2000. Also, maybe most importantly, the 1998-2002 WMA study is based on extremely few transactions. WMA therefore suggests that an analyst looking for indications of a reasonable applicable DLDM should rely on the overall results from 1998-2002 or just ignore the results from 2001 and 2002. (Reilly & Rotkowsky, 2007, pp. 261–263)

#### **3.4.3 The Acquisition Approach**

The acquisition approach is a way to estimate the DLDM/PCD by looking at different price multiples provided by stock- and accounting data. The acquisition approach starts by identifying comparable transactions between private and public companies (comparable by the same industry and within a certain timeframe). This information will be used to compare public and private companies discrepancy in price paid for the

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<sup>4</sup> A transaction in which the buyer and seller acts independently and have no prior relationship to each other.

shares. Mergermarkets, DoneDeal or the SDCs database is examples of databases that contains acquisitions with purchase price of private companies and thus provide the information needed to set up a comparison of multiples between private and public companies. The comparison is then based on several more or less adequate selection criteria's. (Koeplin et al., 2000, pp. 94–95)

The first step is to identify valuation multiples as your measurement. The next step is to compare, often several, multiples between the transactions in order to identify a price difference or a discount in the price paid for a private and public company. One example of how this comparison is being made is how Koeplin et al. (2000) use the EV/EBIT ratio<sup>5</sup>, comparing private and public companies to see if a significant discount can be identified. The enterprise value is the market value of the company's operating/invested capital. That is, market value of equity plus market value of interest bearing net debt (Bernström, 2014, pp. 29–30). EBIT is the earnings before interest and taxes in a firm. By using a multiplier approach like this it eliminates the impact of increasing or decreasing earnings or other variables over time (Block 2007, p. 36). To illustrate how this could be made in practice we take a firm with \$4 in earnings and per share (EPS) a price/earnings (P/E) ratio of 20 this share would be trading at \$80. If the EPS grew to \$6 and the stock price grew to \$120, at a first glance it might look as if the stock is valued higher than before, but this is not the case. The stock is still only valued at 20 times earnings (\$120/\$6). The Stock price (i.e. the value of equity) is referred to **P** and earnings to **E**. (Brealey, Myers, & Allen, 2014, pp. 78–79) This is an example of a P/E multiple, but the EV/EBIT multiple works the same way, only input values are different. You use **EV** (i.e. the value of equity plus net debt) and **EBIT** (i.e. earnings before interest and taxes) instead of **P** and **E** respectively.

As one already may have comprehended, it is impossible to only use the purchase price as a measurement between transactions, or even the final value given by a valuation in order find the discounts. The acquisition approach uses valuation multiples as the measurement due to the normalization provided by them.

One of the most common criticisms to the acquisition approach is that it is not the value itself that is being observed when conducting information of private company transactions in databases such as Mergermarkets for example. The purchase prices can, but not in any case necessarily represent the “market value” of the company. In fact, when talking about majority interest (i.e. controlling interests) transactions it is more probable that the purchase price will represent values that only the acquirer can obtain. (Elnathan et al., 2010, p. 388) It's thus a rather strong assumption to hypothecate, as most of these studies do, that the price difference between private and public companies is solely explained by the DLOM (Comment, 2012, p. 80).

#### **3.4.3.1 Koeplin Study**

*The Private Company Discount* is a study conducted by John Koeplin, Atulya Sarin and Alan C. Shapiro. Their study is one of the most cited studies when it comes to the acquisition approach of quantifying the PCD. The procedure in this study is to find a set of comparable transactions (i.e. acquisitions of companies in similar industries around the same time) and then calculate the purchase price multiples of a variation of relevant

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<sup>5</sup> Valuation multiple computed as enterprise value (EV) divided by earnings before interest and taxes (EBIT)

financial parameters, like sales or earnings. The computed multiples are then compared between public and private company transactions to calculate a discount. (Koeplin et al 2000, p. 94)

Koeplin et al. apprehensions, of looking at multiples for comparable companies is that it doesn't provide a precise valuation but rather evidence for the difference in prices being paid for comparable companies. This is a standard technique used by investment bankers and professionals working with company valuations in acquire/selling situations and when screening leverage buyout (LBO) candidates. (Koeplin et al 2000, p. 94) The author's draw inspiration from a study from Steven Kaplan and Rochard Ruback where they compared priced paid in high-leverage transactions to valuations compiled from the DCF method and the approach of comparable. Kaplan and Ruback found that the DCF method yielded the most reliable estimates overall but that the use of transactions within the same industry gave the lowest valuation errors. Therefore the authors took the transaction approach in their study. (Koeplin et al, 2000, p.94) They argues in resemblance to other studies for the difference in value characteristics between private and public companies and expresses that *the most obvious difference is the lack of liquidity for shares in private companies as compared to shares in public companies.* (Koeplin et al, 2000, p.94-95)

In the study they estimate the PCD for a number of domestic and foreign transactions. They start of by identifying a quantity of acquisitions of private companies. For each of the identified transaction they pared up a publicly traded company in the same industry, acquired at about the same time and as close as possible in size as the private company. After finding these peers they compared the valuation ratios paid for the companies (private and public) and percentage difference between these two were computed as the discount. (Koeplin et al., 2000, p. 95)

Domestic private companies yielded an average discount of 20-30% compared to similar public companies when using earnings multiples as the core for valuing the transactions. When instead using the book value multiple the estimated discounts was somewhat lower. Furthermore, the revenue multiples showed no significant differences between acquired private and public firms. (Koeplin et al., 2000, p. 95)

Foreign companies, containing non-U.S. private firms, yielded a larger PCD. The average discount was 40-50% relative to similar public company when using earnings multiples to the value of the transactions. The findings measuring discount on foreign companies are not as significant as for the domestic companies because of the variation in the multiples. This is probably due to differences in accounting standards according to the authors of the study. They neither found any statistically significant difference between the revenue multiples and book value of acquired private and public firms. (Koeplin et al., 2000, p. 95)

#### **3.4.3.2 Kooli Study**

With the origin aspect that it is a struggle to value a private company Kooli, Kortas, & L'Her (2003) raise the endeavor to determine the appropriate DLOM. They illuminate that the estimation of the DLOM is a question of interest for professionals working with valuation and also to the academic community. In their study they strive to answer the question "*how large is DLOM attached to private firm valuation?*" by conducting a study with an acquisition approach. The argument for the difficulty in answering this

question empirically is *that the discount cannot be observed separately* (Kooli et al., 2003, p. 48). In the study the authors made the observation that there are several ways of proving the existence of the DLOM and that these comes from a variety of different methodologies. They go through the restricted stock-studies, view the IPO-approach and explain the shortage of these methods. They also go through Das, Jaganathan and Sarins (2002) approach to estimate the probability of exit, the exit multiples, and expected gain from private equity investments to determine the DLOM for private companies. Kooli et al., (2003, p. 48) means that these approaches capture more factors than only the marketability discount.

Kooli et al., (2003, p. 48) argues that the acquisition approach Koeplin (2000) use is interesting. In Koeplins study they compared acquisitions prices for public and private companies and found out that the private companies was purchased at a significant discount compared to a comparable public company. However Kooli et al., (2003, p. 49) expresses that the results in the Koeplin study might be attributed though systematic differences in the characteristics of private and public companies.

In the study they attempt to supplement and more carefully put together their methodology for the acquisition approach by gathering a larger sample covering the period 1995 to 2002 (Kooli et al. 2003, p 49). In the selection process of their sample Kooli et al (2003, p. 50) conduct a detailed analysis including a cross-sectional analysis of the estimated discount. By using earnings multiples they concluded a median DLOM of 34%, significant at 1%. In their cross-sectional analysis they find that the size of the discount differs with the characteristics of the company. Large private firms and firms with high growth are associated with a smaller DLOM. Their approach to cross-reference portfolio methodology with acquisition on a large sample aim to allow professionals working with valuation, investors and the academic community to place trust and confidence in the study. (Kooli et al. 2003, pp. 53-54)

The result of the study present a DLOM of 34% (earnings multiple), 17% (sales multiple) and 20% (cash flow multiple) although as earlier mentioned the cross-section analysis showed a variation depending on the characteristics of the company and with the industry (large/growth firms tend to a lower DLOM). (Kooli et al. 2003, p 54)

The author's expresses that their study offers evidence that those private firm analysts should be careful in the valuation process. This due to the fact that the methods and data used in valuation of private firms differ among analysts. Also the DLOM is likely to vary across companies and buyers, which argues for a rule of thumb useless. With this argument it's therefore recommended to exercise carefully when considering the results of previous and future studies. (Kooli et al. 2003, p 54)

#### **3.4.3.3 Block study**

Blocks study from 2007 is conducted in a similar way as the above-mentioned study by Kooli et al., (2003). Block shares the opinion that research done on illiquidity discounts that rely on restricted stock studies and IPO studies suffer from drawback and require better methodology. In this study Block, just like Kooli et al., (2003) follows the approach of Koeplin et al. (2000), by comparing acquisition multiples based on purchase prices of privately held companies to publicly traded companies in the same industry over a corresponding time period. All acquisitions (i.e. transactions) used in Blocks study were for a controlling interest (Block, 2007, p. 39). Block finds that the

average discount for 91 public and private firms between 1999 and 2006 is 20%-25%. This study is unique and differs from others in the way it breaks down the discount by industry. In the results of the study we find out that the highest discount is found in manufacturing (around 30%-40%) and the lowest in financial firms (around 8%-10%) (Block, 2007, p. 40).

#### **3.4.3.4 Elnathan, Gaviious & Hauser Study**

Elnathan, Gaviious, & Hauser, (2010) published: “*An analysis of private versus public firm valuations and the contribution of financial experts*” in the international journal of accounting. In this study they investigated differences in professional valuations between private and public companies for transactions outside the stock exchange. The purpose of the study was to examine these three questions:

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1. To what extent do the experts rely on financial statement information in private firm valuations, compared with a public firm valuation?
  2. Do the experts competently use their access to inside information in private firm valuation, compared with public firm valuation?
  3. To what extent do the experts comply with the interests of the commissioner of the valuation in private firm valuations versus public firm valuation?

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(Elnathan et al., 2010, pp. 388–389)

*In the remaining's of this summary we will focus on the third question mentioned above. Not because other results conducted by the authors are not interesting, they are just excluded in the regard to the relevancy of this thesis.*

The sample consisted of 147 valuations computed by financial experts from 1991-2006, 81 of these were public firm valuations and 66 were private firm valuations. One things that distinguee the Elnathan et al. (2010), study from earlier studies is that the valuation documents could be obtained from the Tel-Aviv Stock exchange (TASE) and the Israel Securities Authority (ISA) due to the full disclosure requirements set by the ISA in the case of a transaction (Elnathan et al., 2010, pp. 393–394). This made it possible for the authors to obtain the derived value and not just the price paid which is the normal procedure in other studies with this approach (e.g. Koeplin, Sarin, & Shapiro, 2000; Kooli et al., 2003; Block, 2007; Klein & Scheibel, 2012). Hence, the multiple analysis differs because it investigates valuation multiples rather than acquisition multiples to see the discount/premium applied by the experts valuing the firm (Elnathan et al., 2010, p. 403).

The third part of the study explores the private company discount via a single variable analysis of valuation multiples to examine whether experts apply a discount when performing valuations on a privately held firm. Then by using a multivariate analysis of these valuation multiples that controls for specific differences in time, risk, profitability, growth, earnings quality and industry the authors focus on the direct impact provided by the commissioner's identity, meaning, buy or sell side-analyst, on the final value derived from the valuation analysis. The results indicated that the earnings multiple from the valuation is lower for private firms than for public firms and that the book value multiple is higher. This is consistent with previous empirical evidence using the acquisitions approach. When looking at the earnings multiples from private firms a PCD



of 22% is detected. The most interesting result from the multivariate analysis is that a PCD may be related to experts complying with the interests of the commissioner of the valuation. Meaning, an expert employed by the seller will provide a higher valuation than an expert employed by the buyer, which in turn will provide a lower valuation. The authors did find evidence for a PCD in both the earnings multiple and the book value multiple when the buyer commissioned the valuation. On the flip side of the coin, the derived value was higher when the seller commissioned the valuations resulting in an elimination of the PCD and in some cases even a creation of a premium. This is as stated by the authors; “*at least a partial explanation for inconclusive results regarding the private company discount*”. (Elnathan et al., 2010, p. 390)

#### **3.4.3.5 Klein & Scheibel Study**

In 2012 Klein and Scheibel studied the private company discount (PCD) on the European market by conducting samples via the acquisition approach similar to Koeplin et al. (2000). The purpose of the study is to analyze the PCD for controlling interests (i.e. majority equity interests) by comparing the price paid for a private company with the price paid for a comparable public company through acquisition multiples, such as the enterprise value-to EBITDA multiple (EV/EBITDA) (Klein & Scheibel, 2012, pp. 74 & 76). Three hypotheses based on earlier empirical evidence, primarily from the U.S. were stated:

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H1: *European private target companies sell at a discount relative to the acquisition price paid for their publicly listed European peers.*

H2: *The private company discount should be lower than the potential transaction costs for an IPO.*

H3: *The calculated PCD based on the acquisition approach does not depend on any specific factor, such as size and profitability.*

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(Klein & Scheibel, 2012, p. 75)

The first sample from 1999 until 2009 included 20 268 transactions with private target companies and 1 687 transactions with public target companies. These were conducted from Mergermarkets database and reduced by different selection criteria's. First only transactions of 50% or more of the target's equity and deal values of at least 25 million EUR were selected. Transactions were the target companies had a negative earnings and an EV/EBITDA multiple below 3 or above 25 were excluded from the sample to further eliminate distressed and special situations. The final sample included 1042 private company target transactions and 613 public company target transactions. To find comparable transactions, each and every one of these private company target transactions had to be paired with a public company target transaction. When finding comparable pairs the public company transaction had to pass several selection criteria's in regard to timing of the transaction, industry similarity, profitability and size. This resulted in 138 comparable pairs of transactions. (Klein & Scheibel, 2012, p. 76)

As a result the authors did find an average PCD of 5% for majority equity interest in the Eurozone from 1 January 1999 to 31 December 2009. The results were also consistent

with all of the three above-mentioned hypotheses in this test (Klein & Scheibel, 2012, p. 81).

### 3.4.4 Quantitative marketability discount model (QMDM)

Z. Christopher Mercer published his book: *Quantifying Marketability Discounts*, in 1997. In his book he describes a new model analyzing the DLOM. The interpretation of this model is that shareholder-level value is generally less than the value of the enterprise for varieties of reasons. These can summarize as follows:

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1. Agency costs could create differences between cash flow to shareholders and the cash flow to the enterprise as an entity. Thus, cash flow to shareholders is less than cash flow of the enterprise
  2. Minority shareholders could be burdened with expenses when for an example controlling shareholders take bonuses in excess of normalized compensations, which in turn will affect the expected growth in value due to that these funds will in fact not be available to pro rata distributions and reinvestment.
  3. Reinvestments of fund at less than its cost of capital made by management (i.e. suboptimal reinvestments) suppress the expected growth in value and therefore shareholder value, which in turn will imply greater marketability discounts, all other thing being equal.
  4. Incremental risk in minority interests exceeds the risk of the enterprise. Equity discounts rates will reflect the appraiser's perceived risk of not achieving expected cash flow and growth. These risks are embodied in the enterprise discount rate, and in the enterprise valuation. The lack of marketability in a minority interest indicates that these investors are faced with additional risk, including uncertainties of the expected holding period and sometimes lack of transferability.

