Business Transactions in the Dutch Small and Medium-sized Enterprises (SME's) Market Sector

A research study on the level of discrepancy between business value and transaction value

UNIVERSITY OF TWENTE

Master Thesis Business Administration

Maarten van Gaalen, September 2011

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Master Thesis Business Administration, University of Twente

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Utrecht, September 2011

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Preface

This research report is the result of a six month research study into business transactions in the Dutch small and medium-sized enterprises (SME's) market sector. The master thesis serves as a final assignment to complete the Master Business Administration (Financial Management Track) at the University of Twente.

The research study was designed and conducted at the Corporate Finance department of BDO Accountants & Consultants located in Utrecht, the Netherlands. During my time at BDO I was grateful to be in the position to explorer the field of Corporate Finance and to acquire practical knowledge and experience about business transactions. My internship at BDO also brought me in the position to acquire non publically available data about business transactions in the SME marker sector.

A word of thanks goes out to everyone that has contributed to this research project. At first I would like to thank all employees in the Corporate Finance department of BDO for their help in providing me with the necessary data that was required for carrying out my research. Special thanks goes out to drs. H.T. Hendriks, consultant at BDO Corporate Finance, for his support during my time at BDO and for providing me with valuable feedback and constructive criticism to complement my report. Secondly a word of thanks goes out to my primary supervisor ir. H. Kroon for his supervision and valuable feedback. I also would like to thank Prof. dr. J. Bilderbeek for being the second supervisor of this research report. Finally I would like to thank my friends and family for their interests and support during my study period.

It has been attempted to write this report in a comprehensible manner. However, it can occur that certain subjects require some level of education in academic research and in the field of corporate finance. If there are any questions, comments or remarks which come forth from reading this report, please do not hesitate to contact me.

The last thing remaining is to wish the reader a pleasant time reading this report and hopefully it will contribute in providing the reader with some understanding in, the relation between, the concepts of business value and transaction value.

Maarten van Gaalen
Utrecht, September 2011

Abstract

The objective of this research study is to explorer and identify general factors that could be of effect on the level of discrepancy between business value and transaction value. In this research study, business value is considered to be the value of a business determined by an (expert) appraiser. The transaction value is considered to be the is the price agreed upon between the buyer(s) and the seller(s) in the transaction. In the practise field of corporate finance there is a discrepancy observable between business value and transaction value regarding business transactions in the SME market sector. Other than transaction specific factors, like the effect of negotiations between the buyer(s) and seller(s), it is unknown whether there are general factors that effect the level of discrepancy between business value and transaction value. So far little research has been done on this research topic.

By means of a literature study six general factors have been identified that could be of effect on the level of discrepancy between business value and transaction value: the valuation method used to determine the business value, the commissioner of the business valuation, the type of buyer, the market trend during the transaction, the industry sector and the business size. In order to study the effect of these factors on the level of discrepancy, data has been obtained from 80 business transactions, in the period from December 2003 till May 2011, within the Dutch small and medium-sized enterprises market sector. Subsequently, multiple analyses have been performed in order to test the effect of these factors on the level of discrepancy between business value and transaction value.

The results of this study showed that, within the total data sample, there is a discrepancy of approximately 20% between the appraised business value and the transaction value. The greatest difference can be found by the type buyer (i.e. insiders vs. outsiders). When the buyer(s) are in some way related to the business, e.g. current shareholders, management or family, the level of discrepancy between business value and transaction value is relatively small. The differences in discrepancy between insiders vs. outsiders are even more pronounced in the comparison of family-related buyers compared to non-family related buyers. Secondly, it is demonstrated that there are difference in the level of discrepancy between industry sectors. Differences in capital intensity, synergy possibilities, niche markets and number of potential competitor buyers within the industry sectors are underlying factors that may cause these differences. Thirdly, an effect on the level of discrepancy has been found by the used valuation method to determine the business value. The

more objective valuation methods showed a smaller level of discrepancy compared to the more subjective valuation methods.

No effects, on the level of discrepancy were found by the commissioner of valuation. However, the results do show that there is an effect of the commissioner of valuation on the probability for the business value to be higher or lower than the transaction value. When the valuation is commissioned by the selling party, there is a greater probability for the appraised business value to be higher than the transaction value. Finally, no results have been found indicating that the size of the business and the market trend during the transaction are of effect on the level discrepancy between business value and transaction value.

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1.   Research design

1.1 Research context

The concept of business valuation is a widely discussed topic in finance and accounting literature (Copeland, T., Koller, T., & Murrin J. 2000; Pratt, S.P., Reilly, R.F., & Schweihs, R.P. 2002; Koller, T., Goedhart, M., Wessels, D. 2005; Yao, J., Chen M. and Lin, H. 2005; Fernández, P. 2009; Gavious, I., & Parmet, Y. 2010.). Business valuation, for the purpose of this research project, can be defined as the process of determining the current market value (i.e. business value) of a company or an asset. The valuation of companies requires the need to resolve theoretical and empirical problems related to the analysis of financial statements, estimation of the cost of capital and prediction of future cash flows (Bowers, 2002). There can be different reasons for which one would want to value a company or an asset. In the course of business transactions, such as mergers and acquisitions, majority shareholders who are on the buy- or sell-side, commission a business valuation to justify the transaction value and to determine a minimum price or a maximum price at which they should accept the transaction (Fernández, 2007).

In 2009, Elnathan et al. have done a research on the discrepancy between business valuation and transaction value[1] using a unique sample of 44 publicly listed companies. Their research showed, among other, that in almost all of the 44 investigated business transactions, the appraised business values were identical to the realized transaction values[2]. Their research restricted itself to business transactions between publicly listed companies (i.e. from which the shares are traded on the stock-exchange). In a subsequent study, (Elnathan et al. 2010), the authors incorporated a sample of transactions regarding 66 privately held companies. Results from this study showed, similar to their previous study, that the appraised business values and the realized transaction values were identical[3].

The results of the two studies of Elnathan et al. do not match with what is noticed in practice (BDO, 2011). In practice there is a discrepancy observable, between the appraised business values and the realized transaction values, in the course of business transactions[4]. Fernández 2007, states that a clear distinction should be made between business value and transaction value. Business value is

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[1] Transaction value ('market value') of listed shares.
[2] Transaction values with regard to M&A transactions and private placements.
[3] The transactions that were studied by Elnathan et al, were restricted to privately held and publicly listed companies purchased by publicly listed companies (Elnathan et al. 2009 & Elnathan et al. 2010).
[4] This is observable in practice in transactions between privately held companies in the Dutch SME sector (BDO, 2011).

what a company is worth according to an appraised business valuation. On the other hand, the transaction value (i.e. transaction price) is the price agreed upon between the buyer and the seller in a business transaction. It is at least questionable that these two values would always be equal to each other in the course of business transactions.

The authors explain in their article (Elnathan et al. 2010) that their results could be biased by the type of valuation reports that were used in their study. The valuation reports that were used, were published at the end of the negotiations between buyer and seller, instead of at the starting point. The valuation reports may have been adjusted during or after the negotiations before publication, which could impact the impartiality of the valuation reports. It is questionable if the results of their study would remain unchanged if they had used the business valuation reports that were prepared at the starting point of the negotiations.

Unfortunately, in scientific literature so far not much attention has been paid to the level of discrepancy between business valuation and transaction value in the course of business transactions. This is especially true for business transactions at which both the purchasing and the target company are privately held[5]. The reason that such few scientific studies have been dedicated to business transactions and -valuations of privately held companies is primarily due to lack of large scale data and the difficulty in obtaining documentation on these business transactions (DeAngelo, 1990; Elnathan et al. 2010).

The research study that is presented in this report elaborates on the studies of Elnathan et al. 2009 & Elnathan et al. 2010. It will do further research on the level discrepancy between business value and transaction value. The focus will be on business transactions between privately held companies. The results of this study can be used to obtain a better understanding of factors that could be of effect on the level of discrepancy between business value and transaction value. It should be of interest to others (e.g. academics, practitioners and regulators), since in scientific literature, there is only few knowledge published and available about business transactions between privately held companies.

1.2 Research objective

The first objective of this research study, which is based on the research context described in the previous paragraph, is to examine the level of discrepancy between business value and transaction value in business transactions between privately held companies. In every business transaction there

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[5] Privately held companies are companies from which the shares are not freely traded on the stock exchange.

are unique circumstances that could affect the discrepancy between business value and transaction value. However, it is unknown whether there are general factors which may affect the level of discrepancy between business value and transaction value. For this reason, the second objective would be to identify and empirically test general factors that could affect this level of discrepancy. The study of Elnathan et al 2009 presents a list of factors, which were used to study whether they would be of influence on the discrepancy between business value and transaction value[6]. With the help of a literature study it will be determined whether the factors investigated by Elnathan et al. can also be used for this research study, to examine the level of discrepancy between business value and transaction value in transactions of privately held companies.

This research study will be restricted to the Dutch small and medium enterprises (SME) sector. The research objectives are translated into two central questions and several sub-questions. These two central questions are:

1. *What is the level of discrepancy between business value and transaction value in business transactions between Dutch privately held companies in the SME sector"?*
2. *Which general factors are of influence on the level of discrepancy between business value and transaction value in business transactions between Dutch privately held companies in the SME sector?*

Given these central questions, several sub questions have been formulated, which will contribute to finding answers to the two central. The sub-questions are as follows:

-   *What is the influence of the valuation approaches and method used to determine the business valuation?*
-   *What is the influence of the commissioner(s) of the valuation?*
-   *What is the influence of the macroeconomic context on the M&A activity ?*
-   *What is the influence of company specific factors (e.g. business size) on the level of discrepancy between business value and transaction value?*

Based on the research context and the formulated research questions the main hypothesis of this research study is:

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[6] Transaction value ('market value') of listed shares.