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(Mercer (1997) referred to by Hitchner, 2011, pp. 417–418)

The conclusion is that higher incremental risk and agency costs will reduce the shareholder-value compared to the enterprise value, resulting in a marketability discount, all other thing being equal. (Hitchner, 2011, p. 418)

This indicates that one could describe the DLOM as the relationship between values determined at the enterprise level and the shareholder level due to different input assumptions into the DCF-model depending on which value the appraiser is calculating. Using the assumptions for the *shareholder-level DCF* the value will directly represent a nonmarketable minority interest. However, a QMDM is not only applicable to shareholder level valuations because some of the shareholders expectations regarding cash flow, risk and growth will be corresponding with the *enterprise-level DCF* making it somewhat more appropriate to use a QMDM in conjunction with the valuation of the entity. (Hitchner, 2011, p. 417)

When computing the QMDM it requires five key inputs:

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1. Marketable minority value of the stock
  2. Expected growth rate of a marketable minority shareholder interest
  3. Expected holding period
  4. Required rate of return for a nonmarketable minority interest
  5. Expected dividend payments
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(Hitchner, 2011, p. 417)

According to Hitcher, (2011) p. 419 the QMDM represents continued research development when it comes to determinants of the marketability discount. Numerous experts have adopted at least some of the framework from QMDM when analyzing and applying discounts for lack of marketability. Still, most of them agree that if used, it should be together with other discounts methods.

### 3.4.5 Option pricing model

Another rather technical approach in pursuit to determine and foremost reassure the amount of the marketability discount is the option-pricing model (BlackScholes pricing model). The fundamentals of the model come from the similarity of a restricted stock. When David B. Chaffe III in 1993 published his article; *“Option Pricing as a Proxy for Discount for Lack of Marketability in Private Company Valuations”* he found that the European option<sup>6</sup> could be compared with characteristics of a restricted stock. (Pratt, 2009, p. 113)

The reason to use a put-options calculation to model a DLOM is due to the characteristics of it. A put-option can protect the investor from a loss in value (i.e. a decline in the stock price) in the underlying stock. If one for example own 100 shares of H&M B on the Swedish stock Exchange; NASDAQ OMX STOCKHOLM, but is somehow afraid that H&M B stock could decline from 300 SEK per share (today) to about 270 SEK in the future. In order to insure you position (instead of liquidate your position) in H&M B you could buy one put-option (with a strike price of, let's say, 300 SEK maturing in three months from now). The cost of buying the put-option can be seen as an insurance payment. You have bought the right, but not the obligation, to sell your H&M position in three months from now (at maturity) for 300 SEK, no matter what the stock price will be. If the stock price is above 300 SEK in three months from now you will of course not use the put-option (i.e. opportunity to sell at a given strike price, which in our example is 300 SEK). In finance terms this is known as a hedge. (Brealey et al., 2014, p. 664)

The studies on the option pricing-model approach aims to determine a DLOM by letting the cost of such a put-option, expressed as a percentage of the price in the underlying stock, represent a DLOM. This resulted in a similar output as the earlier restricted stock studies and created an alternative approach of reassuring the DLOM from illiquid assets in comparison to the more traditional restricted stock approach (Pratt, 2009, p. 113; Hitchner, 2011, p. 419).

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<sup>6</sup> An option only exercisable at maturity (Brealey et al., 2014, p. 513)

This is however a rather simple explanation of the option-pricing approach. Studies in this area tend to get much more complicated mathematically than above described. Other studies use different type of options and modeling to derive the DLOM. Due to the timeframe and purpose of this thesis we will not dig any deeper into this, however, since we are to summarize existing research on DLOM the option-pricing model approach is important to mention. Here follows a well-cited study conducted by John D. Finnerty.

#### **3.4.5.1 Finnerty Study**

In 2013 Finnerty published: *“The Impact of Stock Transfer Restriction on the Private placement discount”* where he brings up four explanations for a private placement discount. He finds that all four contribute to the discount. These explanations are: **loss of option value due to transfer restrictions, equity ownership concentration, information gathering and overvaluation and expected underperformance post-issue.**

Finnerty starts off with the statement; *“factors responsible for the common stock private placement discount continue to be of both theoretical and practical interest.”* He describes that earlier studies have documented significant discounts in private placements of letter stock, which are not freely transferable due to restrictions imposed by rule 144 under the security act of 1933, averaging from 13% to 35% (SEC, 1971; Wruck, 1989; Silber, 1991; Hertz and Smith, 1993; and Hertz, Lemmon, Linck, & Rees, 2002 referred to by Finnerty, 2013, p. 575). According to Longstaff (1995, referred to by Finnerty, 2013, p. 576) the accepted wisdom in the business appraisal field is that an appropriate discount for a two-year restriction ranges from 25% to 35% and for a one-year restriction 15% to 25%. Further Longstaff refers to the marketability discount being consistent with this range by defining the value of marketability as the price of a lookback put option (where the payoff depends on the maximum or minimum of the underlying asset’s price occurring over the life of the option). The private placement discount is often referred to as a marketability discount. However Finnerty raise the perspective that there are a lot of large financial institutes with long-dated liabilities, such as a pension funds and life insurance companies that are less concerned about liquidity then other investors. Hertz and Smith (1993 referred to by Finnerty, 2012, p. 576) found that the discount attributed to lack of liquidity would only account for a discount of 13,5%. Where they argue for the fact mentioned above, that not all investors should require a large discount only for agreeing to not selling their shares for two years and therefore transfer restriction should only account for a part of the discount.

Finnerty presents four explanations as hypothesizes to the discount; (1) Loss of option value is due to transfer restrictions, (2) equity ownership concentration, (3) information gathering and (4) overvaluation and expected underperformance post-issue. He explains that these might overstate the marketability discount and that it rather explains the private placement discount. However, by referring to Longstaff he explains that a “private placement discount” may reflect a “marketability discount.” In his paper Finnerty argues that the four explanations reflects the private placement discount and tests the importance of those. (Finnerty, 2013, p. 577)

Finnerty collected a sample of 275 private placements of letter stocks that took place from April, 1991 to March, 2007. In February 1997 the SEC rule 144 changed the

minimum restricted holding period of a letter stock from two to one year, which Finnerty argue would lower the discount after the change. While presenting the sample and making the comparisons Finnerty divided the sample in pre- and post-1997. (Finnerty, 2013, pp. 581-582) He presents mean and median percentages of the private placement discounts. **Out of the 275 placements, 236 were sold at a private placement discount.** These empirical discounts were calculated as follows:

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$$\text{Discount} = P_{-1} - P_0 / P_{-1}$$

Where:

$P_{-1}$  = closing price on trading day

$P_0$  = private placement offering price

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(Finnerty, 2013, p. 584)

When looking at all pre-February 1997 offerings the mean (median) discounts were 20.82% (19.78%) and post-February discounts were 14.62% (11.89%). For the obtained discounted offerings, the pre-February 1997 mean (median) discount were 24.78% (20.19%) and the post-February 1997 discounted offerings the discount were 20.41% (13.75%). Finnerty argues that the discount should be lower after February 1997 as the SEC halved the resale-restriction period. The difference between the median discounts is significant at the 5% level. (Finnerty, 2013, p. 584)

By including factors that are responsible for the private placement discounts Finnerty ran three cross-sectional regression models. Model 1 included transfer restriction independent variables and controlling variables. Model 2 included only ownership concentration, information, and overvaluation independent variables along with the control variables. Model 3 combined both sets of independent variables and the control variables. (Finnerty, 2013, pp. 593–594)

Finnerty (2013, p. 598) compares the lookback put option model proposed by Longstaff (1995 referred to by Finnerty, 2013) to an average-strike put option model proposed by Finnerty (2013). Both models can be used to quantify the loss of timing flexibility. After comparing the two models Finnerty test whether model-predication discounts (taken from option models) are consistent with empirical-predicted discounts (taken from his sample of 236 discounted private placements). Both of the option models where consistent with the regression model 1 and 3 mentioned above. (Finnerty, 2013, pp. 598-599)

Finnerty explains that the average-strike put option model calculates marketability discounts that are consistent with the discounts he observed empirically in letter stock private placements. Although he mentions that there is a tendency to understate the discount when the stock volatility is below 45%. He comes to the conclusion that the average-strike put option model fits with the empirically observed discounts better than the look back put option model, which overstates the discount. (Finnerty, 2013, p. 606)

### 3.4.5.2 The LiquiStat Database

Pratt (2009, p. 113) refers to the database LiquiStat conducted by Espen Robak at Pluris Valuation Advisors LLC as a database specialized in warrants<sup>7</sup>, among other things. According to Pratt (2009, p. 113), Robak also expresses criticism to the traditional restricted stock studies, and that these could be biased for control monitoring, capital scarcity and lemon theory. The LiquiStat database avoids these serious flaws by removing transactions that could have additional discounts for control monitoring and information asymmetry by assuring that neither the buyer or seller are affiliated with the issuer of the securities.

Robak found that, with the BlackScholes pricing model, warrants discounts are:

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- As much as 10 to 20 percentage points higher than restricted stock studies.
  - Greater the greater the volatility of the underlying asset
  - Greater the higher volume of warrants sold
  - Lower the higher intrinsic value of the warrant
  - Greater the higher the time value of the warrant
  - Greater the longer the time to expiration
  - Lower the greater market capitalization of the issuer company
- 

(Pratt, 2009, p. 116)

On average Robak found a warrant stock discount of 42,7%. This offers experts an alternative approach when determining the illiquidity discount. Because of the detailed database experts can collect information about the buyer, the seller and the timeframe, making it possible to match certain conditions in the analysis. (Pratt, 2009, p. 117)

### 3.4.6 Damodaran's bid-ask spread approach

When Damodaran (2012, p. 684) discuss illiquidity discounts he expresses the desire for investors to have the option to liquidate an equity interest if you need to. When taking a position in an entity one usually would like the option to liquidate that position, not only because of cash flow generation but also due to the fact that you might want to change your current portfolio. Here is where he expresses a difference between private and public firms. With publicly traded companies, liquidation of marketable minority interest is a simple process and normally has low costs (usually a small percent of the positions value). When it comes to a private company, liquidation costs in comparison to the value of the company can be a substantial amount. Hence, the equity value of a private company might need to be discounted for this potential liquidation cost. Aligned with previous studies and statements in research Damodaran (2012, p. 684) identifies factors that suggests that the illiquidity discount is likely to vary across both firms and buyers. He explicitly expresses four factors that may cause the discount to differ across firms:

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1. *Liquidity of assets owned by the firm.* The fact that a private firm is difficult to sell may be rendered moot if its assets are liquid and can be sold with no significant

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<sup>7</sup> Interchangeable to a general *option* (Brealey et al., 2014, p. 358)

loss in value. A private firm with significant holdings of cash and marketable securities should have a lower illiquidity discount than ones with factories or other assets for which there are relatively few buyers.

2. *Financial health and cash flows of the firm.* A private firm that is financially healthy should be easier to sell than one that is not healthy. In particular, a firm with solid profits and positive cash flows should be subject to a smaller illiquidity discount than one with negative income and cash flows.
3. *Possibility of going public in the future.* The greater the likelihood that a private firm can go public in the future, the lower should be the illiquidity discount attached to its value. In effect, the probability of going public is built into the valuation of the private firm. To illustrate, the owner of a private e-commerce firm in 1998 or 1999 would not have had to apply much of an illiquidity discount to his or her firm's value, if any, because of the ease with which these firms could be taken public in those years.
4. *Size of the firm.* If we state the illiquidity discount as a percent of the value of the firm, it should become smaller as the size of the firm increases. In other words, the illiquidity discount should be smaller as a percent of firm value for private firms like Cargill and Koch Industries, which are worth billions of dollars, than it should be for a small firm worth \$15 million.

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(Damodaran, 2012, p. 684)

Damodaran also remarks that discount is likely to vary across buyers depending on their desire for liquidity. Damodaran (2012, p. 685) states the likeliness that a long-term buyers with deep pockets see little or no need for the option to “cash out” on their equity position and therefore would attach a lower illiquidity discount than short term buyers with a lower safety margin.

In his recent published book; *Tools and Techniques for Determining the Value of Any Asset* (3<sup>rd</sup> edition), 2012, Damodaran mention two different approaches to estimate the illiquidity discount: the restricted stock approach and the bid-ask spread approach. Since we already discussed the restricted stock earlier in our referential framework, we will focus on the bid-ask spread approach.

Damodaran (2012, p. 687-688) expresses that one of the biggest limitation with research based on restricted stock is the small sample size. A larger sample of firms with illiquidity discount would presumably bring a more precise estimate. Damodaran explains in his book that such a sample exist, with the assumption that publicly traded assets are not completely liquid. Liquidity is something that varies across publicly traded stock. If we look at a small company listed on the OTC market, they are much less liquid than a firm listed on the New York Stock Exchange, which in turn is less liquid than a large cap company that is widely held. The difference between the bid price and the ask price is what Damodaran observes in his study and uses as a measurement for the cost of instant liquidity. Meaning, when an investor buys an asset and directly changes his mind and decides to sell the asset he immediately would pay the bid-ask spread. (Damodaran, 2012, pp. 687–688)

Damodaran visualizes the equity in a private company as a stock that never trades. For such a stock the expected bid-ask spread would be high, and the spread would measure the discount for illiquidity. In order to estimate the illiquidity discount throughout the bid-ask spread one would need to tie in the bid-ask spread of publicly traded shares to variables that can be measured for a private company. (Damodaran, 2012, p. 688)

By conducting a regression analysis to relate the bid-ask spread to variables of private business Damodaran sets up the bid-ask spread as a multiple regression, which reports the following variables:

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$$\text{Spread} = 0.145 - 0.0022 \ln(\text{Annual revenues}) - 0.015(\text{DERN}) - 0.016(\text{Cash/firm value}) - 0.11(\$ \text{ Monthly trading volume/firm value})$$

- Annual revenues
- (DERN) Dummy variable that would reflect if the firm is profitable or not
- Cash/Firm value
- Monthly trading volume/firm value

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(Damodaran, 2012, p. 687)

To make this multiple regression fit for a private company you plug in the corresponding data of the firm you're about to estimate the illiquidity discount for. As a private company does not have any monthly trading volume this variable can be set to zero. This regression will yield a percentage rate that Damodaran defines as the *illiquidity discount*. This rate can later be used as a discount – on final value. (Damodaran, 2012, p. 687)

### 3.4.7 Summery quantitative evidence

Most of the studies above are in some way trying to quantify and give empirical evidence for the existence of *illiquidity discounts (DLOM)* and/or simply the price divergence between private companies and public companies, namely the PCD. In the attempt of quantifying the discounts most of these articles comes to the conclusion that the DLOM is in some way a part of the PCD, but very difficult to quantify. Reilly and Rotowski, (2007 p. 285) states that there are dozens of published studies between 1971 and 2007 on the subject of DLOM, all contributing to the same conclusion; *DLOM is an economically valid concept and firm-specific characteristics must be observed before applying any discount and premium*. What we can say after reviewing above-mentioned studies is no different to what Reilly and Rotowski concluded back in 2007 regarding empirical evidence of a DLOM.

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We interpret the more synthetic multiple variable methods, such as Mercer's (1997) QMDM referred to by Hitchner (2011, pp. 417–418) and especially Damodaran's bid-ask spread approach (Damodaran, 2012, p. 687) to represent another way to compute the appropriate DLOM. These two studies are the ones taking firm-specific variables into account to the largest extent. Damodaran's bid-ask spread approach provides a model where firm-specific variables yield a percentage rate of asset value, defined as illiquidity discount. Mercer's QMDM computes a shareholder level DCF-model



analogous to a general entity-level DCF-model, but with tailored assumptions in regard to those at shareholder level (i.e. minority interests).

When analyzing above-mentioned quantitative studies (excluding Mercer and Damodaran), one can easily observe the wide range of calculated discounts, ranging from 5% up to as high as above 50%. This is primarily due to different methodologies and the time period from which the sample is conducted. One could also observe that there are fewer studies and market data to benchmark the DLOM for controlling interests even though researchers, experts and U.S. tax courts seems to support it. We must keep in mind that pre-IPO studies and restricted stock studies including option-pricing models only deal with minority interest discounts. Some of the acquisition studies deal with majority interests discounts, but then with the hypothesis that DLOM is the only explanatory factor for a PCD.

To some extent, what theses quantitative studies provide are simply evidence of the existence of a DLOM rather than a generalized quantified estimation that professionals could apply in a valuation due to the widely spread results. *One can easily argue that an analyst seeking guideline in the ocean of DLOM studies tend to be rather subjective.* Meaning, it's up to the analyst in question to apply what seems appropriate to the valuation subject characteristics and look to what he or she thinks is the most adequate method/study in regards to the valuation subject for guidance. The analysts are faced with an estimation problem since there is no straight out way applicable. This is an interesting hypothesis to investigate further in our empirical analysis in forthcoming of the thesis.

To sum up the theory and empirical evidence behind DLOM, these studies don't give a straight standard answer on how large a DLOM should be, but rather highlight relevant factors to consider in the valuation process. This can be helpful when practitioners are faced with this kind of estimation problem. Down below in table 3.2 a quick summery on the reviewed studies is presented:

<b>Estimation approach &amp; study</b>	<b>Average discount conducted</b>	<b>Factors influencing illiquidity discount (DLOM)/summery of conclusions regarding DLOM</b>
<b>Restricted Stock</b>	<i>Minority interests (DLOM)</i>	
(Comment, 2012)	5.6%	<ul style="list-style-type: none"> <li>• Illiquidity discount in a riskless asset</li> <li>• Firm specific-characteristics are greater explanatory variables then marketability</li> </ul>
(Bajaj, Denis, Ferris, & Sarin, 2001)	7.23%	<ul style="list-style-type: none"> <li>• Fraction of total shares being issues (need for financing)</li> <li>• Business risk</li> <li>• Financial distress</li> <li>• Size of the private placement</li> </ul>
<b>Pre-IPO</b>	<i>Minority interests (DLOM)</i>	

(Emory, 2002)	42%-48%	<ul style="list-style-type: none"> <li>• The likelihood of the equity to get more marketable and liquid in the future</li> </ul>
(WMA, 2002)	35%-55.8%	<ul style="list-style-type: none"> <li>• The likelihood of the equity to get more marketable and liquid in the future</li> <li>• Excludes non-arm's length transactions</li> </ul>
<b>Acquisitions</b>	<i>Minority/controlling interests (PCD)</i>	
(Koeplin et al., 2000)	Domestic 20%-30%, foreign 40%-50%. <i>Purchase price multiples</i>	<ul style="list-style-type: none"> <li>• "The most obvious difference between public and private firms is the lack of liquidity"</li> <li>• Foreign companies yield larger PCD (compared to U.S.)</li> </ul>
(Kooli et al., 2003)	24%. <i>Purchase price multiple</i>	<ul style="list-style-type: none"> <li>• Large firm have lower DLOM</li> <li>• High growth firm have lower DLOM</li> <li>• "The rule of thumb is useless"</li> </ul>
(Block, 2007)	20%-25%. <i>Purchase price multiple</i>	<ul style="list-style-type: none"> <li>• DLOM is different in various industries</li> </ul>
(Elnathan et al., 2010)	22%, <i>Valuation multiples</i>	<ul style="list-style-type: none"> <li>• An expert employed by the seller will provide a higher valuation than an expert employed by the buyer which in turn will provide a lower valuation</li> </ul>
(Klein & Scheibel, 2012)	5%. <i>Purchase price multiple</i>	<ul style="list-style-type: none"> <li>• The PCD is lower than the net present cost for an potential IPO</li> <li>• A calculated PCD based on the acquisition approach does not depend on firm-specific factors</li> </ul>
<b>QMDM</b>	<i>Minority/controlling interests (DLOM)</i>	
(Mercer, 1997)	n.a	<ul style="list-style-type: none"> <li>• Shareholder value is lower than the value of the entity</li> <li>• Shareholder agency costs</li> <li>• Bad reinvestment decisions by management</li> <li>• Incremental risk factors for minority interests</li> </ul>
<b>Option Pricing</b>	<i>Minority interests</i>	
(Finnerty, 2013)	24.78% & 20.41% (Private placement discount) <i>Before &amp; after February 1997 respectively.</i>	<p>Discounts depends on:</p> <ul style="list-style-type: none"> <li>• (1) Transfer restrictions, (2) equity ownership concentration, (3) information gathering and (4) overvaluation and expected underperformance post-issue.</li> </ul> <p>DLOM can be explained by an average-strike put option.</p>

LiquiStat Database	42.7%. (Warrant discount)	Discount depends on: <ul style="list-style-type: none"> <li>• Volume of issue</li> <li>• Volatility of the underlying stock</li> <li>• Intrinsic value of the warrant</li> <li>• Time to expiration of the warrant</li> <li>• Market cap of the issuer company</li> </ul>
<b>Bid-Ask Spread</b>	<i>Minority/controlling interests (DLOM)</i>	
(Damodaran, 2012)	n.a	<ul style="list-style-type: none"> <li>• Desire of the buyer to be able to liquidate the position in the future</li> <li>• The level of liquidity of the assets in the company</li> <li>• Financial health of the company</li> <li>• Possibility of going public in the future</li> <li>• Company size</li> </ul>

**Table 3.2 Summary of quantitative studies**

*For the remainder of this referential framework the focus will be on how professionals handle the issue of illiquidity practically when computing a valuation of a privately held company.*

### 3.5 Studies on how large illiquidity discounts (DLOM) experts apply

According to Pratt (2009 pp. 399-400), “*It is amazing how many so-called experts throw out a number with little or no analysis*”. Appraisers should not just simply apply a discount based on averages without a greater investigation, nor should an expert seek guideline from empirical evidence regarding minority interest when applying DLOM for controlling interest, since there is no logical connection. The reasons to apply a DLOM for controlling interests may be different from the factors affecting DLOM for minority interests. Generally speaking there are also several different factors to take into consideration, not at least firm specific characteristics and the purpose of the valuation, indicating a case-by-case analysis. (Pratt, 2009, p. 399) With this conclusion in regard we are now to examine a more qualitative approach to the issue of DLOM.

Petersen, Plenborg, & Schøler (2006) and Vydržel & Soukupová (2012) have conducted survey and interview studies in order to find how practitioners on the Danish and Czech Republic market respectively, handle critical components in valuations of private companies. One of the components addressed in these studies is DLOM. Even though no in-depth analysis is given one could see further evidence that practitioners actually apply a DLOM and how large it tends to be in a generalized situation. We will now give a brief summary of these studies.

#### 3.5.1 Petersen Study

Over decades several different approaches to compute a valuation can be noted. Analysts and practitioners have developed their own subjective approach over time based on their assumptions. In the context of business valuation there are two types companies that can be classified based on their specific dimension: private companies and public companies. The public company shares are traded on the stock exchange and hence, the price of the shares (“the market value”) is determined by the public market. Several methods to compute a value of public company are found in a lot of literature by many authors. However the literature and authors who focus on the valuation of a private company are substantially fewer. Private company shares are not listed on a stock exchange and lack an established market. Due to the fact that private company shares are not being traded on an active market (i.e. between active buyers and sellers) the *market value* of a private company is harder to determine. (Petersen et al., 2006, p. 33) This difficulty is also referred to by Damodaran (2012, p. 684).

Studies have been made on the area addressing the issues of valuing a privately held firm. Petersen, Plenborg, & Schøler carried out a study where they aim to present how Danish financial advisers and private equity funds use present value approaches when valuing privately held firms. They developed questions based on an extensive literature review of books and journal articles. (Petersen et al., 2006, p. 33)

Pratt (2009, referred in Petersen et al., 2006, p. 33) and Damodaran (2012, referred to in Petersen et al., 2006, p. 33) suggest adjustments for control and marketability in the equity value of the firm. In line with these researches Petersen et al., focus on:

- 
1. *Projection of cash flow*
  2. *Estimation of cost of capital*
  3. *Special adjustments of estimated firm value*
- 

(Petersen et al., 2006, p. 33)

Because Peterson et al., (2006, pp. 34-35) has a more qualitative approach in their study they obtain unique information regarding cooperative behavior that large sample studies lack due to the inability to ask qualitative questions. In the conclusion of their study Peterson et al., (2006, p. 45) expresses that the result is both *reassuring* and *puzzling*. Reassuring in the meaning that the majority of professionals apply present value approaches combined with targeting capital structure and cost of debt that follows the recommendations from the valuation literature.

The authors address the issue of special adjustment of estimated firm value as puzzling. Among other things, marketability was one topic the authors addressed. They first asked the participants a question regarding the rule of thumb when deducting a percentage rate from the final estimated market value. A second question had to do with whether the participants add a risk premium, solely dependent on illiquidity, to the discount rate when calculating an intrinsic value when for example using a DCF-model. The results of these two questions are summarized below in table 3.3 and 3.4:

	<b>Average</b>	<b>Median</b>	<b>Participants</b>
Dependent	25.0%	22.5%	6
Independent	33.8%	30.0%	8
Private Equity	35.0%	30.0%	5
<b>Total</b>	<b>31.3%</b>	<b>30.0%</b>	<b>19</b>

**Table 3.3 what is the average marketability discount? (Petersen et al., 2006, p. 45)**

	<b>Average</b>	<b>Median</b>	<b>Participants</b>
Dependent	2.6%	2.0%	10
Independent	3.0%	2.0%	10
Private Equity	3.3%	4.0%	3
<b>Total</b>	<b>2.8%</b>	<b>2.0%</b>	<b>23</b>

**Table 3.4 what is the average risk premium due to illiquidity? (Petersen et al., 2006, p. 45)**

In the cases where practitioners use the approach of applying a discount to the multiple or final value Petersen et al., found that the average discount applied was as high as 31,3%, shown in table 3.3. In context of an income approach, as shown in table 3.4, the participants add an average risk premium of 2.8 % to the discount rate due to the illiquidity in a private company.

Petersen et al., (2006) strives in their study to display a generalized discount or risk premiums applied by practitioners on the Danish market. They shed light on the differences between theory and practice and that this deserves more attention throughout further studies. (Peterson et al., 2006, p.46)

### 3.5.2 Vydržel Study

Another study that followed a design in line with Petersen et al., (2006) is the one conducted by Vydržel & Soukupová (2012) in Czech Republic. In their study they address the issues connected to valuation of privately held businesses with the purpose to provide data on how Czech financial advisors and private equity fund managers use valuation models that are comparable and reliable to prior studies. Vydržel & Soukupová focuses mainly on a DCF approach in their study, dividing it into four main areas:

- 
1. *Cash flow forecasting*
  2. *Cost of capital estimation practice*
  3. *Estimation of other individual parameters in the DCF model*
  4. *Application and size estimation of risk premiums*
- 

(Vydržel & Soukupová, 2012, p. 86)

The research was conducted through a combination of questionnaires and personal interviews. The target audience for the study consisted of private equity professionals, dependent financial advisors, and independent financial advisors. Out of 73-targeted participants 45 left a fully filled questionnaire (Vydržel & Soukupová, 2012, p. 87). They argue that privately held companies feature lower liquidity of their shares compared to publicly traded shares. In their study they expresses low marketability as when there are a limited number of buyers (Vydržel & Soukupová, 2012, p. 96). This is consistent with the common interpretation. The study shows significant differences in valuation methods in use between the groups of respondents. 49% of the participants use a DCF approach supported by a relative valuation (i.e. market approach). Private equity managers use the relative valuation as a core method and financial advisors prioritizes a DCF approach above a relative valuation. Of the private equity managers 61% adjusted their multiples for factors such as size, liquidity, premium of control and comparability. (Vydržel & Soukupová, 2012, p. 92)

Furthermore 45% of the respondents did not apply any discount that reflects the lack of marketability in a private company, 33% does deduct such a discount from the final market value. Another 26% choose to reflect the discount for lack of marketability as a risk premium added to the cost of equity. (Vydržel & Soukupová, 2012, p. 96)

### 3.5.3 Summary qualitative studies

The findings in these two qualitative studies provide further evidence that a DLOM in most situations is taken into account. Also, the estimated and subsequently applied discount differs between market participants (e.g. independent, dependent & private equity). What these studies don't provide is *how* and *when* a discount for DLOM is taken into account, neither where practitioners extract information and guidelines to support their decisions regarding DLOM.

After reviewing existing research both on how to quantify a DLOM and furthermore, qualitative studies, such as Petersen et al., (2006) and Vydržel & Soukupová (2012) which briefly address the issue of DLOM in a valuation of a privately held company.

We come to the conclusion that the research is scarce when addressing *how* and *when* practitioners handle the issue of DLOM.

In the following chapter we present our own conducted empirical data based on in-depth interviews with private company valuation experts on the Swedish market. In difference from earlier studies we are to enlighten the reader with *how* professional valuers on the Swedish market address the difficulty of dealing with illiquidity discounts (DLOM). Furthermore, *when* and *how* the experts practically estimate and subsequently apply a DLOM in a valuation of a privately held company. So far they're a no other study providing this kind of information, making our approach a retake on the issue.

## 4. Practical Method

*In this chapter we will provide the reader with detailed information regarding our practical method. This is given to reader in order to observe our way of prepare, perform and analyze qualitative empirical data.*

### 4.1 Research strategy

In beginning of this thesis we described our ontological standpoint, epistemology and abduction approach. This lead us into, as motivated, a hermeneutic point of view. Throughout our referential framework and in connection to our problem discussion we have developed four main areas to address via a qualitative approach; *when to consider, how to estimate, where to apply* and *how to justify a DL0M*. (Saunders et al., 2012, p. 163) In regards to our problem discussion and purpose with the study we argue that a qualitative study is the most appropriate research method. A qualitative approach is also very common when having a hermeneutic philosophical approach to science, as we do (Saunders et al., 2012, p. 163).

We are not generalize our results to a larger population, but instead provide an in depth insight and understanding on DL0M to generate suggestions to further studies. Meaning, understand *when* and *how* a practitioner handle the issue of DL0M. This further strengthens the reasoning as why we are to conduct a qualitative study. (Saunders et al., 2012, p. 171)

### 4.2 Research design

With research design we mean the characteristic of the study. The design is selected upon what seems to be the best way of answering our problem formulation and purpose. We choose to focus on separate in-depth interviews with practitioners on the Swedish market. This makes our design somewhat of a mix between a case study research and a narrative research. The case study aims to generate answers to question regarding “*how?*” (Saunders et al., 2012, p. 179) This corresponds to our problem discussion and a case study is relevant if one wish to gain an in depth understanding of the context. However when conducting an interview of this kind some narrative ingredient is also attached. We aim to capture real examples to understand the problems and issues behind DL0M. In some cases throughout the interview we aim make the interview object a storyteller. By asking questions such as: *can you give us an example of this situation?* We enable the interviewee to speak freely and give examples from experience (Saunders et al., 2012, pp. 187–188).

### 4.3 Interview manual

In our problem discussion we raise the question and the research gap concerning the ignorance of how valuation experts address DL0M in a valuation of a privately held company. When conduction research to our referential framework the objective was to create a solid foundation as to formulate an interview manual that we believed would solve our problem discussion. Our purpose with the interviews and a big reason as to why we choose qualitative interviews in the first place is to gain deeper knowledge as to *how* and *why* a DL0M is used the way it is. Therefore the design of our questionnaire will be based on points of discussion rather than precise questions. The discussion points we based our interview on were:



- 
- **Choice of method and approach towards a valuation of a private company**
  - **Concepts for discounts and premiums in a valuation situation**
  - **Methods in use to estimate and apply a DLOM in a valuation of a private company**
  - **Gaps in research concerning DLOM**
- 

These discussion points will all have questions and sub-categories to follow that we discuss in order to **solve our problem and answer our purpose**. The complete interview manual can be found in the appendix 1. We choose to conduct our interviews in Swedish. We did this in order to not jeopardize the quality of the material and to make sure that there would not be any misinterpretations throughout the interview because of either our or the interview objects usage of English.