Main hypothesis

> *There is a level of discrepancy between the appraised business value and the transaction value in business transactions between privately held companies in the Dutch SME sector.*

1.3 Research strategy and research framework

In order to achieve the intended research objectives, an appropriate research strategy will have to be followed. The strategy that is used in this research study can be qualified as a secondary research strategy (also known as a desk research). Secondary research is a research strategy in which knowledge and data is used that has been produced or collected by others (Crouch, S. & Housden, M. 2003). In this research study, a literature study will be conducted to identify factors that could affect the level of discrepancy between business valueand transaction value. By means of the literature study several hypotheses will be formulated and these will be combined in a research model. The research model will consist of factors that could affect the level of discrepancy between business value and transaction value. The hypotheses in the research model will empirically be tested in this research study.

Research framework

The research framework, which is illustrated in the figure below (figure 1), provides a simplified and systematic overview of the steps that have been taken in the course of this research study.
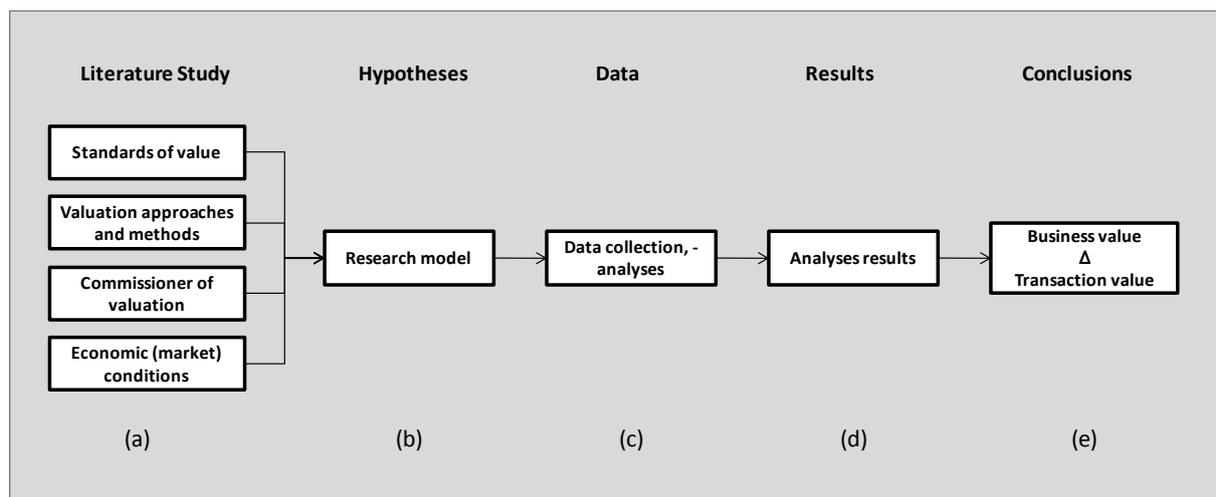
Figure 1: Research framework related to the research study.

The steps that have been taken in the course of this research study can be summarized as follows: a) a literature study will identify factors that can affect the level of discrepancy between business value and transaction value. b) several hypotheses will be formulated based on the literature study in step a and these hypotheses will be combined into a research model. c) The research model will

empirically be tested on a dataset. This dataset will have to be designed specifically for this research study. d) The results of the statistical tests will be analyzed, and the formulated hypotheses in step a will be either accepted or rejected. e) From the results of the data analysis in step c, conclusions will be drawn about the effect of the factors examined on the level of discrepancy between business value and transaction value.

1.4 Structure of the research report

The research report is divided into five chapters. Chapter 1 has treated the research context and research design of the research study. Chapter 2 will focus on the theoretical aspects of the study. It will explain the different concepts, identify factors and produce a research model on the level of discrepancy. Chapter 3 will comment on the data that has been used for this research study. It provides information on the data collection and data analysis methods and explain which methodologies have been applied. Chapter 4 will present the results of the data analysis. Each hypothesis will be discussed separately and will either be accepted or rejected based on the results of the data analysis. In chapter 5 of this research report, conclusions from these results will be drawn. Thereafter, the shortcomings of this research study will be discussed and recommendations for further research will be presented.

2. Literature study
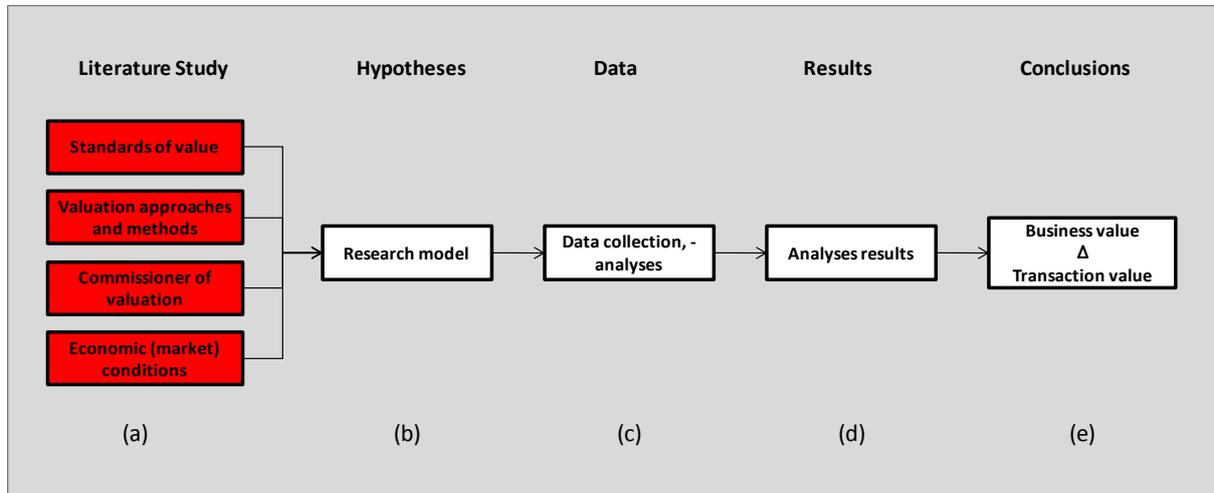
Figure 2.1: Research framework related to the research study, section a.

The main goal of the literature study is to provide a theoretical background and an overview of factors which may affect the level of discrepancy between business value and transaction value. The next four paragraphs of this chapter are dedicated to the different research concepts. In each paragraph an overview is given on the current state of the scientific literature on a specific research concept. Each paragraph will end with one or more hypotheses that are the result of the findings from the literature study. At the end of this chapter these hypotheses will be combined into a research model which will provide a clear overview of the factors that are going to be examined. This research model will form the basis of the analyses that will be performed in chapter 4.

2.1 Standards of value

Before starting to explore and explain the different concepts with regard to business valuation, business value and transaction value, it is important to explain which definition of value is used in this report. As is stated by J.C. Bonbright: *"It is impossible to intelligently discuss methods of valuation without reference to some assumed definition of value"* [7]. The term value can mean different things to different people in different contexts. Hence, even for the same person the term value can mean something else in another context. Without a clear definition of value, the conclusions and discussions about business value have no meaning. (Pratt et al. 2000). There are a number of value definitions used in business valuation today. These definitions of value can be categorized into five main categories (ASA. 2009; IVSC. 2006 and Pratt et al., 2000): (1) fair market value, (2) fair value, (3) intrinsic value, (4) investment value and (5) liquidation value.

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[7] James C. Bonbright, Valuation of Property, Vol 1 (Charlottesville, VA: The Michie Company, 1965, p 128)

The definition of value that is most widely recognized and practiced in the course of business valuation today is *fair market value*. Fair market value can be defined as "*the value at which a business or an asset would change hands between a willing buyer and a willing seller when neither is acting under compulsion and when both have reasonable knowledge of the relevant facts*" [8]. Fair market value is the estimated value that assumes no specific buyer or seller. Terms that are interchangeable for the term fair market value and which are frequently used are market value and cash value. The second definition of value is *fair value.* In the context of business valuation the term fair value is best described as the value that is fair between two specific parties taking into account the respective advantages or disadvantages that each will gain from the business transaction. It is different from fair market value in the way that it is the value that holds for a transaction between a specific buyer and seller (IVS 2007)[9]. It can be the case that a specific buyer has certain advantages resulting from the business transaction (e.g. synergies advantages) that would not be available to other purchasers in the market. In contrast, fair market value requires synergies advantages to be disregarded. The third definition of value is *intrinsic value*, which sometimes may also be called fundamental value. It can be defined as "*the value that an investor considers, on the basis of an evaluation of available facts, to be the true or real worth of the business*"[10]. Stated in a more simplistic way, it is the accounting value of a security as opposed to the more subjective fair market value. In business valuation the intrinsic value is less frequently used as a leading value but more commonly it is used in the context of another standard of value, e.g. fair market value (Antill and Lee, 2008). The fourth definition of value is *investment value,* which can be defined as "*the specific value of an investment to a particular investor or class of investors based on individual investment requirements*"[11]. The main distinction between investment value and fair market value is that the investment value is not impersonal and that the value is only applicable to a particular investor, or a class of investors. The term is widely used in real estate with regard to the valuation of property. The fifth and last definition of value with regard to business valuation is the *liquidation value*. It can be defined as the net amount that would be realized if the business is liquidated and the assets are sold separately.

The purpose of most business valuations is to determine the fair market value of a business or ownership interest therein (Pratt et al., 2000). Therefore, unless mentioned otherwise, when the

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[8] ASA, (2009). American Society of Appraisers: Business Valuation Standards.
[9] IVS (2007). International Valuation Standards.
[10] Cooper and Yuri (1983). Kohler's Dictionary for Accountants, Sixth Edition Englewood Cliffs
　　Prentice Hall, p285).
[11] Appraisal institute (1993). The Dictionary of Real Estate Appraisal. Third Edition, Chicago: Appraisal Institute,
　　p190).

term business value is used in this research report, the fair market value of the business is being meant.