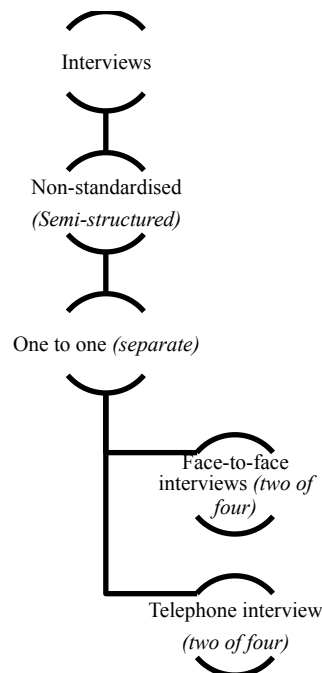
The interview manual starts with a walkthrough about the background of the study, the purpose with this is to ensure that the participants are in line with the setup of the interview and our perceptions. This is where we also go through certain concepts such as *illiquidity and marketability* and what we refer to with the expressions. In the walkthrough we also mention the possibility for our participants to have the option to have the transliteration sent out afterwards on request. We also presented that, if any respondent would feel the need to, at any time during or after the interview, one could change a statement or a given answer. Later on we pursue with a few start-up questions almost as a warm-up to naturally fall into the discussion points where we really put the focus of the interview and collect the data we will need for the problem discussion and purpose.

We believe that by having a discussion we will open up for a more relaxed environment and possibility for follow-up questions to assure that we collect information concerning our discussion points mentioned above. Even though this is a qualitative study there is a risk with having a too open questions, which can lead to a far too broad data collection and the focus can be unclear in the final report (Bryman, 2011, p. 100). This strengthens our argument of having discussion points with follow-up questions.

#### **4.4 Data collection**

In order to collect relevant information interviews were carried out. The interviews were semi-structured and can be classified as in-depth interviews. In the preparation we developed a question-scheme in order to keep track of what had been said and, when needed to, govern the interview in the right direction (Saunders et al., 2012, p. 374). The interview-manual were based on themes from our referential framework and problem discussion (See appendix 1). A list of themes were sent to the interview object a few days before the interview took place. Our interview-manual were based on these themes, but also contained questions in order for us to open up for a discussion (Saunders et al., 2012, p. 375). These questions were not known to the interview object prior to the interview. The combination of structure and flexibility in a semi-structured interview enabled us to go deep in certain areas and on the other hand compare certain answers between the interview objects. Saunders et al. (2012, p. 377), express that semi-structured interviews correspond to *exploratory* and, even more frequently, *explanatory* research categories, which are in direct connecting to our problem discussion.

All of the interviews conducted were audio-recorded so we could focus on the conversation during the interview and first later on transcribe the material. Depending on the geographical location of the interview object interviews were conducted by telephone or face-to-face. As we, the authors are based in Umeå, Sweden; the face-to-face interviews required us to travel to Stockholm city, Sweden. When the interview object was out of reach for a face-to-face interview, telephone interviews were conducted instead (Saunders et al., 2012, p. 375). As we see it, there are pros and cons in both face-to-face- and telephone interviews. In a face-to-face interview you develop a higher level of personal contact compared to a telephone interview. All of the face-to-face interviews were carried out in the interview object's firm's headquarters which can make them feel more comfortable, but on the other hand one could also argue that a telephone interview is even more comfortable. For example, one might think that the interview object can use prepared notes and answer more freely in a telephone interview. In a face-to-face interview on the other hand we, the questionnaires, are able to detect body language and gestures. Throughout our round of interviews we didn't detect any significant differences between these two ways of conducting relevant information. One must not forget that all of the interview objects are true professionals and used to have telephone-conferences which made the telephone interviews as much reliably as the face-to-face interviews. Figure 4.1 summarizes our data collection method as explained by Saunders et al. (2012, p. 375).



**Figure 4.1 Method of gathering empirical data**

A strategic decision where made regarding when the interviews took place. Even though we only conducted four interviews we choose to spread them out through a whole week. By following this procedure we were able to spend time analyzing the first interviews in order to improve the quality for the remaining ones. Under the working progress we observed some questions to be more relevant than others. A few questions needed more follow up questions and an exemplified situation by the interviewee. There were also some questions arising throughout the interviews in which we took with us into the remaining ones. Using this type of setup lead to an improved quality of the interviews themselves and the data collected in order to in a larger extent answer our purpose and problem discussion. In appendix 1 we have italicized the changes that have been made throughout our round of interviews. Hence, appendix 1 is the latest saved version of our interview guide. Worth mentioning is that no radical changes to our four main discussion points were made.

#### **4.5 Access and choice of interview objects**

Our choices of interview objects are partly a convenience selection and partly a goal-steered selection. In Sweden we appreciate that only a handful of professionals can help us answer the questions we are to conduct. These professionals are primarily those with a long experience and expertise from private company valuations. The professionals of interest for our study can primarily be found in the private equity funds and within the corporate finance departments in the large consulting firms. To us, students at Umeå University writing a bachelor thesis, it is fairly hard to as a first step engage contact with these professionals and as a second step convince them to support our thesis with a one-hour interview. One might argue that a bachelor thesis is of low priority in academic world due to the timeframe and level of knowledge. Analogues, this may result in professionals prioritizing higher degree studies.

This made us use our own connections within the industry as well as our study-advisor connections. We engage contact with eight practitioners on the Swedish market. As a first step an email where send and secondly telephone contact where established. In some cases we had the possibility to engage direct contact with the more experienced practitioner, but in some cases we first established contact with a more junior co-worker. Due to the attractiveness and complexity of the subject this resulted that the less experienced co-worker took further contact within the firm and with a more experienced valuation expert. This resulted in that a total of four professionals with expertise in private company valuation where willing to give an interview.

The access in regards to our problem discussion and purpose, as we see it, is very good even though four out of eight turned down our offer due to the lack of time. Our goal was to conduct a maximum of five interviews, but we decided to engage contact with eight practitioners as we predicted some shortfalls due to the lack of time and prioritization. Overall the access we gotten are very good, both in terms of literature and interview objects. All of the interview objects showed a high degree of positive attitude to our thesis subject.

Down below in table 4.1 are a quick summery of the interview objects, when and where the interview took place and our general impression of the interview.

Position	In our study referred to as	Date & time duration	Place & environment	Experience within valuation	Impression
Valuation consultant <i>Acompanied by an colleague of his team</i>	“The Executive”	24/11 – 14, 10.00 am, 53 minutes	Meeting room att the Company headquarters in Stockholm City.	26 years of experience from private company valuation at a large consulting frm. Working primarily with independet valuations.	A broad knowledge and experience of business valuation. Due to his broad knowledge he diucussed a lot of different aspects and opinions on the subject.
Valuation consultant	“The Director”	27/11 -14, 14.00 pm, 59 minutes	Telephone interview from a study room at KI.	15 years of experience from private company valuation at a large consulting frm. Working primarily with independet valuations.	Expressed great interest to the subject and seems up to date when it comes to research. Counters the subject on a daily basis when computing valuations.
Investment manager	“The Partner”	28/11 -14, 10.00 am, 72 minutes	Meeeting room at the Company headquarters in Stockholm City.	18 years of experience from private equity investments. Acting as exclusive advisor and performs dependent valuations to a Nordic PE-fund.	Tackled the subject in a simplified mather due to the dependency of a PE-fund where it is natural to focus on transaction pricing (“the right price”) rather then the valuation. Although when performing valuations the subject is discussed.
Valuation consultant <i>Acompanied by an colleague</i>	“The Analyst”	2/12 -14 15.00 pm, 63 minutes	Telephone interview from a study room at USBE.	10 years of experience in bussines valuation at a large conculting firm. Working Primarily with independent valuations.	The subject were of interest from the very intital contact. The issues and problems attached to DLOM where of great interest. Throughout the interview we also detected that the “analyst” had knowledge regarding earlier studies.

**Table 4.1 Summery of participants**

In general the “executive, director, partner and analyst” can be attached to a hierarchical order in for example a consulting firm, but they are simply made up by us, the authors of this study, to make the text more fluent and readable when presenting the results. In some parts of our results and analysis we will refer to *the consultants*, with this we mean: The executive, director and the analyst. This is done to simplify the presentation for the reader instead of repeating the made up names when they are united in some manner.

Furthermore, we do not put any distinction into what gender the interviewee might have when presenting our results from the interviews. We will always address the participants as: **He, His** and so on in order to simplify, even though the presentation of results is gender-neutral and anonymous.

## 4.6 Data-processing

As discussed above we audio-recorded all of our interviews. This gave us a total of 247 minutes (four hours and 17 minutes) of interview material. As a first step we transcribed all interviews to Swedish, which gave us a total of 48 (A4) pages of transcribed material. Later on when putting the results together, the text was translated to English.

The interviews were semi-structured, which gave us a more conversation-like atmosphere during the interviews, which is very good, although this way of conducting information results in very time-consuming analysis. In one interview we had answers to a specific theme 15 minutes into the interview, in another interview it took 45 minutes to conduct answers regarding the same theme. In order to organize and analyze the transcribed material it required a high degree of analytical thinking, dedication and accuracy from us, the authors. This also improves the level of respondent validation as we are two people going through the conducted data.

To analyze this qualitative material we adopted Ahrne & Svenssons (2011, pp. 194-195) way of *separate, reduce and argue in favor for* the material. As a first step we had to get intimate with the material. Resulting in several rounds of listening to the audio-recorder and later on reading the material over and over again (Ahrne & Svensson, 2011, p. 197). Secondly we *sorted* out the material under the given themes, moving answers from the interview objects to the same context. This counteracted the problem of disorder and chaotic formatting, which is important in order to move forward in an analysis (Ahrne & Svensson, 2011, p. 194). According to Ahrne & Svensson (2012, p. 194) it is not possible to “show it all”, which means that we had to *reduce* the material without losing any nuance or complexity. During this process we were extra careful so that the material reflected a fair picture of the interviews, but also our selectivity (Ahrne & Svensson, 2011, p. 202). Sorting the material makes it organized. Reducing it creates concentration and an edge. The third step is to argue in favor for the material, which distinguishes us from earlier studies and creates independence as authors. It is important for us to generate our own interpretation in order to contribute to the research area, although we are humble about the reverse; that earlier research educates us. Ahrne & Svensson (2012, p. 206) states; *one could argue that a thesis lacking the ambition to contribute to the research area cannot be rated as academic*. We would like to note that our empirical research is not a reflection of *reality*. Empirical data is rather a reflection of a *certain reality* created by the actors (valuation experts on the Swedish market) and subsequently us, the authors of this study. We don't strive to correctly present the reader with the *reality*, but rather reflect our conducted material as good as possible (Ahrne & Svensson, 2011, p. 202).

#### **4.7 Ethical aspects**

Early on when designing our research method we started thinking about ethical aspects that might become essential to consider. As mentioned in chapter 4.4 where we formed our research design, focus has been put on the importance of the participants being aware of the study's purpose and what their contribution will be to the study. This is important due to the fact that the participants must know what they are a part of and what type of information that we expect them to provide us with.

Certain ethical rules usually considered in research studies like this is attached to areas such as; *free willing or optionality, integrity, confidentiality* and (Bryman & Bell, 2013, p. 137). Before starting the recording of the interview we briefed the participants with the purpose of our study and what contribution we expect from them. We explained that if anything were unclear or if they became uncertain they could, at any time, cancel the interview or alternately contact us afterwards if they misinterpreted any question or wanted to change a statement that might have come out wrong. We also explained that we choose to keep all participants anonymous throughout the study, which we explain in the walkthrough before starting the interview and the audio recording.

Bryman & Bell (2013, p. 137) mentions five principles as an example for different factors to consider when conducting an interview, these are; the *information, approval, confidentiality, utility and false reflections demand*. Below we will go through how we have considered these demands and how they can come to affect our study.

**The information demand** stresses the importance of informing the participants with the purpose of the study. Also making sure they are aware of the different moments in the research. (Bryman & Bell, 2013, p. 137) We address this aspect by our way of reaching out to the participants before the interviews. As earlier mentioned we've had contact over telephone explaining the purpose of the study and the reason as to why we conduct interviews. We also sent the participants the discussion points (shown in appendix 1) by e-mail before visiting them and conducted the interview. This way we made sure that our participants were fully informed of the study and what different moments will be involved, as well as their part in it.

**The approval demand** aims to express that the interviewees freely approved of participating in the interviews and that they, at any point during the interview holds the right to cancel or raise questions (Bryman & Bell, 2013, p. 147). By having our walkthrough before starting to record we had the opportunity to inform our participants that they hold the right to either cancel if they felt insecure or afterwards contact us with eventual changes to statements and answers that they have given.

**The confidentiality demand** informs the participants that all personal or work related information about them will be handled with most respect and anonymity. Also all of the material collected is important to hold confidential (Bryman & Bell, 2013, p. 150). As earlier mentioned the participants will be held anonymous and all information collected will be handled with respect. We've been careful during the study when discussing the participants by not mentioning their names or the company they work for in public. We value this demand highly since we believe that the respondents will feel more confident when answering our questions. Much to ensure that they can feel free to answer on their behalf and not taking firm specific aspects or information that might be sensitive in consideration. Also we strive to receive examples of situations where they might address the issue and therefore we also hold customers and client names given in example anonymous.

**The utility demand** means to treat all collected data with respect. Meaning, the information we gather will only be used for the purpose of the study and nothing else (Bryman & Bell, 2013, p. 155). This is an important demand that we haven't reflected much about. For us it has always been clear through the whole research that the data we collect will only be used for the purpose of the study and nothing else. This is also something we have informed the participants about.

**The false reflections demand** addresses the importance of a researcher to never provide the participants with false or misleading information about the research that might come to affect their participation (Bryman & Bell, 2013, p. 152). Before performing our interviews we made sure to be very informed on the subject and that we were read-up on current research and methods considering DLOM. This is also one of the reasons as to why our referential framework is so comprehensive. When conducting the interview we started a discussion with relatively open question to get the participants to answer out of their perspective and experiences. This was to avoid informing them of our interpretations of methods and also grasping their viewpoint. We

then started follow-up questions if we felt that we needed more data/information to handle our problem discussion. In this way we avoided leading questions where we hand out information about how researchers has handled the subject and also to avoid giving our take that might be reflected by our personal views.

Overall we argue that ethical aspects have been taking into consideration, which permeate our research as a whole. We strive to conduct such a precise and true research as possible and therefore we want to uphold the ethical aspects to reflect the participants as true as possible.

## **4.8 Demarcation of empiricism**

When we have conducted our empirical data, we have limited our interview objects to professionals within valuation. Not just the ordinary corporate finance professional, but specifically those working with private companies. As explained earlier in this chapter we interpret that only a few possible interview candidates for our study exists in Sweden. We are limited in our choice of interview objects to the largest consulting firms, PE-funds and their head-divisions. Hence, we are limited to primarily Stockholm City. We are confident that these demarcations will lead to solving our problem formulation and answer to the second part of our purpose with this study.

## 5. Empirical results & analysis

As given by our referential framework and to interpret our interview material four main areas were identified as the very core issues on *when* and *how* professionals working with valuation manage the DLOM in practice. The first area to address is **when to consider** the discount. Depending on the purpose of valuation and the specific situation (meaning dependent or independent), appropriate situations to consider the DLOM may vary. If and after having concluded that a DLOM is to consider for one specific valuation case one has to analyze the situation to be able to **estimate the discount** which is the next area of our result presentation. Different studies have been conducted trying to pinpoint and quantify a DLOM and professionals may take ground from these studies in their estimation process and/or seek comfort in how others in the industry practice DLOM. Where in the valuation process practitioners **apply the discount** is the third area to address. Depending on what valuation method used it may vary on where to apply the discount. How do we argue in favor of the applied DLOM to that particular valuation subject? You may need to **justify** as to why the estimated DLOM is suitable in that particular situation to for example a stakeholder or tax court. Comfort in how to motivate the discount and what courts may approve might be two different things. To summarize, we will present our results and analysis in accordance to the four areas in figure 5.1. In order to emphasize the interviewee's roles and professions we recommend going back to chapter 4.5 *access and choice of interview objects* and table 4.1 *summary of participants* to clarify how we refer to them.

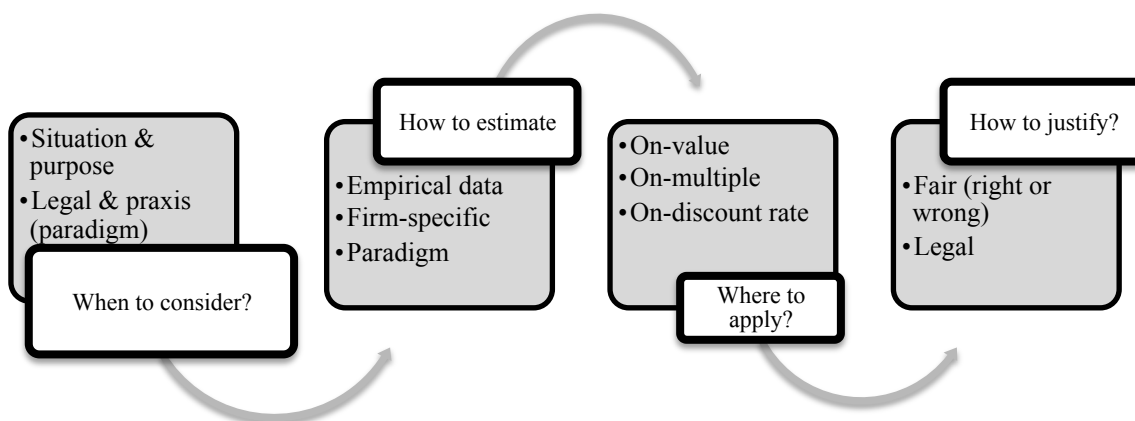


Figure 5.1 Areas to address



## 5.1 When to Consider a DLOM

In what type of situation do professionals working with valuations apply a discount to compensate for illiquidity? Depending on the reason, purpose and not least the business being valued, a discount may or may not be appropriate.

Business valuations and the estimation of a company's value is a matter of different assessments and approximations. Valuations may differ depending on the evaluator and what presumptions he or she makes during the valuation process. Furthermore there are a variety of different reasons as to why a valuation is being carried out in the first place. Pratt (2009, p. 8) emphasizes the importance of taking the purpose of a valuation into consideration when deriving a value. The **executive** explains that he encounters different reasons and purposes to conduct a valuation, such as; *an acquisition, tax purposes, disputes, accounting reasons and internal value discussions*. The **director** and the **analyst** refer to the same purposes above as to why a valuation is being conducted. *Bonus programs* are also being mentioned and the **analysts** expresses “*that there are a lot of different reasons as to why a valuation is being conducted and that these come to affect your approach towards a valuation*”.

The **partner** being interviewed in this study works for a PE-fund where the concentration is put on achieving the “right price” rather than a precise valuation. “*Due to the fact that no immediate market value exists in private company we will try to acquire the company based on a valuation as good as possible, meaning buy as cheap as possible*”. Therefore he differs in his opinion and doesn’t conduct detailed valuations for a variety of reasons and rather uses a valuation as a benchmark before a transaction process. Worth mentioning is also that all of the acquisitions and transactions done by the PE-fund are on *majority interests*. He is familiar to a transaction process that recognizes two dependent parts, one wanting to buy as cheap as possible and the other strive to sell at a certain price or as expensive as possible. “*In this type of situation, naturally the buy-side would argue for a discount on price and the sell-side won’t.*” Petersen’s (2006, pp. 44-45) findings when interviewing consultants and PE-funds was that 19 of the participants applied a discount to the final value when deriving the market value of a company, meaning not taking the question of majority or minority into consideration which agrees with the **Partners** approach.

So the question of when a DLOM is appropriate to use in a business valuation depends on the purpose and the reason for a valuation. What we learned and take with us is that a business valuation is used in a lot of different contexts and that the reason is a critical aspect to grasp. Depending on the reason as to why you conduct a valuation you enter the process with a certain approach. Valuing an asset or company before an acquisition or transaction for an external part is not the same thing as a valuation for internal transactions within a family or when an asset is valued for tax purposes. The **executive** strengthens the reasoning; “*It is a great difference between finding the right price and the right value*”. This is important to consider, there is no exact framework as to how you always perform a valuation. This underlines the statement that every valuation situation is unique. Throughout the interviews we verify that; *according to our interview objects every company is unique and based on our objects experience the assumptions and approximations used in a valuation will differ depending on the situation and the business being valued*.

In an independent valuation situation, which the **consultants** most frequently do, the first step is to evaluate the specific situation. We find that the type of valuation that one is to conduct is crucial. Meaning that you need to determine if the valuation will yield a matter of *illiquidity or not*. Characteristics and factors tied to the specific company are always to be considered. Damodaran (2012, p. 684) also discusses the matter of company specific factors and how these affects the level of a DLOM.

*“The problem with premiums and discounts is that no companies are ever the same when it comes to illiquidity, not even on the stock market”*

-The **executive**

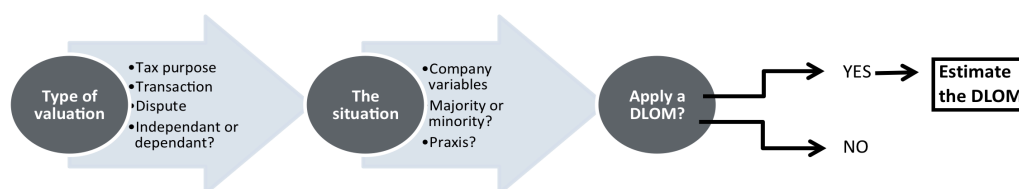
Therefore how a valuation is being conducted depends to a high degree on the company itself and what is being evaluated. What was anticipated among the **consultants** was that it seems to be praxis in Sweden among independent consultants to disregard a discount when valuing a majority interest. The **director** gives ground for this praxis by explaining that; when they compare a private to a public company what they compare is an *illiquid majority interest* (private) to a *liquid minority interest* (public). Therefore he motivates that the premium of control in the private company swallows the illiquidity discount when moving from one base value to another. Recall from chapter 3.3.1 **Levels of value** and **figure 3.1** when describing levels of value.

*“...In a hypothetical scenario we are of the opinion that it is no difference between a private and a public company. We make the assumption that the public shares are a minority interest and the private company shares are a majority interest. In that situation we have a control premium for the majority while on the other side the public company shares are liquid. While the private company shares are illiquid the premium that exists should take out the discount.”*

-The **director**

The **executive** and **analyst** use the same praxis and assumption but doesn't motivate to the same extent as to why this praxis exists on the Swedish market.

The figure 5.2 down below summarizes our analysis of the process that lays the foundations of when to consider a DLOM.



**Figure 5.2 Consideration process**

In the referential framework of this study we presented how the DLOM is used in foreign countries. Specifically the Anglo-Saxon countries, Pratt (2009, p. 201) discuss the U.S. Tax Courts take on the issue. This seems to differ from the Swedish praxis mentioned above; *that a control premium would take out the illiquidity discount*. The **director** informs us that studies from the U.S. and England show that they remove two

discounts when valuing a private company, one for the *minority* and one for the *illiquidity*. When valuing 100% of the shares in a private company they remove a discount for illiquidity which praxis in Sweden say that we shouldn't due to the control premium. The **director** verifies that there is a disagreement towards this.

*“The British and Americans doesn't agree with us about the fact that there is no discount, instead they add a discount on a private company compared to a public. This makes you wonder, is it relevant what we do in Sweden. I know the Germans have same approach as us”*

-The **director**

Further into the interview the **director** exemplifies a situation where in the same consulting firm; the Swedish and the British offices performed a valuation on a majority interest of the same company. The British office applied a discount for illiquidity, which the Swedish office didn't.”

We think that the argumentation about how you handle certain situation in different countries is reasonable. Consulting firms based in Sweden can in certain areas differ in how you handle certain issues compared to how you handle these issues in for example U.S. and Britain. This can be due to, not at least, legal frameworks, but also routines and praxis that consulting firms follow in order to create a benchmarks for how one should handle certain complicated factors, such as illiquidity discounts. The **executive** says that *“The problem as I usually say is, which concerns valuation. As in many situations can be a comfort. As long as I do it the same way as everyone else, I do it correctly.”*

What we conclude is that how you treat the DLOM differs between countries. Even at the same consulting firm you use different approaches between countries. By establishing a sort of praxis in Sweden, that an illiquidity discount shouldn't be applied on a majority interest, valuation teams will handle the matter in a similar way within the country. This is a reasonable argument for how they treat the discount and when to consider using it.

In difference from the independent consultants the **partner**, working for a PE-fund, which solely acquires majority interests, use illiquidity discounts on majority interests. He expresses that a discount for a private company is granted. In a transaction process he sometimes encounters entrepreneurs with, as he express it; *“completely unreasonable valuations for their company”*. In these situations he argues that a private company differs from a public in a variety of different factors, such as; *better structure* in a public company, *liquidity*, *size*, *weaker economic functions* and *lower customer stock*. These factors need to be compensated for even though it's a majority interest.

Grasping all of the interviewed practitioner's perspective we've gotten a lot of different perspectives prior to a valuation. The importance of identifying the specific situation is consistently the initial matter to consider in the process of a valuation.

The **consultants** are of the opinion that the illiquidity is something that exists in the company shares and not the company value as a whole. The **director** was very clear on the fact that, at their firm they don't add an illiquidity discount to the company value (100% of the shares) and that the control premium takes out the discount for illiquidity

that is connected to the shares. The **executive** wasn't as clear but stated that *"We rarely add a discount on a majority share, for example in a dispute both parties brings all kinds of premiums and discounts to the table and tries to argue for those. Therefore it's more common not to use an illiquidity discount when valuing a majority interest"*.

### 5.1.1 Minority interests

Focusing on minority interests in a private company, this is where the **consultants** more commonly discuss a discount. In this part we leave out the **partner** due to the fact that they only acquire majority interests to their PE-fund.

All of the **consultants** share the opinion that the first and foremost aspect to look into when it comes to company specific factors is the *shareholder agreement* and *articles of association* where restrictions and arrangement may be committed about how for example a minority shareholder should be handled. The **director** says *"For example it can be stated that the minority holds the right to cash in his shares to market value - in reality that means no discount. So this is an important part to consider."*

Further the **executive** and the **director** emphasizes the struggle that might come with selling a minority interest. The **analyst** expresses that a big part of the explanation to the DLOM is that when you buy a minority you need to be compensated for that. The **analyst** says, *"The reason to some extent that there is a discount is to attract more investors."*

In the discoveries that Pratt made in his book he comes to the conclusion that there is almost never a questionable doubt that a DLOM is appropriate for minority interests in a privately held company due to the lack of a ready market and therefore lack of liquidity. He also mentions the lack of control as a part of making the shares less attractive to acquire. (Pratt, 2009, pp. 6-7)

We learn that when it comes to valuing a minority interest the illiquidity is a matter to consider. Although not in every situation a compensation for illiquidity is suitable. Consistently one has to consider the certain situation and when it comes to minority the shareholder agreement is the first thing to view before looking into other factors. In the next chapters we will go through what factors that are of interest and how a DLOM is estimated and subsequently applied.

## 5.2 How to Estimate a DLOM

Earlier in this paper we asked the question; what do all of these studies trying to quantify a DLOM contribute to in the subject of illiquidity discount? All of the participants seek, in one way or another, some kind of starting-point from which a DLOM can be derived. As discussed earlier one cannot generalize, every situation is unique and the applied DLOM can in fact vary in every occasion. In Kooli's study (2003, p. 54) he comes to the conclusion that when valuing a private firm and estimating a DLOM analysts should be careful during the process. He also argues that the DLOM is likely to vary across companies and buyers, which he uses to argue for the rule of thumbs being useless. In regard to Kooli et al., as a reference we were interested in see how professionals argue for a rule of thumb and how they estimate the appropriate level of a DLOM.

The **director** said; *“It depends on how difficult the illiquidity situation is and for some small private companies a 3% minority interest may grant a 50% discount for illiquidity”*

The **executive** always has a basis in an average percentage rate conducted from all studies and approaches. *“We actually seek guidelines in all studies; I don't see any studies that I think are better or worse”*. He tells us that they often use a discount rate of around 30% as a starting-point, *“This is the average on the average conducted from the studies, and this is where we stand, where almost everyone stands”*.

The **director** is of the same opinion; *“There are some studies we use as a starting-point, American studies”* the **director** continues to explain that they first identify a span of discounts in this kind of studies. This gives them a hint of how large the discount tends to be. *“We find a span, let's say 0-50% and then we evaluate where it is appropriate to be within this span in this particular situation”*. Furthermore he informs us that frequently applied discounts tend to end up between 10-30%.

The **analyst** describes a similar process; *“We look at studies to come up with a span, let's say 20-30% discounts, then we apply what seems appropriate in that particular firm-specific situation”*

As already discussed the **partner** finds himself in a rather different situation due to his dependency when valuing a privately held business as an investment opportunity. We find that they use a 25% discount as a benchmark for the illiquidity in a private company. *“A long time ago I learned that when driving multiples from listed peers the appropriate discount is around 25%, this has been the case throughout the years, when discussing this matter with the banks”*. Furthermore he express that there is no accuracy in this percentage rate, it is more a question of “give or take” when estimating a discount to reflect what they are willing to pay for that particular investment.

*“From time to time we discuss it internally, but it is not that concrete, it is more a question at what value the fund is willing to invest”*

*-The partner*

The **partner's** interpretation of DLOM was that business practitioners search for an established truth and that 25% discount is common in these situations. When asking if he perceived illiquidity to be associated with risk he answered; *“yes, absolutely! The price we buy at will represent what we think of the possible outcome when divesting in the future.”*

We can conclude that all of the **consultants** seek guidelines in studies to have some kind of starting-point to move around from. The **partner** do not seek guidelines in studies, but even though it is somewhat far-fetched, a 25% discounts as a benchmark is in line with the other participants in our round of interviews.

The **executive**, as mentioned above, seeks guidelines in all type of studies and from that conducts an average. When we ask which of the studies the **director** prefers, he favors the “letter stock” studies, which we have referred to as the restricted stock approach earlier in our referential framework.

*“I have always liked “letter stocks studies” because they are so clean. You have two stocks that are equally except that you are not able to sell one of them. The pre-IPO studies must in fact bear some kind of measurement problems; I mean something must have happened to the company before and after the IPO. These transactions are not comparable, you don’t have apples and apples, and with letter stocks the only difference is liquidity.”*

*-The **director***

This is an interesting statement from the director since Robert Comment in his restricted stock study from 2012 mentions that one of the more common mistakes is; *“The mistake to assume that discounts in private placements of restricted stocks are tied solely to restricted marketability since discounts also occur in private placements of free-trading shares.”* (Comment, 2012, p. 81) Also, Finnerty (2013, p. 576) is of the same opinion as Comment and address that: *“transfer restrictions only partly account for the discount.”* Which argues against the director; that marketability only explains a part of the discount when looking at letter stocks. Furthermore, Finnerty (2013, p. 575) address the discount obtained from these letter stocks as *the private placement discount* rather than DLDM.

The **analysts** accompanied colleague express that from his view John D Finnerty’s model is frequently in use when estimating a starting-point of an isolated DLDM. In our referential framework this study is briefly introduced. In some way we share Finnerty’s view of tackling the subject of DLDM, he performed rigorous tests to significantly prove that his empirical findings were consistent with an average-strike put option model. This strengthened his reasoning, but on the other hand we still miss the aspect of firm-specific factors and a more synthetically presented model.

As we also have understood and discussed, there are several approaches and methods published in order to determine the level of a DLDM. The fact that there are so many different studies to examine makes it very time consuming to analyze all of them. Thus, our perception is that the consultants tend to look for an average span of discounts conducted from several different studies for guidelines. The **analyst** concludes that; *“the problem is that you don’t have the time to examine all of these models”*. The other **consultants** expressed the same problem, time. When making a selection between all of these studies one could argue that the selection itself is subjective even though the data in the studies is objective. Thus, we can question if the level of illiquidity discount in the same company would be the same depending on who’s running the valuation.