2.2 Valuation approaches and methods

"*Business valuation is the act or process of determining the value of a business or ownership interest therein*" [12]*.* The objective of a business valuation, performed by an expert appraiser, is to provide an impartial opinion on the value of a business or ownership interest therein. Business valuation is an important aspect in many business studies and can be considered to lie at the heart of finance (Damodaran, 2006). Important to note is that the process of a business valuation is not an exact science. The business valuation process can even be considered to be more an art than a science. This is because the valuation process is partly subjective, since it is based on unique circumstances, assumptions, and disclosures (Copeland et al., 2000; Koller et al., 2005; Pratt et al. 2000). "*It is an illusion to presume that a complex organism like a company can be expressed in monetary terms in a mathematical way. Only an approximation of the business value can be realized*" (Sman, 1992). A business valuation can be performed for a wide range of reasons. The most common reason, to perform a business valuation, is in the course of a business transaction. In a business transaction all or a significant part of the shares of the business are being exchanged. The valuation will give the buyer insight into the maximum price he should be willing to pay for the shares and it will inform the seller about the minimum price at which he should be prepared to sell them. Some other common reasons to perform a business valuation are: 1) for public offerings; 2) for financing purposes and 3) for strategic decisions/planning (Fernandez, 2007). To help the business appraiser in the valuation process, numerous valuation approaches and methods have been developed over the years. These valuation approaches and methods will be discussed in the next two paragraphs.

2.2.1 Business valuation approaches

In the literature about business valuation, three different approaches are being distinguished: (1) the income approach, (2) the asset approach and (3) the market approach (ASA, 2009; Damodaran, 2002; Pratt et al., 2000; Reilly & Schweihs, 1998). Within each valuation approach, there are multiple valuation methods to determine the business value.

The basic concept of the *income approach* is to determine a value indication of a business, ownership interest, security or intangible asset by multiplying the economic income with a capitalization rate which is appropriate for the expected risk of the economic income. The economic

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[12] ASA, (2009). American Society of Appraisers: Business Valuation Standards, page 5.

income level that is used for the valuation can be based on historical income or on estimated future income. In the former case a representative income level will be determined based on realized historical income and multiplied by an appropriate capitalization rate to determine the business value. In the latter case the future income stream of the business will have to be estimated. This future income stream is then converted to present values by applying an appropriate discount rate. By adding up all of the present values of the future income stream, the business value will be determined.

The second approach to valuation is the *asset approach*. The basic concept of the asset approach is to determine a value indication of a business, ownership interest, security or intangible asset on the basis of the value of the assets by means of adding the sum of its parts (i.e. assets less liabilities). The asset approach in business valuation may be similar to the cost approach in other valuation disciplines. The asset approach should be considered on a basis other than as a going concern or for the appraisal of an investment or real estate holding company. The asset approach should not be used for the valuation of companies as a going concern, unless the approach is customarily used and gains support by the buyers and sellers. In the latter case, the business appraiser must support the selection of this approach. The asset approach is based on the economic principle of substitution. Hence, rational purchasers are not willing to pay more for the assets of a business than the cost of purchasing assets of similar economic use.

The third and last approach to business valuation is the *market approach*. The basic concept of the market approach is to determine a value indication of a business, ownership interest, security or intangible asset by using one or more valuation methods that compare the target business to similar businesses that have been sold in the past. Hence, in this approach the business appraiser will search for data on other business transactions which can serve as a reasonable foundation for comparison with the target company. The appraiser will then interpreted the transaction data for guidance to determine applicable valuation ratios. These valuation ratios should provide the business appraiser with some meaningful insights about the value of the business. The difficulty of this approach is to identify sufficiently comparable business transactions in which the appraiser should exercise care to issues such as: the timing of the financial data used in the valuation ratios, the calculation of the valuation ratios, the selection of the underlying data that is used to calculate the valuation ratios. The market approach is based on the economic principle of competition. Hence, in a free and open market supply and demand factors will drive the value to a certain equilibrium.

The three broad approaches are not entirely independent of each other, but are to some extend interrelated (Pratt et al., 2000). The income approach requires the determination of a rate of return to discount or capitalize the (future) economic income. The market forces drive theses capitalization

and discount rates. The other approaches are also related to some form of market observation, to either measure the company's ability to produce (future) economic income or to measure the economic conditions of its assets. From the three approaches that can be used for business valuation, the income approach is the most widely accepted and practiced approach used by business appraisers (Koller et al., 2005; Pratt et al., 2000).

2.2.2 Business valuation methods

With regard to the three approaches to business valuation which were mentioned in the previous paragraph, there are a number of valuation methods that can be used to determine the value of a business, ranging from simple to more sophisticated methods. These different valuation methods often make very different assumptions about the fundamentals (i.e. value drivers) that determine the business value (Copeland et al., 2000; Damodaran, 2006; Fernández, 2007; Koller et al., 2005). The valuation methods within the asset and market approach are relatively easy to apply compared to the income approach. The valuation methods within these approaches require the least amount of expertise. Compared to the valuation methods in the asset en market approach, the more sophisticated valuation methods can be categorized under the income approach. These valuation methods are called the discounted cash flow (DCF) models (Damodaran, 2006). Table 2.1 list some of the most widely practiced valuation methods that are being used by business appraisers.

Valuation Approaches	Valuation Methods
Income approach	- DCF-Method: - Enterprise DCF; - Equity cash flow; - Capital cash flow; - Economic profit - Adjusted present value (APV); - Economic value added (EVA) - Earnings method ("VR")[13]
Asset approach	- Intrinsic value - Book value - Adjusted net book value - Liquidation value - Substantial value
Market approach	- Multiples: - Price/earnings ratio (PER) - Price/sales ratio - Business value/EBIT - Business value/EBITDA - Business value/operating cash flow - Equity value/book value

Table 2.1: *Overview of valuation approaches, valuation methods.*

The most widely applied and accepted valuation methods used by academics and business appraisers are the DCF-models (Fernández, 2007; Fernández 2009; Koller et al., 2005; Pratt et al., 2000; Steen & Vliet, 2000). The DCF-model discounts future estimated cash flows at a rate of return that reflects the perceived riskiness of the cash flows. The discount rate is essentially based on two aspects: the time value of money (i.e. investors would rather have cash immediately instead of some other of time point in the future and must therefore be compensated by paying for the delay) and the risk premium that reflects the extra return investors demand for the risk that the cash flows might not be realized after all. In other words, business valuation based upon the discounted cash flow models are the future expected cash flows discounted at a rate of return that reflects the riskiness of the cash flow (Yao et al. 2005).

The (enterprise) DCF-model is most often applied by business appraisers, because it is based exclusively on the free cash flows rather than on accounting based earnings, which can relatively easily be misleading (Koller et al., 2005). According to Fernandez 2007, the reason that business appraisers prefer the DCF-models over other valuation methods is because the DCF-models are

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[13] The earnings method (in Dutch called "verbeterde rentabiliteits methode") is an valuation method that is frequently being used in valuations by Dutch appraisers (BDO, 2011).

future orientated. The fundamental problem with valuation methods other than the DCF models, is that most of them are exclusively based on the financial data that are listed on the balance sheets and on the income statements of the business. The problem with the use of balance sheets and income statements is that they are based on historical financial data. One could imagine that two companies with identical balance sheets and income statements but with different future expectations and opportunities will result in different business values. The fact that some valuation methods are based on historic data whereas others are based on future estimates is also a key aspect buyers keep in mind when they intend to acquire a company. In general buyers are only interested in the future income stream of a company. They recognize that a company that has shown good results in the past do not necessarily have to continue doing so in the future. The future oriented approach of the DCF-models is what gives the preferences of most appraisers and commissioners of a business valuation (Koller et al., 2005). However, despite its prominence the DCF-models are not the only valuation methods that are being used by business appraisers today. The reason for this is that the DCF-methods also have some weaknesses. The main weakness is the sensitivity to assumptions that have to be made regarding the future free cash flows and the discount rate. The future cash flows and the discount rate are the value drivers of the DCF-models. Different assumptions on these value drivers will lead to different business values (DeAngelo, 1990).

When determining which valuation method to apply, it is important that both the appraiser and the commissioner of the valuation are comfortable with the method of choice (Demirakos, E.G., et al. 2004). In the article of DeAngelo (1990), the author examined different valuation methods that were being used by expert appraisers. DeAngelo has found significant differences between the values that were obtained by different types of valuation methods. The study showed that the differences in business values, that were obtained by different valuation methods, can differ up to 56%. In 1995, Kaplan & Ruback have done a research on the ability of valuation methods to estimate the realized transaction value on 51 completed business transactions. They report that the value estimates that were based on the DCF-model significantly outperformed the value estimates that were based on other valuation methods. Myers 1987, states that the valuation method that is being used to determine the business value is one of the main causes of the discrepancy between the appraised value and the market value of listed shares. The findings of Myers 1987 are supported by Steen & Vliet, 2000. In their article the authors conclude that the discrepancy between market value and the appraised value of (the shares of) the business is strongly dependent on the type of valuation method which has been used.

This research study has not the intention to explicitly explain how all the valuation methods work in theory and practice. But considering the fact that the enterprise DCF-model is one of the most widely applied and accepted valuation methods, a short description of the enterprise DCF-model is given in appendix I. Readers that are interested in a complete description and explanation of the valuation methods and in particular the enterprise DCF-model are being referred to the books and/or articles of authors such as Brealey et al., 2006; Copeland et al., 2000; Damodaran, 2006; Koller et al., 2005 and Pratt et al. 2000.

Summarized, the main findings of the literature study on business valuation approaches and business valuation methods, clearly state that the choice of which valuation method to apply requires good consideration. As was mentioned, applying different valuation methods can result in different business values. The study of DeAngelo (1990) even showed a difference of 56% by the use of a different valuation method. The literature also states that valuation methods based on the DCF-model are best to estimate the realized transaction value (Kaplan & Ruback, 1995). The prominence of the DCF-methods in scientific literature is also being shared by business appraisers. These findings leads to the following hypotheses:

Hypothesis 1

   a. *The level of discrepancy between business value and transaction value differs by the type of valuation method that has been used in the valuation process.*
   b. *The level of discrepancy between business value and transaction value is least when the DCF-model has been used in the valuation process*.

2.3 Commissioner of valuation

Many scientific studies related to business valuation, focus on routine valuations performed by buy and sell side analysts of investment houses and banks. Unlike these studies, the type of business valuations that receives less attention are the valuations that are commissioned by the interested parties (buyers and sellers) as part of business transactions that take place outside the exchange, e.g. mergers and acquisitions (Elnathan et al. 2010). For these transactions an expert appraiser is needed to provide an independent estimation of the business value.