Even though the **director** and his team seek guidelines in quantitative studies he also states that the internal factors, the firm-specific factors, are the most important ones. *“I don’t like the versions where you in general look to the studies, derive a span of discounts, let’s say 20-50%, and then simply apply the average, 35%”*. The other consultants responded similar to these questions, which convinced us further that a derived span or an average is used as a starting point, and that firm-specific factor decides in which direction you go. This agrees with Bernström (2014, p. 6) when he states that differences such as size, business risk, profitability and future growth potential, among other things, must be considered when making appropriate justifications in a valuation.

After having conducted a starting-point the next step is; according to the **executive** to decide if one must diverge from the general. It is important to analyze and think of the

firm-specific variables of the particular valuation subject, such as the purpose of the valuation, the shareholder agreement, pre-emptions and trading restrictions. Also one must bear in mind the overall state of the market, the possibility of IPO's and transactions in that particular branch. The possibility of a future IPO means that the current shares in a private company will become liquid in time with an IPO. Emory argues for the fact that a greater discount is to be considered for those companies that doesn't bear evidence of being sold or having an IPO any time soon (Emory Sr & ASA III, 2002, pp. 190-191). According to Hitchner (2011, p. 368-369) an industry where many acquisitions have taken place lately is assumed to have some level of marketability.

*“One must determine how liquid or illiquid the equity is, how is the articles of association computed? How is the ownership structure in the company? In fact, what are the possibilities to sell these stocks?”*

*-The **executive***

The **executive** continues; *“It is very hard to calculate your way to an appropriate discount, if one decides to apply a 20% discount instead of a 30% discount there is no science behind that call”*.

The **director** follows the same path as the executive, *“the estimation of discount is as everything else in a valuation process, an appraisal”*.

As described above the director, the executive and the analyst only apply a discount to minority equity interest due to the paradigm on the Swedish market. The **director** pinpoints some variables affecting the estimation of a “minority discount”. *“The next step is to determine to what extent the minority can influence a decision and govern the operations in the company, also how the majority exercise their control power”* factors like dividends and if the company is efficiently govern can be considered. Furthermore, exit-plans are according to the **director** the most important factor driving the DLOM.

*“For example, the starting-point of is given by these earlier quantitative studies, let's say we find that the span of discounts lies within 20-50%. In this particular case we considered the fact that the owners of the company planned to sell the company in one year. This means we should end up in the lower regions of this span between 20-50%. Maybe the company has a large amount of cash. You always try to find those factors reflecting our choice of discount.”*

*-The **director***

The **director** continues with another example, *“If you ask the question to the owners of the company; do you have any exit-plans? And they answer; yes, we plan to do an IPO in six months from now. This would imply a low minority discount, I mean do you really think that a minority equity holder would sell his shares at, let's say, a 50% discount instead of waiting six months and instantaneously get 100% of the value.”*

According to the **director** this is why you as a consultant must ask this kind of questions. Another example is taken where a family business goes on and on to the next generation and that this would imply a large discount for a minority equity holder due to the illiquidity. The **director** states; *“This is probably the individually most important question to ask”* and refers to the question about exit-plans.



The **analyst** refers to similar factors as the other consultants, but also the size of the minority interest. *“If there is someone who owns 99.9% of the company and you as an investor buys 0.1% of the company you can expect the discount to be in the upper bound of illiquidity discounts”*

Furthermore, the **analyst** discusses the company’s internal market and the size of the company as driving factors; *“Maybe there can be as much as 1000 shareholders in the company which implies that you can expect some kind of internal market between those shareholders”* this will contribute to a higher level of liquidity in the private company. A large private company is also likely to be more attractive to investors. This also goes in line with Bernström who states that company specific situations are to consider in the process of applying a DLOM (Bernström, 2014, p. 14).

*“Take IKEA for example, the possibility of finding investors is probable greater for a company like IKEA then for some tiny company”*

-The **analyst**

The examples mentioned by the analyst are fit into the more extreme category and is not comparable to a normal situation. The point we get to assume that he is trying to make is that: a small minority interest in a private company will not yield additional control to the majority interest holder; therefore you might have to apply a discount in order to attract the buyer. Furthermore, the more number of shareholders in a private company the higher the likeliness of selling your shares internally and also a big, well-managed and wealthy company is more attractive to acquire than the opposite.

Throughout our referential framework researchers mention several firm-specific factors. Damodaran (2012) and Kooli et al., (2003) states that size of the company affect the size of the discount, this is approved by our conducted interviews. Mercer (1997, referred to in Hitcher, 2011) states that the opportunity for minority interest holders to influence decisions is a factor to consider when evaluating a discount is also approved during our interviews. Damodaran (2012), Emory (2012, referred to in Reilly & Rotkowsky, 2007) and WMA (2012, referred to in Reilly & Rotkowsky, 2007) discuss the possibility for the company to go public in the future as a prominent factor affecting the applied DLOM which all of our questioned **consultants** agrees upon. We can conclude that there is no question about when it comes to estimate a DLOM, the firm-specific factors is the most important ones.

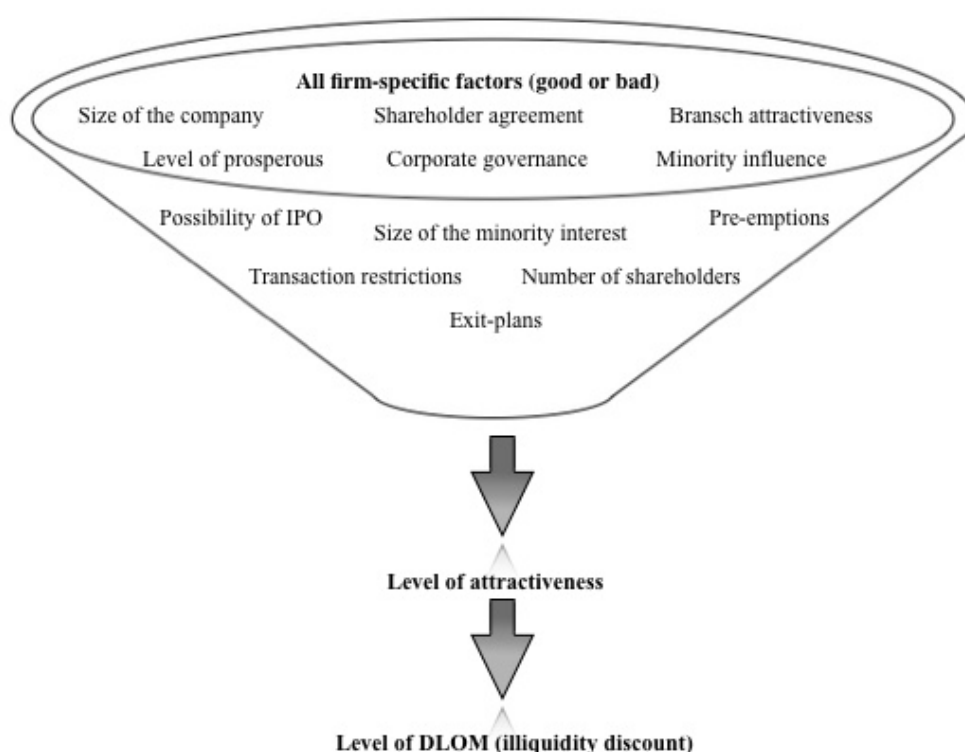
The **analyst** states; *“This type of valuation questions; what is the correct market-driven illiquidity discount? No one knows that’s just the way it is, black on white, it depends, and it has to depend. I don’t know if the world would get any more fortunate if 100 new studies pops up and says; this is the way it should be.”*

If we take it to the very beginning we would argue, based on our interpretations of the referential framework and conducted interviews that liquidity on a marketplace is driven by to which extent there is a “ready market”, how large the “turnover” is and subsequently the essence of supply and demand. In the context of private companies you estimate a DLOM to compensate for the lack of potential buyers, we would argue that the lack of potential buyers has to do with attractiveness, and attractiveness is driven by firm-specific factors. The attractiveness that comes together with company



specific factors and circumstances is something that Pratt argues for as a part of making the company more or less attractive. (Pratt, 2009, pp. 6-7).

All of the questioned practitioners in our round of interviews inform us with several firm-specific factors that could and from time to time, depending on the valuation subject, affect the estimated level of DLOM. Based on this we further argue that the quantitative studies presented in our referential framework only strengthens the proposition that liquidity matters which in turn can result in both value and price differences. A practitioner should be very careful when generalizing and conducting quantitative guidelines from these studies even as starting point of an estimation process. This is due to the fact that studies are conducted through different timespans and with different methods, which will affect the outcome of the DLOM. Figure 5.3 pinpoints our interpretation regarding the issue of estimating the appropriate level of DLOM based the interviews we conducted. We think this interpretation is somewhat in line whit especially Damodaran's bid-ask spread approach (Damodaran, 2012, pp. 684 & 687), but with a wider perspective when observing firm-specific variables. Consequently we think that this will generate interesting ideas to further research.



**Figure 5.3 Interpretation of the estimation process**

### 5.3 Where to Apply a DLOM

All **consultants** value the business entity as a first step, the most common method in use is the income approach and a DCF-model in particular and then to complement and reassure the derived value a market approach is applied. Vyrzel et al., (2012, p. 92), Petersen et al., (2006, p. 45) came to the same conclusion. When applying or deducting

a DLOM all **consultants** are in favor of deducting a percentage rate from the final value. All participants mention the fact that illiquidity is assignable to the equity and the stocks in particular. This meaning that the value of the entity (i.e. enterprise value) is first reduced by the net debt to get the value of the equity and thereafter a DLOM as a percentage rate is deducted. We are convinced that this is the case because questions to confirm the reasoning were asked.

*"We value 100% of the business as a first step, and then in step two we compare the value with liquid minority interests (i.e. listed peers)."*

-The **director**

This follows the **directors** generalized reasoning and the paradigm on the Swedish market. The **director** continues:

*"In the third step we ask the question what are those nonmarketable minority shares worth? This is where we take illiquidity discounts into consideration. We never include illiquidity in the WACC, it has come to my attention that some does just that, but I don't think it is suitable, if you add a risk-premium due to illiquidity you cannot compare the final value with listed peers as in step two. If you keep those two apart you have "apples and apples" as long as possible."*

-The **director**

The **executive** is of the same opinion as the **director**. However, even though the **analyst** favors the same way as described above he states that one may also be able to reflect the DLOM in the discount rate:

*"You could to both actually, in practice I think you do the enterprise value as a first step, thereafter you add all premiums and discounts, but you could theoretically imagine that it would not yield any difference."*

-The **analyst**

The classic mistake is according to the **executive** that you add all kind of discounts and that it tends to result in double counting. If you use the deduction-on-final-value approach this pitfall is cleared. Comment addresses this in his skeptical study towards quantifying a DLOM from the restricted stock approach. Comment is doubtful towards adjusting for illiquidity as a type of risk. Similar to the **executive** arguments regarding double counting Comment means that if it had been a risk it would have already been adjusted for in the firm-specific factor affecting the discount rate. (Comment, 2012, p. 80)

The **partner** uses a discount on the derived multiple from the listed peers, which does in fact yield the same result if you use a market approach, only the comparableness is interrupted. *"If we look at listed peers and derive an EV/EBITDA of 8, well then we use  $8 \times 0.75$  as the final multiple."*

As the **partner** and his team only invest in majority interests, who in turn implies that they, if they, use a discount of 25% for illiquidity naturally would deduct it from the multiple derived from the listed peers, making it represent a nonmarketable majority interest. We confirmed this reasoning by asking -does this discount of 25% reflect the

lack of liquidity in a majority interest? We received the answer: *“Yes, precisely, in our situation it does”*.

This goes against the earlier interpretation we had on the paradigm on the Swedish market. All of the **consultants** is united when not deducting any DLOM due to the control premium in the valuation of a majority interest. To add to this reasoning the **partner** said that terms such as *control premiums* doesn't exist in the context of a negotiation. *“The sell-side doesn't use these terms, they rather present a value, for example; our company is worth 500 MSEK”*

Although this is an interesting discovery one must not forget that the **partner** is dependent in his valuation and the consultants most frequently are independent in their valuations. Again, the **partners** purpose when computing a valuation is not to find the independent *market value*; instead it is more a question of price than value. Vydržel & Soukupová (2012) and Petersen, Plenborg, & Schøler (2006) in their study's also conducted information from private equity and dependent analysts. These studies don't focus on the differences between majority and minority interests but it is interesting to see further evidence that most private equity and dependent practitioners in fact deduct a discount to reflect the lack of marketability. (Petersen et al., 2006, p. 45); (Vydržel & Soukupová, 2012, p. 96).

We can conclude that all **consultants** favors the same approach when applying a DLOM to the valuation subject, to some extent we can conclude that the **partner** use a similar approach, only they use this for majority interests rather than minority interests.

#### 5.4 How to Justify a DLOM

All participants in our interview round shared the same opinion regarding how to motivate an illiquidity discount. In general it is not hard to argue in favor for a discount due to illiquidity, the problem is how large the discount should be and when it should be considered.

When talking about minority interests the **director** states:

*“I have myself discovered how hard it can be for a minority interest holder in a private company to sell the shares. If you were to explain to an employer; who would be interested in buying 10% in this company, turnover at 20 MSEK, with headquarters in the middle of nowhere? In that moment most people understand that it will be very hard to find them a buyer and the seller realizes that a discount on price is reasonable to find a willing buyer.”*

-The **director**

This reasoning followed us in all of the interviews and all participants are of the same opinion. In context of majority interests the **partner** states; *“It is not hard to motivate in favor for a discount due to risk of not being able to sell in the future, the difficulty to sell a private company is accepted and commonly known”*

Even though it seems clear that when dealing with minority interests, a discount is applicable and appropriate, during our interviews we discovered that certain legal situations might not approve of a DLOM being added. All **consultants** referred to

redemptions (buy-backs) and that no discount is granted in this matter according to legislative text. That is when, for some reason, majority interest holders redeem (buy-back) minority interests in accordance with the Swedish companies act (ABL). The reverse is also possible, when a minority interest holder desire the majority interest holder to redeem (buy-back) their equity interest. Both the **executive** and the **director** himself had been in these types of situations. The **analyst** said that the issue were known, but he had not been in any situations himself.

Furthermore, the **executive** reasons were more of what's tending to be fair in these legal situations.

*"When it is stated in the agreement that some owner can redeem minority holders equity interest to the market value; is it actually fair to use an illiquidity discount? In reality it shouldn't. The minority equity holder should get his share of the company. But now we are into the legal questions of what's right or wrong. On the other hand one could argue that if we are to derive the market value, an illiquidity question will arise."*  
-The **executive**

The **director** also considered the issue in regards to the legislative text and market values:

*"It is interesting that legislative text states that no discount should be applied in this type of situations, it should be to the pro-rata value. But I can on the other hand imagine that if we are talking about market values the liquidity should be considered. But the perception is that, as we have understood, the courts don't allow any illiquidity discounts in these situations."*  
-The **director**

Additionally the **executive** discussed how the Swedish tax court grant illiquidity discounts: *"This is not yet concluded, sometimes they allow a discount, and sometimes they use it themselves. There is no precedent to build your argument from."*

We find that when standing in front of a court, or a client, arguing for a discount and communicating the value of the company in question the rationale from where the information comes from is important to all of the participants in our round of interviews. Even though, as discussed earlier, firm specific variables seem to be the most important ones, a good foundation from empirical studies is favorable.

All of the **consultants** are united when discussing how to motivate a discount. They use statistics and studies as a starting-point to boost the argument. The **executive** states; *"It's good to have some studies to dwell on, it gets easier and you create some security in your reasoning. Instead of just saying, I believe that... It's better to use statistics."*

The **analyst** points out an interesting thought regarding empirical studies and arguments in favor for a DLOM:

*"Some practitioners use formulas for everything and some of those take shelter in formulas nobody understands. In our situation as a consultant we have to be able to explain and motivate our derived value of the company, why we think it is worth exactly that much. To reason about an option-pricing model and a protective put strategy in the*

*context of illiquidity discount is somewhat far-fetched. Explaining a cash-flow model and the discount rate is difficult enough. It is important to have credibility in this industry and to understand that the general market participant is not typically a valuation expert.”*

*-The **analyst***

It is no question about how complex this situation is. As a first step we understand that a practitioner use studies and empirical evidence of DLOM to boost the argument. On the other hand, it seems to be a fine line of which studies that can be used and not. The consultant must have time and capacity to grasp the studies available in order to use in their arguments. Once again, theory is one thing and reality is another.

To reconnect to the paradigm and the praxis between consulting firms on the Swedish market regarding majority interests we conclude throughout the interviews that a practitioner should be conservative when generalizing in a valuation. The situations and companies being valued are never the same. With this said, we find that to generalize and say that DLOM should not be considered when conducting an independent valuation of a majority interest in private company is a strong assumption. That is, in every situation the premium for control swallows the illiquidity discount. Both Pratt (2009, pp. 6-7 ) and Bernström (2014, p. 15) express that this could be the case in some situation, but not in every situation have to be so. In their research they explain that a DLOM is more commonly used on minority interests. But strengthens the fact that every valuation is unique and should be based on firm-specific factors, which could provide a DLOM even on majority interests.

The **director** points out interesting thoughts about this issue:

*“I think we in the consulting industry are making things easy for us when concluding that there is non-illiquidity discount for majority interests, that there is no difference between a marketable minority interest and a nonmarketable majority interest”*

Our interpretations were that the **director** expresses some kind of frustration regarding the issue. During the interview he informed us with an interesting question; what level of value is actually derived from a DCF-model? As all of the consultants we interviewed use this valuation method to a large extent when in the first step values the business entity we took this question with us to the later interviews. The **director** states:

*“Is it like we say in Sweden, an illiquid majority interest or is it like the Americans and the British say, a liquid majority interest... Somebody have to know the answer... How can it be that courts in for example U.S. and Sweden have different opinions in this matter, even in the same consulting firm we have different opinions”*

*-The **director***

The **directors** take on the matter is that they in his firm argue for an illiquid majority interest when valuing the entity via a DCF-model, not surprisingly when asking the other consultants the same question they also argue for an illiquid majority interest. Although, we are led to believe that the **analyst** had trouble grasping the question, not because we are questioning his capacity, simply because this way of thinking is not brought up when performing a valuation. On the other hand we cannot exclude that our way of asking the question were wrong. The **analyst** said; *“In practice you do not think*

*that way, it is interesting though, I have never seen it that way". The **executive** got this question via email because we interviewed him before we interviewed the director. This means that we were not able to ask further supplementary questions. With this in mind, the **executive** said that, in general, a DCF-model would give you an illiquid majority interest. "At least in regard to a listed company."*

Our perception is that the **director** possesses a great interest of the subject and therefore is well read on illiquidity discount. He express that he understands the way the Americans handles the issue.

*"If you take a DCF-model to the very basic, you discount cash flows to make them cash-equivalent, today. If you conclude that a company is worth 14 MSEK using a DCF-model then the investor should be indifferent between holding the same amount of cash or owning the company in question, but 14 MSEK in cash is in fact liquid. I can totally decide what I want to do with my 14 MSEK I can convert them directly. With this perspective in mind, the 14 MSEK derived, as the value of the company should correspond with a liquid majority interest. In reality this doesn't add up. The illiquidity discount is then due to the difference between cash and the value of the company, in reality not in theory. You cannot sell the company instantaneously. With this reasoning I understand why the Americans and the British apply a discount to majority equity interests."*

*-The **director***

#### **5.4.1 Gaps in research and theory**

When asking about the gaps of knowledge concerning illiquidity discounts and how the research behind it have developed throughout the years, the **executive** express;

*"It's hard to say, the problem with all these studies is that they create the truth and sets the tone, which is interesting since it becomes the correct approach because of them. Later someone might discover that some studies are incorrect. It is still correct since everyone else use the same approach, it has to do with our perception and can be connected to market value overall, which in the latter tend to be athwart."*

*-The **executive***

The **director** expands the reasoning... *"I have worked with this the last 15 years and I think it has been practically the same argumentation over the years".* He continues with; *"The way you handle this issues, very little has happened over the years. Is this reasonably? Should we not have made any progress?"*

We can conclude that the way you argue in favor for, and motivate a DLOM in the context of minority interest is practically the same between our participants in our round of interviews. Studies are in use to boost the argument and to form a base foundation to stand on, but one must not forget that firm-specific variables are the most important ones when entering an argumentation, according to the interview objects. According to the **executive** the Swedish courts, and tax-courts in particular, are somewhat inconsistent on the issue and it seems to be a good basis from which one can argue against market value interpretation in the legislative texts, there is no precedent yet to come in the context of DLOM. From our referential framework and the interviews with the **director** as well as with the **partner** we have learned that the issue of DLOM on majority interests is handled inconsistent, between countries and even in the same

consulting firm. We are not able to generalize this matter but it is an interesting discovery and the argumentation about this subject have been practically the same throughout the years, but as the **director** expressed it; maybe we should have made some progress on this issue.

Throughout the interviews, when the **consultants** talk about market values overall, and the issue of catching consensus; what would the eventual (general) investor pay for a company, or for that matter, which level of discount would they attach. We developed a way of thinking similar to the way PwC's market-risk-premium study<sup>8</sup> is conducted. The reason, as we see it, to conduct this type of information from market participants is to catch consensus take on the market-risk-premium, which in the latter a practitioner can use as a factor affecting the discount rate in for example a DCF-model. We asked ourselves if this could be applied in the context of DLOM, not to the discount rate, but to the estimation process of the percentage rate. Later on we asked our participant **consultants** if they thought this would be applicable and helpful in their day-to-day work. All of the **consultants** were united and agreed to that it would be interesting to catch consensus views on which firm-specific factors that affect the level of illiquidity.

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<sup>8</sup> A survey study conducted on a yearly basis reporting the market risk premium and other critical components in order to derive the required rate of return on the Swedish stock market. (PwC AB, 2014)

#### 5.4.2 Table summery

Due to the complexity of this subject we will now summarize, in table 5.1 some general information conducted from the interviews. This is handed out to the reader in order to observe differences, if any, between our interviews objects. We do not provide these summaries in order generalize the population of valuation practitioners.

	Executive	Director	Analyst	Partner
Applies a DLOM for minority interests	Yes	Yes	Yes	Doesn't acquire minority interests (not applicable)
Applies a DLOM for majority interests	Very rarely, in general no	No	Very rarely, in general no	Yes
Seeks guideline in empirical studies	Yes	Yes	Yes	No
General (or frequently used) percentage <b>starting-point</b> of DLOM	30%	0-50%, span	20-30%, span	25%
Firm-specific variables affecting the level of DLOM	Yes	Yes	Yes	Yes
Where DLOM is applied (in the calculation)	A percentage rate is deducted from final value P (EV - net debt)	A percentage rate is deducted from final value P (EV - net debt)	A percentage rate is deducted from final value P (EV - net debt)	A percentage rate is deducted from the derived multiple of listed peers

**Table 5.1 Basic information conducted from interviews**



## 6. Conclusions

DLOM is accepted and frequently discussed when it comes to valuing a private company on the Swedish market. Our conclusion is that DLOM is used to compensate for divergences between private and public companies and a factor to consider when deriving the market value of a private company. The applied discount is there to compensate for the lack of attractiveness and subsequent the lack of potential buyers in the context of market values. What we can conclude is that DLOM is determined on behalf of the specific purpose with the valuation and the firm-specific factors in that particular situation. Regardless of whether one is to value a minority or a majority equity interest; a more attractive company will bear a lower lack of potential buyers and therefore a lower DLOM. Or the reverse, a less attractive company will bear a higher lack of potential buyers and therefore a higher DLOM.

In reality professionals always evaluate the specific situation to determine if a DLOM is reasonable to use. This depends to a large extent on the purpose with the valuation and what it will be used for. The base of the valuation is to first find a value of the company and as a second step apply an appropriate discount. The liquidity in the company is tied to the shares and not to the company value as a whole. In order to have comparable values you therefore apply the discount after having valued the company instead of, for example, including DLOM in the discount rate of a DCF-model, which will affect the final value. Furthermore, we find that **majority** and **minority** interests are usually treated differently. Consultants conducting independent valuations rarely apply a discount when valuing a majority interest since the *premium of control* takes out the *illiquidity discount* according to an existing paradigm on the Swedish market. It is harder to attract buyers to a minority interests due to the fact that they don't provide the new shareholder any control in order to govern, for example dividend policies in the company. In situations valuing minority interest illiquidity discount is commonly used.

Consultants use studies and research as a base to pinpoint an approximated discount to work from. Then by considering company specific variables they argue for the size of the discount. A consultant commonly refers to quantitative empirical studies in order to form a basic ground to stand on in their argumentation. We discovered that it is not that hard to argue for the fact the discount should be applied but rather how large it should be in that particular situation. We conclude that there are some insecurity of what tends to be fair, right or wrong, when it comes to applying a discount to the value in a legal situation. So far, according to the participants, there is no precedent that practitioners can refer to. Often it comes down to what's tends to be reasonable.

Our conclusion is that professionals use research and studies in a simplified manner. By withdrawing an average DLOM or an interval we argue that this is a much generalized way of providing a base for the estimation before considering firm-specific factors. The practitioners clarify in our results that a generalization doesn't belong in a valuation, yet the uses of research imply the opposite. They express that lack of time is a factor as to why the applied DLOM doesn't originate from deeper analysis. This in turn is very reasonable; they are professionals working with valuation and don't have the time to make profound research as to how the DLOM should be treated. This provides entries to further research suggestions.

## **7. Suggestions to further research**

In this study we provide the reader with a new perspective regarding the issues of how to handle DLOM in the context of private company valuation. Instead of looking at quantitative data trying to estimate a DLOM we take the practitioners perspective and look into how they work with a DLOM in reality. This gives us their perspective and thoughts on where the issue of the subject can be identified.

We interpret the studies in our referential framework to be missing the basic problem of DLOM. Research has been taking too many steps forward and forgotten why a discount is appropriate in the first place. A term such as DLOM includes many more factors than what might appear at the first glance. In general the studies we have looked at assess the problem as the difficulty to find the isolated and general DLOM. We argue that it is possible to find and estimate an isolated DLOM, but with a wider perspective than what is usually expressed in earlier studies. However a general and standardized DLOM is not appropriate to consider. As discussed in our results and analysis, firm-specific factors will affect the level of DLOM applied. Just like PwC's market-risk-premium study we suggest that DLOM can be handled in the same way. By conducting quantitative data from practitioners on a yearly basis one can catch consensus thoughts on which firms-specific factors that in fact affect a DLOM in a private company. If a checklist-like survey with a grade system is produced this would help practitioners calculate an appropriate DLOM.

Furthermore, we would like to suggest legal actions on the matter. If some sort of precedent were established this would help practitioners in there day to day work. For now, it tends to be some disagreement of what is right or wrong when applying a DLOM to a valuation subject.

At last we suggest further studies to widen the perspective and look to how other countries asses the issue; it would be interesting to see more specifically what in fact differs in the way Swedish practitioners handle the issue compared to for example practitioners in the U.S. or Britain. After all a private company consists of the same fundamentals in Sweden as it does abroad.

## 8. Quality criteria's

*Semi-structured and in-depth interviews can be drawn with data quality issues. These issues are primarily related to: **reliability**, **generalizability** and **validity** (Saunders et al., 2012, p. 381). In this chapter we will describe how we handled these issues one-by-one. We will also present another way of examine the quality of a qualitative study.*

### 8.1 Reliability

In the context of qualitative research the lack of standardization may lead to problems associated with *reliability*. In relation to our research design, *reliability* is concerned with whether alternative researchers would reveal similar information, also if potential bias can be detected. Saunders et al. (2012, p. 381), describes three main areas to address, namely: *the interviewer bias*, *interviewee or response bias* and *participation bias*. (Saunders et al., 2012, p. 381)

At first we argue that if these interviews were conducted by another researcher, *at the same point in time*, the revealed information would be similar. This since we have detailed descriptions on how we conducted the information. (Saunders et al., 2012, p. 382) In chapter 4: Practical method we underpin the choice of strategy, method and data obtained. The alternative researcher can use these notes. Also, in Appendix 1 one can find our detailed interview manual. But, we would also like to state that we don't strive to make this interview repeatable since the information obtained reflects reality at the time they were conducted.

The interviewer biases where avoided through professionalism and normalization when asking questions in order to not create bias in the way that interviewees responded. Our awareness of the possibility to impose our own beliefs when asking questions and in the way we interpret answers were in the back of our heads during the interviews to create the best possible outcome (Saunders et al., 2012, p. 381). During the interviews we had the feeling that the interviewee felt trust in us as interviewers, which prevents the interviewer bias and makes the information obtained highly valuable.

The interviewee or response bias refers to the way an interviewee is sensitive to the unstructured exploration of certain themes. In the latter this can cause the interviewee to not reveal and discuss an aspect of a certain topic. (Saunders et al., 2012, p. 381) We don't see this problem in our round of interviews because none of the topics discussed where that a sensitive information. Also, we argue that, since we interviewed executives in some manner they were not restricted to discuss certain themes as a possible more junior colleague might feel. We also feel that none of the areas we addressed had some sort of possibility to make the participants in a negative fashion. Overall we think that the anonymity of the interviewee helped us with this pitfall of bias.

The participation bias corresponds to the nature of the individuals or organizational participants who agree to be interviewed. (Saunders et al., 2012, pp. 381) In chapter 4: Practical method we discussed our access and choice of participants and that insufficient time where the primarily cause to declined interview objects. Although the interviews we manage to perform did not show any participation bias. All of the interviewed objects felt very present during the interview. After all we took approximately one hour of their squeezed schemes.

## 8.2 Generalizability

In the context of qualitative research method generalizability refers to which extent the findings of a research study are applicable to other settings (Saunders et al., 2012, p. 382). In general one might think that a qualitative study lacks the possibility to be generalizable and that a quantitative study is far more appropriate in order to provide these criteria. However this is not the case according to Saunders et al. (2012, p. 382). Since our study aim to address a rather unstructured nature in the context of business valuation a qualitative approach is more appropriate. We argue that such a rigorous study as ours is more likely to be useful in other settings than for example a large survey study spanning over a large number of participants. Furthermore, we have been able to relate our study to existing theory and demonstrate findings with a broader theoretical significance than our referential framework, which forms the basis of our study.

## 8.3 Validity

In connection to access the validity of a qualitative study refers to the extent a researcher has gained access to a participant's knowledge and experience. Also, if the researcher is able to infer meanings that the participant intends from the language used by that person. (Saunders et al., 2012, p. 382) Since the soul cause of this study was to provide the reader with an understanding on how valuation experts address the issue of DLOM this criteria is, according to us, met. Throughout chapter 5: **Results & analysis** we have provided a deeper understanding through our participants knowledge and experience. We have also managed to infer meanings by the way our analysis is integrated into our presentation of results from the interviews and in connection to our referential framework.

## 8.4 Alternative approach towards evaluating a qualitative study

There are however different attitudes when it comes to judging a qualitative study's validity and reliability. There are authors who projects that qualitative studies are to be reviewed based on completely different criteria's then the ones used by quantitative researchers. (Bryman & Nilsson, 2011, p. 352)

Lincoln & Guba (1985) and Guba & Lincoln (1994) see it as necessary to define terms and methods to establish and judge the quality of a qualitative research which make up for alternatives to the concepts of reliability and validity. They suggest two founding criteria's towards projecting a qualitative research, namely *trustworthiness* and *authenticity*. (referred to in Bryman & Nilsson, 2011, p. 353)

### 8.4.1 Authenticity & Trustworthiness

The authenticity of a study consists of a number of general questions concerning the research political consequences in general. Trustworthiness consists of four part-criteria's which all has a counterpart in the quantitative research. These are credibility, transferability, dependability and conformability.