2.3.1 Commissioner: buyer vs. seller

A business valuation performed by an expert appraiser (i.e. expert valuation) is usually commissioned by the majority shareholder(s) that are on the sell side, or by investors that are on the buy side in a

business transaction. An expert valuation is used to determine the business value on a impartial basis and to justify the realized transaction value. However, the Security and Exchange Commission (SEC) and other Securities Commissions around the world have recently raised the concern that expert appraisers are not impartial. They are called "rubber stamps" for a value that has already been determined by the commissioners of the valuation (Bugeja, 2007; DeAngelo, 1990; Elnathan et al. 2009; Sweeney, 1999). In the article of Elnathan et al. 2010, the authors mention that when going along with the interests of the commissioner(s) of the valuation, the expert may provide a higher (lower) business value when the commissioner is the seller (buyer). The realized transaction value will usually be somewhere in between the values of the two business valuations (buyer vs. seller). According to Sman (1992), it is to be expected that business valuations commissioned by the seller (buyer) result in a higher business value (lower) than the transaction value that is realized.

The discrepancy between the results of business valuations commissioned by a buyer and a seller may even be greater in the valuations of privately held companies, compared to the valuations of publicly listed companies. This is due to the higher level of information asymmetry between buyers and sellers in the valuation of a privately held company. De Franco et al. 2008, explain this by the fact that publicly listed companies are required to fulfill regulatory and exchange requirements and issue extensive audited financial statements. In contrast, privately held companies do not have to prepare such comprehensive documents for regulators. Investment houses and banks also perform minimal monitoring and information collection on privately held companies. This in contrast to publicly listed companies, where sell- and buy side analysts closely monitor the companies. In general it can be stated that the financial statements of privately held companies are less extensive and of lower quality relative to the financial statements of publicly listed companies (Ball & Shivakumar, 2005; Burgstahler et al., 2006). Despite the relative lower quality of the financial statements of privately held companies they remain the main source of information that is being used by an appraiser to determine the business value. In association with this fact, is that expert appraisers strongly have to rely on these financial statements of privately held companies despite possible manipulation of these statements (Elnathan et al 2010).

Summarized, the results of the literature study state that the commissioner of the valuation can affect the results of the business valuation. When the buyer is the commissioner of the business valuation it may result in a business value that is significant lower than when the seller would be the commissioner of the valuation. These differences in business value may be even greater for the

valuation of privately held companies as compared to publicly listed companies due to a higher level of information asymmetry. These results leads to the following hypotheses:

Hypothesis 2

    a. *The level of discrepancy between business value and transaction value differs by the type of commissioner (i.e. buyer vs. seller) of the valuation.*

    b. *The determined business value is higher (lower) than the transaction value when the commissioner of the valuation is the seller (buyer).*

2.3.2 Transaction with inside-buyers vs. outside-buyers

The identity of the parties that are involved in a business transaction (i.e. buyers and sellers) requires a further identification. The selling parties in a business transaction are the current shareholders of the company which want to sell (a part of) their shares. On the other hand the buying parties could be interested parties from outside the company, but can also involve parties that are in some way already related to the company, e.g. current shareholders, family or the current management. In the latter case we speak of a so called management buy-out (MBO). A management buy-out is a transaction type at which the existing management acquires all (or the larger part) of the shares of the company (Wright et al. 1995). This type of transaction involves a private placement to inside-buyers (the management). In the article of Elnathan et al. 2009, results have shown that the discrepancy between business valuation and transaction value[14] is affected by whether the business transaction is concerning inside or outside buyers. The authors find a smaller level of discrepancy (13.2%) between business valuation and transaction value in transactions to insiders. In contrast, the level of discrepancy is larger (47.5%) in transactions involving transactions to outside parties.

With concern to the inside buyers, a specific group requires some further attention: the family related buyers. In family-held business, the family dynamics impact the business and influences the business behavior (Zahra & Sharma, 2004). Other than financial goals, the owner(s) in family-held business often pursue nonfinancial goals which do not directly benefit the economic business system. In contrast these nonfinancial, emotional returns, can even outweigh the lower financial returns to the family owner(s). Emotional well-being and family cohesion are aspects that are of importance in family-held business (Pieper, 2007). With exception of family conflicts, the family members share common family believes and assumptions with concern to (the future of) the family business (Astrachan & Jaskiewicz, 2008). In relation to business valuation, when both buyer and seller share the same assumptions about the (future of) the business, the appraised business value

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[14] Transaction value ('market value') of listed shares.

should be shared upon by both parties. The relation between family related buyers and sellers as compared to non-family related buyers and sellers suggest that the level of discrepancy between business value and transaction value should be lower for family related buyers compared to non-family related buyers. These results lead to the following hypotheses:

Hypothesis 3

a. *The level of discrepancy between business value and transaction value differs for transactions to inside buyers as compared to transactions to outside buyers.*

b. *The level of discrepancy between business value and transaction value is lower (higher) when the transaction is concerning with inside buyers (outside buyers).*

c. *The level of discrepancy between business value and transaction value differs for transactions to family related buyers as compared to transactions to non-family related buyers.*

d. *The level of discrepancy between business value and transaction value is lower (higher) when the transaction is to a family related (non-family related) buyers.*

2.4 Economic (market)conditions

Market conditions can cause values to vary materially from one date to another. The (financial) data that is required for a business valuation is directly influenced by the valuation date (Pratt et al, 2000). It is therefore important to note that in a business valuation, the appraised business value is the transaction value or price that can be expected in a transaction under the same conditions at the valuation date. For this reason, the date at which the business valuation is being performed is critically important. In the valuation process there are many endogenous and exogenous factors that are of influence on the change of interest in a company. For instance a change in a company's earnings, especially if unanticipated, will have a substantial effect on the business value. When market circumstances and market conditions changes, the value drivers at which the valuation is based may change as well. Changes in these value drivers can result in a different business value. Hence, the business value determined by a business valuation is only relevant during a short period of time due to possible changes in market conditions.

2.4.1 Macroeconomic context

The value drivers in a business valuation, are to greater or lesser extend influenced by changes in the macroeconomic context (Pratt et al. 2000). This macroeconomic context is driven by a complex set of factors. Under normal conditions the most prevalent determinants of the macroeconomic context are: gross national product (GNP) growth, inflation rates, interest rates and exchange rates. These factors are closely interrelated and tend to move in a cyclical fashion. Changes in these so called

macroeconomic variables are beyond the control of the company but can have a significant effect on the appraised business value (Scott, 1998). For instance, changes in interest and inflation rates, fall beyond the control of the company, but will affect the company's cost of capital and can hereby affect the appraised business value. Fontanills et al. 2001 emphasize that identifying the general trend in the market is an important factor that every investor needs to determine when committing a business transaction or any capital to an investment.

Besides the fact that the macroeconomic factors can impact the appraised business value it also influences the merger and acquisition (M&A) activity (i.e. number of completed business transactions) in the market. There are authors who state that a significant change in M&A activity is the result of economic shocks (Jovanovic & Rousseau, 2002; Harvard, 2004; Mitchell & Mulherin, 1996). One of the most recent economic shocks is the worldwide financial crisis. There is still some debate over the exact starting point of the financial crisis. However, the worldwide stock exchanges had serious downfalls in the period from 2007 till 2009. When comparing the M&A activity with respect to this period, it can be shown that the level of M&A activity has dropped significantly. Worldwide there was a decrease of 20% in M&A activity in the period from 2007 till 2009. In the same period the number of M&A deals in the Dutch market dropped by 33% (Thomson Financial, 2011[15]).

In the article of Harford (2005), the author states that merger activity will increase in periods following of high stock returns or high market-to-book-ratio's. Other authors state that significant changes in merger activity is correlated with high stock market valuations (Sheifer & Vishney, 2003; Rhodes-Kropf & Vishwanathan 2003). This is confirmed by the study of Verter (2002) who state that the level and dispersion of the stock market valuation is correlated with merger activity.

According to Sharma & Wongbangpo 2002 and Fisher & Merton, 1985 the stock market is a good predictor of the business cycle and the components of gross national product (GNP). Sharma & Wongbangpo 2002 also state that there are long and short term relationships noticeable between stock prices and macroeconomic variables. When comparing the Dutch stock market (AEX-index) with the Dutch M&A activity for the period from 2003 till 2009, it can be shown that to a certain extend there is a relation between the M&A activity and the performance of the stock market. The financial crisis (i.e. economic shock) have had a significant negative effect on the M&A activity and the trend of the AEX-index. This is graphically shown in figure 2.2, which shows the Dutch M&A

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[15] Thomson Financial includes data on M&A deals that comply with selected criteria.

activity (overfusies.nl, 2010) and the trend of the AEX-index (euronext.com) in the period from 2003 till 2010. A clear drop in both the M&A activity and the trend of the AEX-index is observable in the period from end 2007 till the beginning of 2009.
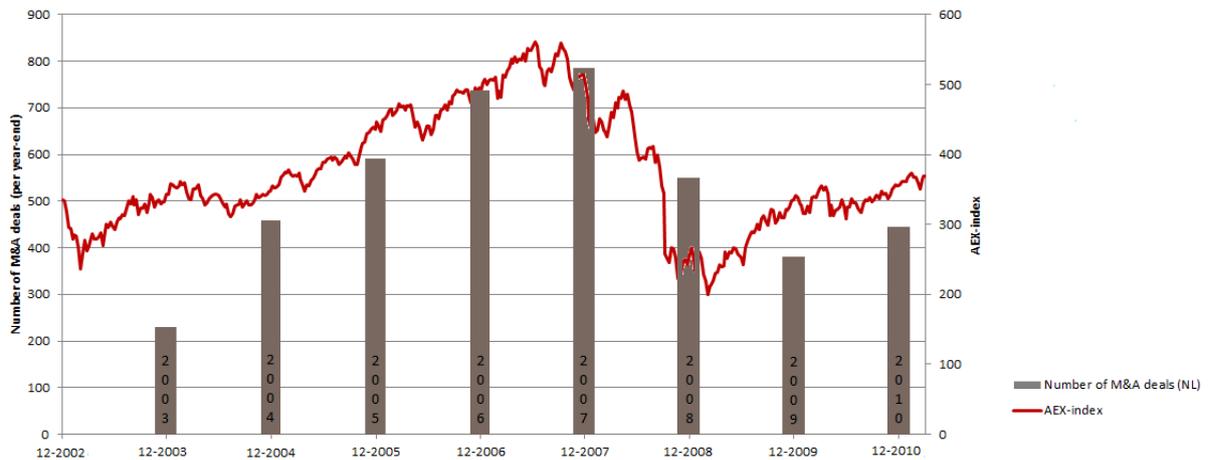
Figure 2.2: M&A activity in the Dutch market and the slope of the AEX-index for the period 2003-2010.

In addition to a drop in M&A activity, the financial crisis also caused a significant decrease in the level of the realized transaction values. The level of the realized transaction values in the Dutch M&A market dropped by 59% in the period from 2007 till 2008 whereas the number of deals dropped by 30% in the same period (Overfusies, 2011). Therefore, the macroeconomic context does not only have an impact on the number of business transactions but it also impacts the level of the transaction values. The decrease in M&A activity and the level of transaction values during a downward market trend (i.e. bear market) indicate a lower level of competition among potential buyers. On the other hand, the increase in M&A activity and transaction values indicate a higher level of competition. The higher level of competition between potential buyers could affect the discrepancy between business value and transaction value to increase and vice versa. In the study of Elnathan et al. 2009, the authors studied, among others, whether the macroeconomic context (i.e. market trend) would be of influence on the level of discrepancy between business value and transactions value[16]. The results from their study showed indications that the discrepancy between business value and transaction value is affected by the market trend.

Summarized, the literature states that the valuation date with regard to the business valuation is critically important, since performing the valuation at another date can results in a different business value. Secondly, the market conditions affect the M&A activity, the level of transaction values and the level of competition among potential buyers. Finally the study of Elnathan et al. 2009 showed

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[16] Transaction value ('market value') of listed shares.

that the discrepancy between business value and transaction value seems to be affected by the macroeconomic context. When relating these findings to the subject of this research study, the level discrepancy between business value and transaction value, this leads to the following hypotheses:

Hypothesis 4

    a.   *The level of discrepancy between business value and transaction value differs by the market trend (bull market vs. bear market).*

    b.   *The level of discrepancy between business value and transaction value larger (smaller) when the market is trending upwards (downwards)*

2.4.2 Industry sector

As is state in paragraph 2.4.1 the macroeconomic context is of impact on the M&A activity and the level of the transaction values. However, so far it has not yet been considered whether the macroeconomic context is affecting different industries in a different way. In the article of Scott, 1998, it is stated that different industries will be affected differently by changes in the macroeconomic context. Changes in the M&A activity per industry, by changes in the macroeconomic context, are also observable. In the Dutch M&A market the number of deals in the retail sector dropped by 52% in the period from 2008 till 2009, whereas the decline in the logistic sector for the same period was only 15% (Overfusies, 2011). These figures show that the M&A activity in different industries, are to a greater or to a lesser extend affected by the macroeconomic context. In relation to the research goals of this study these findings result in the formulation of the following hypothesis:

Hypothesis 5

    The level of discrepancy between business value and transaction value differs between industry sectors.

2.4.3 Business size

So far, no attention has been given yet to the relative size of the businesses in a business transactions. There are two general approaches to the definition of size: by taken the turnover of a company as expressed in monetary terms and by the number of employees (Kitov, 2009). The European Commission (2005) have categorized business size by number of employees, turnover and balance sheet total (table 2.2). Business size is considered to be an important aspect with respect to business valuation (Hirschey & Spencer 1992). A relative large part of the value of smaller business is determined by growth opportunities. In contrast the value of larger businesses are more closely related to cash flows derived from assets that are already in place. The future free cash flows of

smaller businesses are therefore considered to be more risky (Hirschey & Spencer 1992). In the valuation of small businesses a so called small firm premium can be added to take account for the extra risk. Business size is also expected to impact the post-value of the target business in a business transaction differently for smaller business compared to larger businesses (Wilcox et al. 2001). The change in value will be greater for the smaller party in the transaction.

In scientific literature it is extensively studied how business size is of impact on the business valuation and the appraised business value. However no research has been done yet to whether business size would affect the level of discrepancy between business value and transaction value in the course of business transactions. To study whether there are difference in the level of discrepancy in relation to the business size the following hypothesis has been drawn:

Hypothesis 6

> *The level of discrepancy between business value and transaction value differs by the relative size of the target business in the transaction.*

Business size category	Number of employees	Turnover	Balance sheet Total
Large	> 250	> 50 million	> 43 million
Medium	< 250	≤ 50 million	≤ 43 million
Small	< 50	≤ 10 million	≤ 10 million
Micro	< 10	≤ 2 million	≤ 2 million

Table 2.2: Business size classification by the European Commission (2005)

2.5 Research model with hypotheses
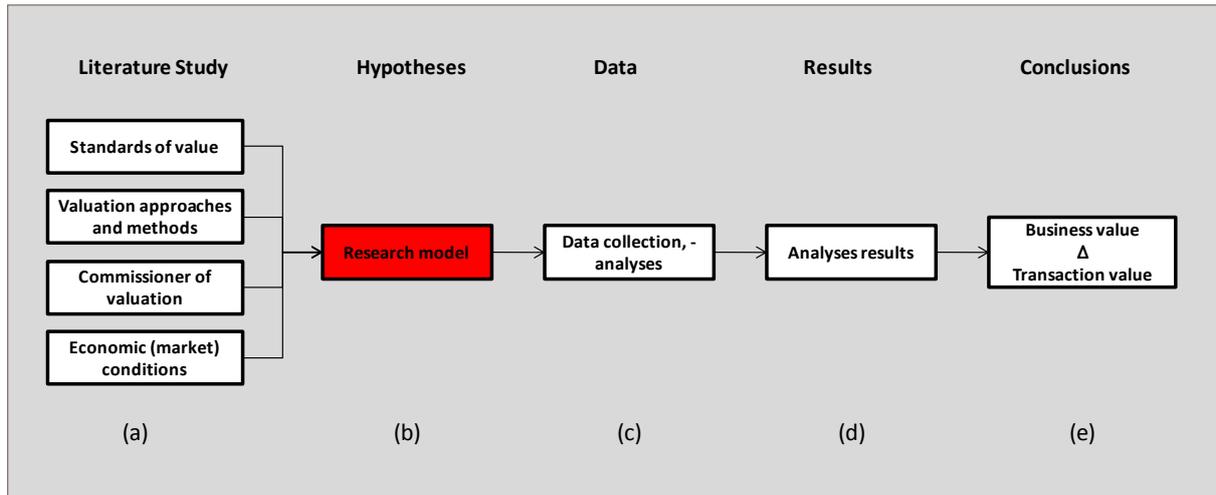
Figure 2.3: Research framework related to the research study, section b.

The literature study has resulted into six main hypotheses on factors that could affect the level of discrepancy between business value and transaction value. These hypotheses are based on the following factors: valuation method, valuation commissioner, type of buyer, the market trend, the industry sector and the business size. The factors are supported by the study of Elnathan et al. 2009. In the figure below (figure 2.4) the research model including the six main hypotheses is given. In the next chapter the research methodology, the data collection and the data analysis that will be used to empirically test these hypotheses will be described.
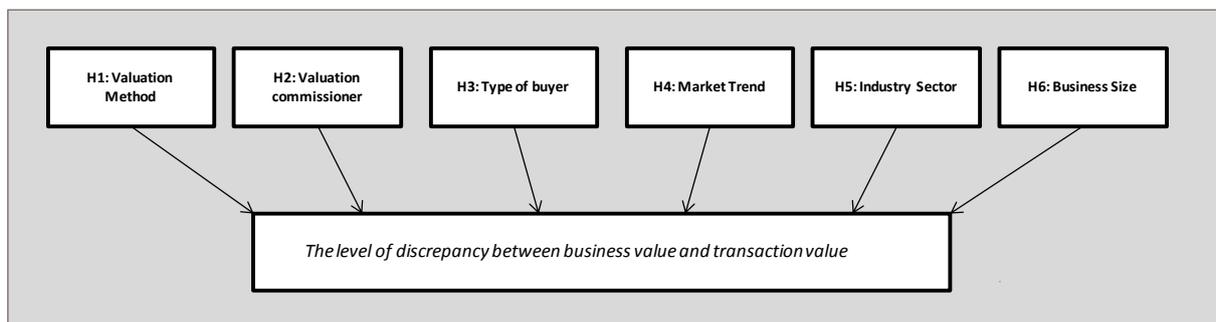
Figure 2.4: Research model with hypotheses on the level of discrepancy between business value and transaction value.

3. Data
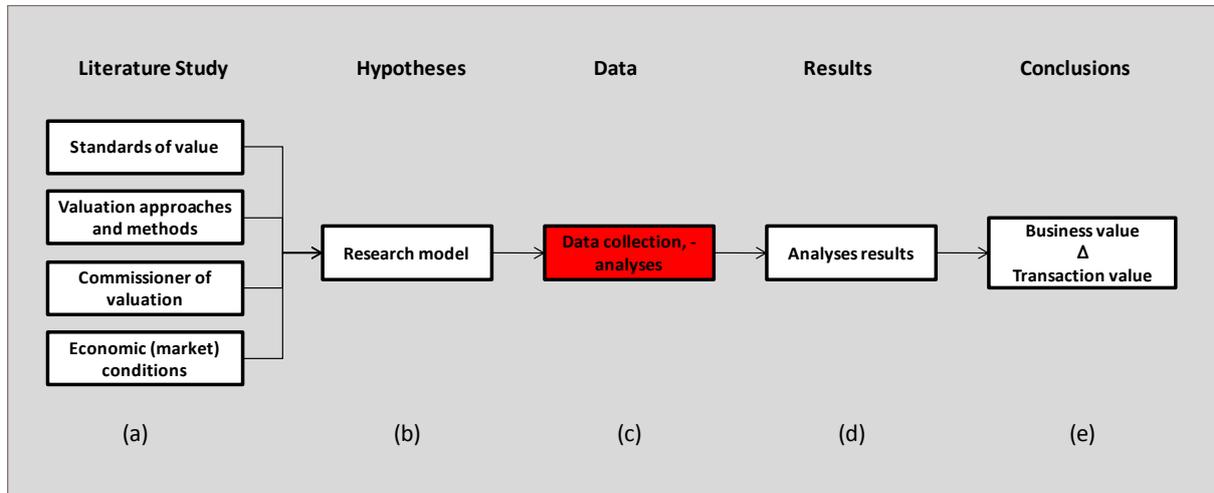
Figure 3.1: Research framework related to the research study, section c.