In order to reach **credibility** in the results of a study one must ensure that the research goes in *accordance with existing rules*. Also that you *report the results* to the persons being a part of the research, having them confirm that the authors has perceived the

reality correctly. This is known as *respondent validity*. (Bryman & Nilsson, 2011, p. 354)

**Transferability** in a study strives towards creating a sort of framework that others could use to judge how transferable the results would be to another environment. (Bryman & Nilsson, 2011, p. 355) All throughout the methodological descriptions in the thesis we aim towards providing a careful and precise explanation of how we performed the study. If a study would be conducted in for example another country or with a greater sample this research is transferable to that environment.

Concerning the **dependability** which is equivalent to reliability within a quantitative approach the researchers should attend an auditing viewpoint. This means to create a complete and available walkthrough of all phases in the research process – such as problem discussion, choice of respondents, interview guides, and decisions regarding analysis and data and so on. (Bryman & Nilsson, 2011, p. 355) Going into this study we have always strived towards creating such a precise picture of our respondents' reality as possible and have worked hard towards creating a convincing study. This has resulted in large focus on the disposition of the study which we argue for provides a dependent study.

**Confirmability** leads to which extent the results of the study can be strengthened. This means reassuring that the authors has been acting in good faith and not letting personal values or theoretical orientations affect the outcome of the study. (Bryman & Nilsson, 2011, p. 355-356) As argued for in the practical method of this study the interview manual has been produced in regard to the referential framework. Also, we want to produce a study that holds high legitimacy and provides a true picture of our participant's reality and their view. This in turn would argue for us striving towards a fair study with high confirmability.

## 9. Social aspects

*This chapter is not an alternative conclusion or suggestions to further studies but rather emphasizing the **social** and **society** aspects that might correspond and strengthen our conclusion regarding the issues of DLOM.*

The abstractness regarding market values is constantly reminding us about the appraisals practitioners have to assess when valuing a private company. A valuation is in general subjective, what one professional state to be the correct “way” can be denied by others. Although, when deriving the market value (i.e. umbrella term for fair value and fair market value) as expressed by Bernström (2014, p. 9). We interpret that one has to be independent and take the market’s perspective into consideration. As defined in our introduction market value can be explained as: *“the price that would be received to sell an asset or paid to transfer a liability in an orderly transactions between market participants at the measurement date”* (FAR Akademi AB, 2014, p. 297). In other words: at what value would a knowledgeable and willing buyer and seller complete a transaction? To create such a value a practitioner must make assumptions. In regard to this definition of market value, we interpret that questions regarding DLOM are appropriate to consider.

As discussed a DLOM can have significant impact on the derived market value. The argumentation of what is right and wrong is a tuff nut to crack. One could ask if it’s reasonable to deduct, for example, 30% from the final market value of a minority interest. One could also ask if this is fair in regard to the current shareholder, which in turn may be obligated to sell. In the context of a non-obligated transaction a well-read dependent practitioner can also use DLOM in a negotiation, which can in fact result in a price reduction. Is it fair to use DLOM in these situations? Maybe, the current shareholder is not obligated to accept the price and complete the transaction. However, this whole argumentation of “right and wrong” leads into suggestion to further research and the legal perceptive in particular.

In order to catch the markets perspective one is always curious about what consensus think. If a practitioner manage to catch consensus thoughts about DLOM the estimated and applied discount would automatically corresponds to the overall market opinion. This will in turn improve the practitioner’s arguments and motivations with validity. If this is true, researchers should strive towards developing a survey study on DLOM in line with PwC’s market risk premium study, but instead create a framework of graded firm-specific variables as discussed in chapter 7. We believe this would provide a market-like discount instead of providing professional valuation experts with another quantitative study trying to estimate the “true” and general cost of illiquidity.

The result from our interviews briefly informs us of how majority and minority interests are handled in the context of DLOM in Sweden and in other countries, such as the U.S., Britain and Germany. When conducting a valuation on a majority interest DLOM is very rarely or in most cases never considered in Sweden according to our participants. This implies that Swedish consultants states a hypothesis and generalize this matter in every situation, which is not the case in for example the U.S. or Britain. We come to the conclusion that it is reasonable to have different praxis in different countries, but also that the argumentation of the issue varies between countries. In theoretical perspective some has to be right and some has to be wrong.

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## 11. Appendix

### 11.1 Appendix 1

#### *In Swedish:*

Först vill vi tacka för att du ställer upp på denna intervju det betyder väldigt mycket för oss och vår studie.

Anledningen till att våra telefoner ligger på bordet är för att vi spelar in samtalet så att vi på ett strukturerat sätt kan transkribera intervjun i efterhand och koncentrera oss på diskussionen. Självklart får ni om ni vill möjlighet att kontrollera och ändra något i efterhand om ni anser er ha misstolkat någon fråga. Vidare skrivs uppsatsen i sin helhet på engelska varpå transkribering också kommer ske på engelska. Dock har vi valt att hålla intervjun på svenska dels för att underlätta för oss själva men heller inte låta era svar och våra tolkningar begränsas av vana i engelska.

Vår utgångspunkt i studien är att behandla all information samt de personer vi intervjuar anonyma. Detta gäller även företagen som ni arbetar för samt eventuella exempelföretag som kan dyka upp under intervjun.

Syftet med vår studie är att skapa en förståelse för hur professionella värderare tar marknadsförhållanden, och därav likviditet i beaktande när man genomför en värdering av ett privat företag. Alltså, vilka faktorer som påverkar hur och när man estimerar och sedermera applicerar en så kallad rabatt för marknadsförhållandet och därav illikviditeten.

När vi under intervjuns använder ord som likviditet eller illikviditet syftar vi implicit även på marknadsförhållanden, alltså i vilken utsträckning det finns en ”redo marknad”, på engelska omnämnt som ”marketability”.

Vi vill också påpeka att ni självklart när som helst under intervjuns gång har möjlighet att ställa frågor till oss för att skapa en samtalslikande atmosfär snarare än att det ska likna en strikt frågestund. Vår förhoppning är att låta intervjun mer likna ett samtal genom att ställa så öppna frågor som möjligt. Tanken med detta är att få er som respondenter att ge exempel på situationer som ni möter dagligen i ert arbete snarare än att vi ska ställa standardiserade frågor som ger standardiserade svar.

#### **Inledande fråga:**

1. Hur kommer du/ni i kontakt med värderingar av privata företag?

#### **Diskussionspunkter:**

- **Metod- och ansatsval vid en värdering av privata företag**
  - Hur detta skiljer sig i olika situationer samt om det gäller majoritet- eller minoritetsintresse
  - Utgångspunkter och angreppssätt i en värdering

**Frågor:** (Ej synliga för respondenten utan som hjälp för oss att ställa adekvata följdfrågor som är kopplade till vår teoretiska referensram)

1. Vilken värderingsmetod och ansats använder ni er mest frekvent av vid en värdering av ett privat bolag? (income-, market-, och asset-based approach)
  - a. Vilka faktorer gör att det skiljer sig mellan majoritet- och minoritetsintressen?
2. Hur mycket handlar en värdering av aktiernas i ett privat företag om att förflytta sig mellan olika nivåer av "basvärden"? (Investment value, control value, As if freely traded, minority private value).
3. Tror du att metoder och utgångspunkter i en värdering av privata företag tenderar att skilja sig åt mellan olika aktörer i branschen?

- **Konceptet för rabatter och premium i värderingssammanhang**

- Ämnets aktualitet
- Olika typer av rabatter och påverkande faktorer
- Diskussion mellan värderare, kunder och andra intressenter

**Frågor:** (Ej synliga för respondenten utan som hjälp för oss att ställa adekvata följdfrågor som är kopplade till vår teoretiska referensram)

1. Om man utgår ifrån att det finns en generell rabatt för privata företag som innefattar flera faktorer, kan ni då rangordna de variabler som omfattar en sådan PCD?
  - a. Anser ni att illikviditeten är en stor faktor?
  - b. Kan ni rangordna faktorerna som påverkar?
2. Hur aktuellt anser du att det är med just begreppet/ämnet illikviditetsrabatter/marknadsförhållande (illiquidity discount/DLOM)
3. Hur vanligt är det att man stöter på termen illikviditetsrabatt i värderingar av privata företag?

- **Metoder för att estimerar och applicera en rabatt för illikviditet i värderingen av privata företag**

- När det blir aktuellt att applicera
- Utgångspunkter från var man hämtar vägledning och estimerar en rabatt
- Var i värderingsberäkningen rabatten beaktas
- Tumregler
- Illikviditet i ett riskperspektiv
- Motivering/argumentation för illikviditetsrabatt

**Frågor:** (Ej synliga för respondenten utan som hjälp för oss att ställa adekvata följdfrågor som är kopplade till vår teoretiska referensram)

1. När anser ni att det blir aktuellt att i en värdering av ett *minoritetsintresse* analysera graden av likviditet för värderingsobjektet i fråga?
  - a. Kan ni ge ett färskt exempel på när illikviditen togs i beaktning respektive inte togs i beaktning?
2. När anser ni att det blir aktuellt att i en värdering av ett *majoritetsintresse* analysera graden av likviditet för värderingsobjektet i fråga?

- a. Kan ni ge ett färskt exempel på när illikviditen togs i beaktning respektive inte togs i beaktning?
3. Vilka metoder använder ni för att analysera, estimerar och eventuellt sedermera applicera en illikviditetsrabatt?
  - a. Har ni ett givet ramverk kring detta?
  - b. Använder ni er av någon tumregel?
4. Om ni skulle välja mellan att reducera värdet med en procentsats eller addera en riskpremie för illikviditet i diskonteringsräntan, vad anser ni då är mest fördelaktigt?
5. Är behovet att kompensera för illikviditet i en aktie knutet till risk?
  - a. Om ja: på vilket sätt?
6. Är illikviditeten i bolaget "tillgångar" knutet till rabatten?
7. *Hur mycket ser ni till makroekonomiska faktorer överlag när ni estimerar en illikviditetsrabatt?*
  - a. *Exempelvis lågränteläge.*
  - b. *Aktiemarknaden drivs upp av andra faktorer än bolag specifika.*
  - c. *Aktiemarknaden som "sparform"*
8. Hur mycket väger ni in faktorer som sannolikhet fler transaktioner i branschen och sannolikhet för att företaget i fråga kan bli föremål för en börsintroduktion?
9. Tror du att tillväxtförmågan är en betydande faktor som bestämmer likviditeten?
10. Tror du att bolagets storlek har betydelse för rabatten?
11. Hur mycket beror den applicerade rabatten på köparens preferenser? Alltså, att vissa köpare värderar likviditet högre än andra. De som har en kortare tidshorisont värderar likviditeten högre. Allt annat lika.
  - a. Bör det ens påverka om man är ute efter att standardisera?
12. Har ni hamnat i en situation där ni måste argumentera och motivera ert val av rabatt? Exempelvis för rättsväsende, kunder etc.
13. Tror du att värderare kan bli påverkad av kunden som beställt värderingen?
  - a. Oberoende synpunkt
14. Kan det vara idé att bara se till den övergripande rabatten för privata företag gentemot publica, alltså att den rabatt som appliceras inte enbart är hänförlig till likviditeten utan "samtliga" faktorer som påverkar prisskillnaden i privata företag jämfört med publika? (Går att koppla till PCD)
  - a. Har detta att göra med svårigheten att bryta ut en isolerad illikviditetsrabatt?
15. *När ni använder en DCF-modell på hela verksamheten, vilket värde anser ni då att ni får fram? Ett illikvitt majoritetsintresse eller ett likvitt majoritetsintresse.*

- **Kunskapsluckor och vägledande information om rabatter för illikviditet**
  - Kompetensutveckling och sökande efter ny kunskap
  - Förändring över tid
  - Kunskapsluckor

**Frågor:** *(Ej synliga för respondenten utan som hjälp för oss att ställa adekvata följdfrågor som är kopplade till vår teoretiska referensram)*

1. Hämtar ni vägledning från forskning när ni ska applicera en illikviditetsrabatt i syfte att utveckla er kunskap?
  - a. Om ja: har ni någon generell uppfattning om forskningen kring illikviditetsrabatt? Är den användbar i praktiken?

- b. Om nej: Varför inte?
2. *Vart hämtar ni vägledning för att estimerar och applicera en rabatt för ett majoritetsintresse?*
3. Har ni upptäckt några förändringar vad gäller illikviditetsrabatt under de senaste åren (2000-talet)?
  - a. Har ni några önskemål om förändringar i framtiden?
4. Vad anser ni i dagsläget är den största kunskapsluckan vad gäller estimering och applicering av illikviditetsrabatt?
  - a. Vad anser du är det största problemet?
5. *Finns det ett lönsamhetsperspektiv i att fokusera på illikviditetsrabatter?*
6. *Tror du att det går att sätta samma någon typ av standardisering eller checklista som hjälper er i ert dagliga arbete?*
7. Anser ni att vi omfamnat problematiken och de områden som illikviditetsrabatter berör eller är det något område som ni naturligt tänker på när ni hör begreppet illikviditetsrabatter som vi inte behandlat i den här intervjun?

### **Förtydliganden om kopplingar till valda teman:**

Kan det vara idé att bara se till den övergripande rabatten för privata företag gentemot publica, alltså att den rabatt som appliceras inte enbart är hänförlig till likviditeten utan "samtliga" faktorer som påverkar prisskillnaden i privata företag jämfört med publika? (Bajaj 2001)

Finns det en risk att man dubbelräknar rabatten för illikviditet främst när man använder sig av en DCF-model? Alltså att illikviditeten redan skulle vara justerad för i företags-specifika faktorer och att ett procentuellt avdrag på det slutliga värdet resulterar i dubbelräkning? (Comment 2012)

Hur mycket väger ni in faktorer som sannolikhet fler transaktioner i branschen och sannolikhet för att företaget i fråga kan bli föremål för en börsintroduktion? (Emory 2002)

Hur mycket ser till makroekonomiska faktorer överlag när ni estimerar en illikviditetsrabatt? (WMA 2002)

Tror ni att du som värderare kan bli påverkad av kunden som beställt värderingen. Alltså att en värderare kan bli jävig och producera ett högre värden om man är anlitad av ett säljande företag och vice versa? (Elnathan et al., 2010)

Tror du att storlek och tillväxtpotential är en betydande faktor som bestämmer likviditeten? (Kooli 2003)

Tror du att metoder och utgångspunkter i en värdering av privata företag tenderar att skilja sig åt mellan olika aktörer i branschen? (Kooli 2003)

Använder ni er av några tumregler när ni estimerar och applicerar en illikviditetsrabatt? (Kooli 2003)

Hur mycket beror den applicerade rabatten på köparens preferenser? Alltså, att vissa köpare värderar likviditet högre än andra. De som har en kortare tidshorisont värderar likviditeten högre (Elnathan et al., 2010; Damodaran, 2012)

Vart hämtar ni vägledning för att estimerar och applicera en rabatt för ett majoritetsintresse? (Pratt 2009)

Vilka skillnader anser ni att det finns mellan aktieägarnas värde och företags värde i sin helhet? Kan man generellt säga att aktieägarnas värde är lägre företagsvärdet i sin helhet (Pratt 2009, Hitchner 2011)

Om ni skulle välja mellan att reducera värdet med en procentsats eller addera en riskpremie för illikviditet i diskonteringsräntan, vad anser ni då är mest fördelaktigt? (Petersen et al., 2006)

Har ni hamnat i en situation där ni måste argumentera och motivera ert val av rabatt? Ex rättsväsende etc. (Pratt 2009)

Likviditeten i företagets tillgångar är en faktor som påverkar illikviditetsrabatten. (Damodaran, 2012)