3.1 Data collection

For this research study, business transactions concerning privately held companies in the Dutch small and medium enterprise market sector have been studied. The data is collected from several databases within the department of BDO Corporate Finance. BDO Corporate Finance is a department of BDO Accountants & Consultants, which belongs to the top 5 accountancy and consultancy organizations in the Netherlands. The Corporate Finance department of BDO is involved in the advisory and mediation of mergers & acquisitions, management buy-outs, business valuations and financing in the Dutch small and medium enterprise market sector. Detailed information about business transactions in the small and medium enterprise market sector are generally not publicly available. Therefore the available data within the Corporate Finance department provides a unique opportunity to carry out a research on business transactions in the Dutch small and medium enterprise market sector.

3.1.1 Procedure

At first a list of all the business transactions at which BDO Corporate Finance was involved, from the present to the survey able past, has been composed. Thereafter, the business transactions were matched with the responsible valuation experts. Since this research study has the goal of investigating the level of discrepancy between business value and transaction value, it was important that both the final valuation report and the signed share purchase agreement (SPA) with concern to the business transaction were available. This was to make sure that the appraised business value and the transaction value were available. In consultation with the responsible valuation experts each

selected business transaction has been evaluated on the usability for this research study. This has resulted in 80 qualified business transactions in the period from December 2003 till May 2011.

3.2 Data analysis

3.2.1 Operationalization of the research variables

The different research variables that are being used for this research study, will have to be operationalized in order to carry out the data analyses. Therefore, the different research variables have been categorized and coded. An overview of the dependent and independent variables is presented in table 3.1.

Variable	Nature of variable	Values	Type of variable	Observations (N)
Discrepancy	Interval	Scale	Dependent	80
Business value	Interval	Scale	Independent	80
Transaction value	Interval	Scale	Independent	80
Valuation method	Nominal	0 = DCF 1 = VR 2 = Multiple 3 = Intrinsic value 4 = Liquidation	Independent	79
Commissioner of valuation	Nominal	0 = Buyer 1 = Seller	Independent	65
Business value high/low Transaction value	Nominal	0 = Lower 1 = Higher 2 = Equal	Dependent	
Type of buyer	Nominal	0 = Inside 1 = Outside	Independent	80
Type of buyer2	Nominal	0 = Family related 1 = Non family related	Independent	80
Date of transaction	Nominal	0 = Bull market trend 1 = Bear market trend	Independent	80
Industry sector	Nominal	0 = Energy and Utilities/Mining, 1 = Transport/Logistics 2 = Retail 3 = Telecom 4 = Pharma/Biotech/Medical 5 = Industrials 6 = Technology 7 = Leisure	Independent	80

		8 = Business Services		
		9 = Construction/Real estate		
		10 = Consumer products/foods		
		11 = Media		
		12 = Financials		
		13 = Agriculture		
Business size	Interval	Scale	Independent	66
Business size 2	Nominal	0 = medium size business	Independent	66
		1 = small size business		

Table 3.1: List of the dependent and independent variables, categorized and coded.

Discrepancy – The level of discrepancy between business value and transaction value is the dependent variable in this research study. The level of discrepancy has been calculated by using the appraised business value and the realized transaction value. The business value reduced by the transaction value divided by the transaction value multiplied by 100 has resulted in the level of discrepancy between business value and transaction value in percentage of the transaction value. Since this research study has the intention to study *the level of* discrepancy, the calculation has been carried out in absolute values. In mathematical formula the calculation can be written as:

$$The\ level\ of\ discrepancy = \left[\frac{(BV - TV)}{TV} * 100\right]$$

 Where,

        BV = The business value in €

        TV = The transaction value in €

Business value – The business value has been used to calculate the level of discrepancy. The business value is derived from the final valuation reports with concern to the business transactions and has been verified by the responsible valuation expert.

Transaction value – The transaction value has been used to calculate the level of discrepancy. The transaction values are derived from the signed share purchase agreements (SPA) with regard to the business transactions.

Valuation method – To determine whether there are difference in the level of discrepancy with concern to the valuation method that has been used for the business valuation, the valuation methods have been categorized. The valuation methods from the sample have been coded as DCF=0, VR=1, Multiple=2, Intrinsic=3 and liquidation value=4.

Commissioner of valuation – A distinction has been made to whether the business valuation is commissioned by the buyer or the seller (i.e. the commissioner). Business valuations which have commissioned by the buyer have been coded 0 and business valuations commissioned by the seller have been coded 1.

Business value higher/lower than Transaction value –In this research study it is also intended to study whether the appraised business value would be higher or lower than the realized transaction value. Business transactions in which the appraised business value is lower than the realized transaction value have been coded 0, business value higher than the realized transaction value have been coded 1 and business value equal to the realized transaction value have been coded 2.

Type of buyer: Inside or outside buyers – With concern to the buyers in a business transaction, a distinction has been made to whether the buyers are from within (i.e. with a direct relation to) the target company or whether it concerns buyers from outside the target company. Buyers from within the target company have been coded 0 and buyers from outside the target company have been coded 1.

Type of buyer 2: Transaction to family –Not only a distinction has been made to whether the buyers are from within or outside the target company, but also to whether the buyers and sellers are family related or not. This has been done to study whether business transactions to family related buyers could have a different effect on the level of discrepancy than business transactions to non-family related buyers. Family related buyers have been coded 0 and non family related buyers have been coded 1.

Date of Transactions – To analyze whether there are differences in the level of discrepancy with regard to the market trend, the transaction dates have been categorized in bull market and bear market (i.e. upward or downward market trend). The dates that have been used in this research study are the dates at which the share purchase agreements were signed. Within the data sample, these transaction dates range from December 2003 till May 2011 (figure 3.2). With concern to the market trend, the transaction dates which can be linked to a bull market (market trending upwards) have been coded 0 and those which can be linked to a bear market trend (market trending downwards) have been coded 1.
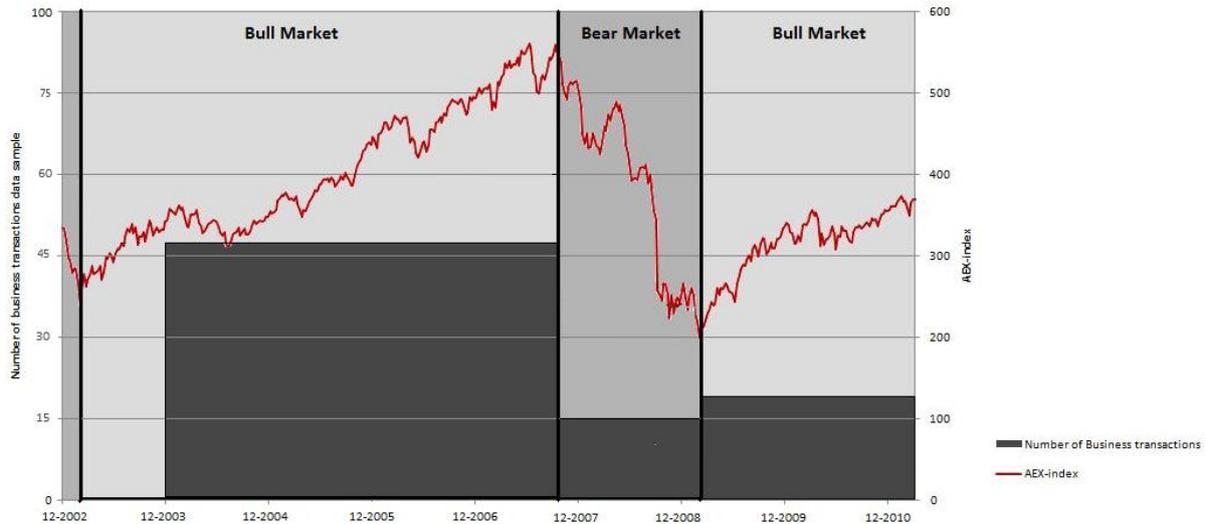
Figure 3.2: Number of business transactions data sample and the slope of the AEX-index for the period 2003-2010.

Industry sector – In this research study a distinction has been made with regard to the industry sectors at which the target companies of the business transaction could be categorized. This has been done to study whether there are differences in the level of discrepancy with regard to the industry sectors. The categorization is based on the same categorization that has been used by Sdu publishers (overfusies.nl) which reports quarterly and annually about M&A transactions in the Dutch market. In total fourteen different industry sectors have been distinguished which were coded as follows: Energy and Utilities/Mining=0, Transport/Logistics=1, Retail=2, Telecom=3, Pharma/Biotech/Medical=4, Industrials=5, Technology=6, Leisure=7, Business Services=8, Construction/Real estate=9, Consumer products/foods=10, Media=11, Financials=12 and Agriculture=13.

Business size – Business size has been defined as the total sales of the target company as expressed in monetary terms.

Business size 2 – For this research study the data with regard to the business size has also been divided into two categories: medium size businesses (coded as 0) and small size businesses (coded as 1).

3.2.2. Analyses methods

The dependent and key variable in this research study is the level of discrepancy between business value and transaction value. Before testing the hypotheses, it was necessary to determine whether the dependent variable (i.e. the level of discrepancy) was normally distributed or not. This is required

to determine what type of statistical tests could be applied in order to test the hypotheses. Most general analyses models are general linear models, GLM-Multivariate and GLM-Univariate (Ellis, 2003). These analyses models require the dependent variable to be normally distributed. When the dependent variable has no normal distribution, the GLM-analyses cannot be applied. The calculated *p*-value will then be incorrect which could lead to drawing the wrong conclusions (Ellis, 2003, Green & Salkind, 2008). When the dependent variable has no normal distribution, non-parametric tests can be applied. Non-parametric tests are statistical tests at which no assumptions will be made about the distribution of the dependent variable. Non-parametric test have to be used in situations when:

- The distribution of the dependent variable is significantly different from the normal distribution;
- The dependent variable is qualitative or consists of rank orders;
- The results only have ordinal meaning.

To determine whether general linear models or non-parametric tests will have to be applied in this research study it was necessary to test whether the dependent variable (i.e. the level of discrepancy) has a normal distribution or not. The Kolmogorov-Smirnov tests can be used to test whether an observed distribution of a variable matches with a theoretical distribution e.g. the normal or uniform distribution (Eelko, 2006). For this reason, the Kolmogorov-Smirnov test has been applied to test whether the distribution of the dependent variable of this research study, matches with a normal distribution. The results from the Kolmogorov-Smirnov tests showed that the distribution of the dependent variable is significantly different from the normal distribution (*Kolmogorov-Smirnov Z*=1950, *p*=.001). Since the distribution of the dependent variable differs from the normal distribution, non-parametric tests will have to be applied in order to test the hypotheses in this research study.

An analysis will be performed to show the general level of discrepancy between business value and transaction value of the total data sample. Thereafter, hypothesis 1-6 will be tested by using the Mann-Whitney U test, the Kruskal-Wallis test, the Chi-square test and the Spearman rank correlation test. The first two tests are both examples of non-parametric tests but they differ in the number of categories of the independent variable that they distinguish. The Mann-Whitney U test distinguishes two groups of the independent variable and the Kruskal-Wallis test distinguishes two or more groups. The Mann-Whitney U test and the Kruskal-Wallis test evaluate whether the mean ranks for the groups significantly differ from each other. The Chi-square test can be used to study the relationship between two categorical variables. Finally the Spearman rank correlation test can be

used when one or both interval type variables are not assumed to be normally distributed. The values of both variables are converted into ranks and correlated. By using respectively the valuation method, valuation commissioner, type of buyer, the market trend, the industry sector and the business size as independent variables answers may be given about the effect of these factors on the level of discrepancy between business value and transaction value (i.e. the dependent variable). In the next chapter the results of the analyses are being presented.

4.   Results
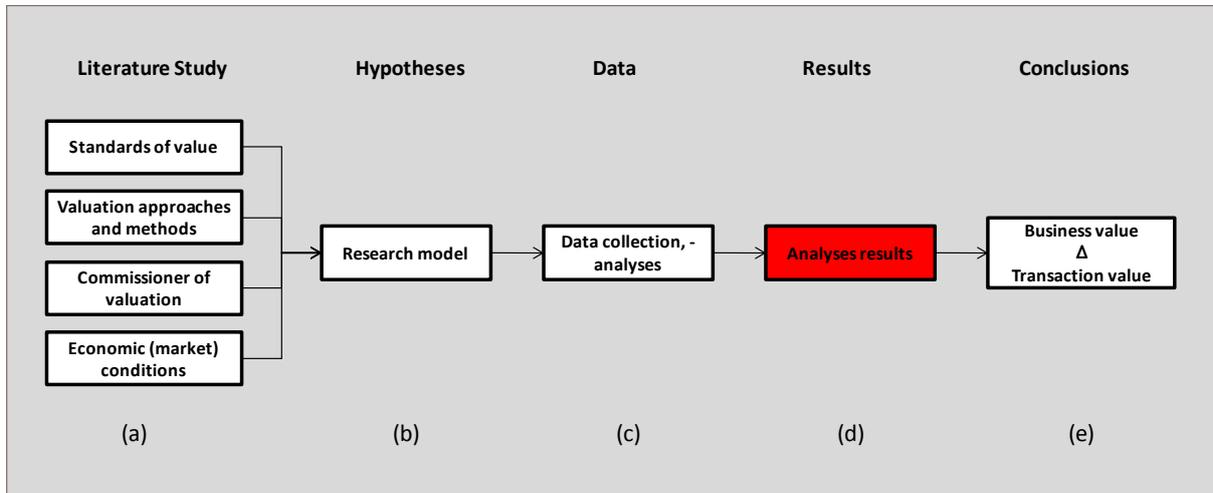
Figure 4.1; Research framework related to the research study, section d.

4.1 Level of discrepancy of the total research sample

Before presenting the analyses results with concern to the hypotheses, it is first determined what the general level of discrepancy is between the appraised business value and the transaction value within the total research sample. Thereafter the results of the analyses with concern to the hypotheses will be treated and explained.

Main hypothesis

> *There is a level of discrepancy between the appraised business value and the transaction value in business transactions between privately held companies in the Dutch SME sector.*

To determine the general level of discrepancy between business value and transaction value, the total research sample of 80 business transactions has been analyzed (see table 4.1). In 72 out of the total of 80 investigated transaction there was a discrepancy observable between business value and transaction value. The main hypothesis of this research study, which states that there is a discrepancy between business value and transaction value, can therefore be accepted. The average level of discrepancy between business value and transaction value within the total data sample is 19,72%, with a median value of 9,44%. The maximum level of discrepancy in the research sample between business value and transaction was 123,92%. This is concerning to a specific business transaction at which there was a relatively large level of discrepancy between the appraised business value and the transaction value.

Variable	N	Mean	Median	Std. Deviation	Minimum	Maximum
The absolute level of discrepancy in % of the transaction value	80	19,7152	9,4385	25,31728	0,00	123,92

Table 4.1; the dependent variable 'level of discrepancy' with the mean, median, standard deviation, minimum and maximum values.

4.2 Level of discrepancy and the valuation method

Hypothesis 1

 a. *The level of discrepancy between business value and transaction value differs by the type of valuation method that has been used in the valuation process.*

 b. *The level of discrepancy between business value and transaction value is least when the DCF-model has been used in the valuation process*.

To analyze whether the level of discrepancy between business value and transaction value differs by the type of valuation method which has been used in the business valuation the Kruskal-Wallis test has been applied. In this test the level of discrepancy has been included as the dependent variable and the valuation method as independent variable. From the test results it shows that there is a marginal significant[17] effect of the valuation method on the level of discrepancy (x^2 (4, N = 79) = 8.56, p = .07). The mean values with concern to the different valuation methods are therefore significantly different from each other (table 4.2). Since the test results show a marginal significant effect, it can be stated that the level of discrepancy probably differs by the type of valuation method which has been used to determine the business value. These results support hypothesis 1a, which therefore can be accepted. When taken a closer look at the mean values that are listed in table x, it can be observed that from the total of five examined valuation methods, 94% of the total sample is related to two types of valuation methods (i.e. the DCF and the VR). To test whether there are differences between these two valuation methods a Mann-Whitney U test has been applied. The test results show that there are no significant differences between the effect of these two valuation methods on the level of discrepancy (z = -.37, p = .71). A further analysis of the mean values with concern to the different valuation methods showed that, unlike the statement made in hypothesis 1b, the level of discrepancy is not the least when the DCF valuation method has been used. On the contrary, the mean values show that the level of discrepancy is greatest when the DCF valuation method has been used. Therefore the statement in hypothesis 1b will have to be rejected.

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[17] Marginal significant when $.05 < p < .10$ (Ellis, 2003)

Valuation Method	N	Mean	Median	Std. Deviation	Minimum	Maximum
DCF	49	23,9587	13,4531	29,25630	0,00	123,92
VR	25	15,7900	11,1840	16,10330	0,00	59,91
Multiple	1	0 ,0000	0 ,0000	.	0,00	0,00
Intrinsic	3	2,8220	0,5478	4,42193	0,00	7,92
Liquidation	1	0,0239	0,0239	.	0,02	0,02
Total	79	19,9648	9,6710	25,37983	0,00	123,92

Table 4.2; the mean values of the independent variable "valuation method" on the dependent variable "the level of discrepancy" between business value and transaction value, *N=79*.

4.3 Level of discrepancy and the commissioner of valuation

Hypothesis 2

    a. *The level of discrepancy between business value and transaction value differs by the type of commissioner (i.e. buyer vs. seller) of the valuation.*

    b. *The determined business value is higher (lower) than the transaction value when the commissioner of the valuation is the seller (buyer).*

To examine the influence of the commissioner type of the valuation on the level of discrepancy, the Mann-Whitney U test has been applied. The level of discrepancy has been included as the dependent variable and the commissioner of valuation as the independent variable. The test results show that there is no significant influence of the commissioner type of valuation on the level of discrepancy ($z =$ -0.37, p = .72). Therefore, it cannot be stated that the level of discrepancy differs by the commissioner of valuation, for which the statement made in hypothesis 2a will have to be rejected. When comparing the mean values with concern to the commissioner of valuation, it can be seen that both values are relatively equal to each other (table 4.3). In order to test the statement in hypothesis 2b, a Chi-square test has been applied. Results from the Chi-square test show that there is a marginal significant effect between the commissioner of the valuation and whether the determined business value is lower or higher than the transaction value (x^2 (1, N = 65) = 3.20, p= .07). The Chi-square test notes that there is 1 cell with an expected frequency less than 5, therefore the Exact-method also has been applied to test the level of significance. The results from the Exact-method also show a marginal significant effect (x^2 (1, N = 65) = 3.20, p = .09). Therefore it can be stated that the probability that the business value would be lower or higher than the transaction value, probably differs by the commissioner type (i.e. buyer or seller) of the valuation. Table 4.4 lists the frequencies distribution with concern to the two variables. The probability for the appraised business value to be

lower than the transaction value is greater for transaction in which the commissioner of valuation was the buyer (38 % vs. 16%). On the contrary, the probability for the business value to be higher than the transaction value is greater for transactions in which the commissioner of valuation was the seller (84% vs. 63%). Although the test results show that the type of commissioner is of effect on whether the appraised business valuation would be higher or lower than the transaction value, hypothesis 2b cannot be accepted. This is because the test results only confirm a difference, but it cannot be stated that the business value in general would be higher (lower) then the transaction value, when the commissioner of the valuation is the seller (buyer).

Commissioner	N	Mean	Median	Std. Deviation	Minimum	Maximum
Buyer	16	21,3379	10,4966	25,83373	0,86	93,73
Seller	49	24,2008	14,5503	27,00776	0,67	123,92
Total	65	23,4961	13,4531	26,55233	0,86	123,92

Table 4.3; the mean values of the independent variable "commissioner" on the dependent variable "the level of discrepancy" between business value and transaction value, *N=65*.

Business value lower/higher than transaction value	Commissioner of valuation		Total
	Buyer	Seller	
Lower	6	8	14
Higher	10	41	51
Total	16	49	65

Table 4.4; the frequencies of the two variables commissioner and business value lower/higher than transaction value, *N=65*.

4.4 Level of discrepancy and the type of buyer

Hypothesis 3

a. *The level of discrepancy between business value and transaction value differs for transactions to inside buyers as compared to transactions to outside buyers.*

b. *The level of discrepancy between business value and transaction value is lower (higher) when the transaction concerns inside buyers (outside buyers).*

c. *The level of discrepancy between business value and transaction value differs for transactions to family related buyers as compared to transactions to non-family related buyers.*

d. *The level of discrepancy between business value and transaction value is lower (higher) when the transaction is to family related (non-family related) buyers.*

The Mann-Whitney U test has been applied in order to test whether the level of discrepancy between business value and transaction value differs by the type of buyers in the business

transaction (inside versus outside buyers). The results of the Mann-Whitney U test, show that there is a significant difference in the level of discrepancy by the type of buyer (z = -4.07, p = .00). The results therefore confirm the statement made in hypothesis 3a, for which the hypothesis can be accepted. The mean values of the level of discrepancy with concern to the type of buyer have been listed in table 4.5. With concern to inside buyers the mean value of the level of discrepancy is 9,96. The mean values of the level of discrepancy with concern to outside buyers is 24,97. These results support the statement made in hypothesis 3b that the level of discrepancy is lower when the transaction is related to inside buyers as compared to outside buyers. Therefore, the statement made in hypothesis 3b can also be accepted.

In order to test whether the level of discrepancy significantly differs for business transaction to family related as compared to non-family related buyers, the Mann-Whitney U test has been applied. Results from the test show that there is a significant difference in the level of discrepancy with concern to family related and non-family related buyers (z = -4.61, p = .00). These results give support to the statement made in hypothesis 3c, which therefore can be accepted. Table 4.6 lists the mean values of the level of discrepancy with concern to family related and non-family related buyers. With concern to family related buyers the mean value of the level of discrepancy is 3,33. The mean value of the level of discrepancy with concern to non-family related buyers is 23,50. These results support the statement made in hypothesis 3d that the level of discrepancy is lower when the transaction is concerned with family related buyers as compared to non-family related buyers. Therefore hypothesis 3d can also be accepted.

Type of buyer	N	Mean	Median	Std. Deviation	Minimum	Maximum
Inside	28	9,9598	4,0093	19,72501	0,00	93,73
Outside	52	24,9681	15,0419	26,58010	0,67	123,92
Total	80	19,7152	9,4385	25,31728	0,86	123,92

Table 4.5; the mean values of the independent variable "type of buyer" (inside versus outside) on the dependent variable "the level of discrepancy between business value and transaction value", *N=80*.

Type of buyer	N	Mean	Median	Std. Deviation	Minimum	Maximum
Family	15	3,3314	0,0239	6,31815	0,00	19,55
Non-family	65	23,4961	13,4531	26,55233	0,67	123,92
Total	80	19,7152	9,4385	25,31728	0,00	123,92

Table 4.6; the mean values of the independent variable "type of buyer" (family or non-family) on the dependent variable "the level of discrepancy between business value and transaction value", *N=80*.

4.5 Level of discrepancy and the market trend

Hypothesis 4

   a. *The level of discrepancy between business value and transaction value differs by the market trend (bull market vs. bear market).*

   b. *The level of discrepancy between business value and transaction value larger (smaller) when the market is trending upwards (downwards)*

To test whether the level of discrepancy differs by the market trend, a Mann-Whitney U test has been applied. Results from the test show that there is no significant effect in the level of discrepancy with concern to the market trend (z = -.55, p = .58). The results of the test give no support to hypothesis 4, which therefore will have to be rejected. Table 4.7 lists the mean values of the level of discrepancy with concern to the market trend. The mean value of the level of discrepancy for business transactions during a bull market is 20% and during a bear market 17%. These mean values imply that, in accordance with hypothesis 4b, the level of discrepancy is larger for transactions during a bull market as compared to transactions during a bear market. However, the Mann-Whitney U test has shown no significant difference between bull and bear markets and the level of discrepancy. Hypothesis 4b can therefore not be accepted.

Market trend	N	Mean	Median	Std. Deviation	Minimum	Maximum
Bull market	65	20,3259	9,2048	27,10088	0,00	123,92
Bear market	15	17,0691	13,4531	15,81504	0,00	61,27
Total	80	19,7152	9,4385	25,31728	0,00	123,92

Table 4.7; the mean values of the independent variable "market trend" (bull market, bear market) on the dependent variable "the level of discrepancy between business value and transaction value", *N=80*.

4.6 Level of discrepancy and the industry sector

Hypothesis 5

   The level of discrepancy between business value and transaction value differs between industry sectors.

To analyze whether the level of discrepancy between business value and transaction value differs by the industry sector of the target company in the transaction, the Kruskal-Wallis test has been applied. In this test the level of discrepancy has been included as the dependent variable and the industry sector as independent variable. From the test results, it shows that there is a significant

effect between the industry sector and the level of discrepancy (x^2 (8, N = 80) = 18.96, p = .02). The mean values of the level of discrepancy, with concern to the industry sector, are therefore significantly different from each other (table 4.8). The highest level of discrepancy has been found in the business service sector (33%) and the lowest in the energy and utilities sector (1%).

Industry sector	N	Mean	Median	Std. Deviation	Minimum	Maximum
Energy and Utilities/Mining	4	1,2500	0,0000	2,50000	0,00	5,00
Transport/Logistics	3	27,2344	14,3293	28,50449	7,46	59,91
Retail	9	20,7065	14,5503	17,70441	1,79	59,41
Pharma/Biotech/Medical	4	24,6915	20,6462	25,68320	0,00	57,47
Industrials	12	11,1296	2,9649	26,29285	0,00	93,73
Technology	4	9,3847	3,6599	12,00316	2,86	27,36
Business Services	22	32,5235	19,6162	35,24031	0,76	123,92
Construction/Real estate	17	12,7832	12,0000	10,40784	0,00	33,40
Consumer products/foods	5	20,2930	19,5529	17,86139	0,86	45,45
Total	80	19,7152	9,4385	25,31728	0,00	123,92

Table 4.8; the mean values of the independent variable "industry sector" on the dependent variable "the level of discrepancy between business value and transaction value", *N=80*.

4.7 Level of discrepancy and the business size

Hypothesis 6

> *The level of discrepancy between business value and transaction value differs by the relative size of the target business in the transaction.*

In order to test whether the level of discrepancy between business value and transaction value differs by the relative size of the target business, a Spearman rank correlation test has been applied. The test results show that there is no significant effect of the relative business size on the level of discrepancy (R_s = -.162, p = .18). Since no significance has been found, it cannot be stated that the level of discrepancy differs by the relative size of the target company. Furthermore, a distinction has been made with regard to the two categories of small and medium sized businesses. A Mann-Whitney U test has been applied to test whether there are differences between the two categories of small and medium sized businesses with respect to the level of discrepancy. Results from the test showed that there is no significant effect in the level of discrepancy with concern to small or medium sized businesses (z= -.58, p = .56). The mean values of the level of discrepancy, with concern to the business size, are therefore not significantly different from each other (table 4.9). The statement made in hypothesis 6 will therefore have to be rejected.

Business size	N	Mean	Median	Std. Deviation	Minimum	Maximum
Medium	20	13,8487	10,1951	15,19882	0,00	59,91
Small	46	21,8940	9,0162	29,32252	0,00	123,92
Total	66	19,4560	9,4385	26,01266	0,00	123,92

Table 4.9; the mean values of the independent variable business size on the dependent variable the level of discrepancy between business value and transaction value, *N=66*.
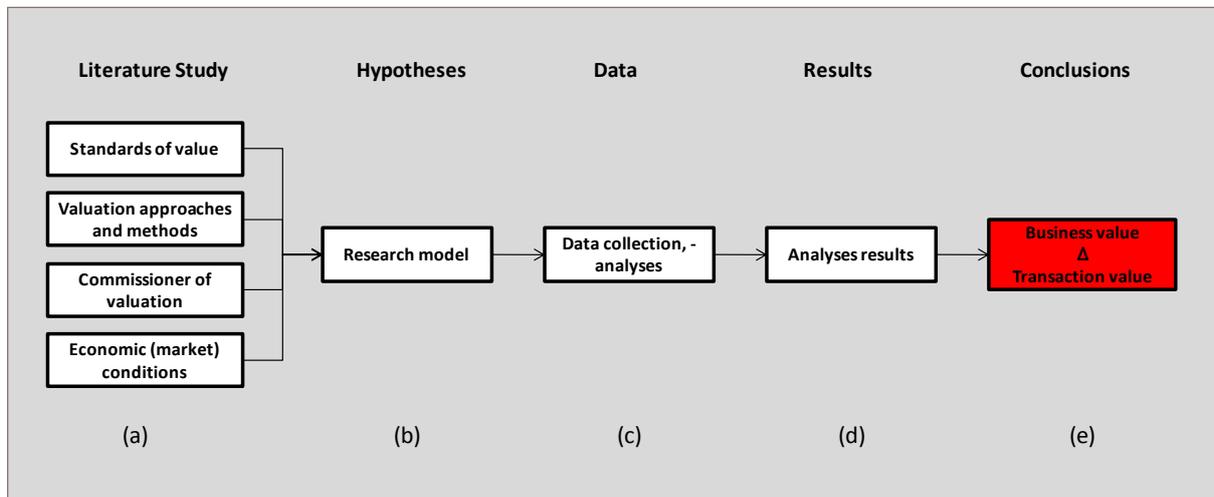
5.   Conclusions and discussions

Figure 5.1; Research framework related to the research study, section e.

This research study has attempted to gain insight into the relationship between business value and transaction value with concern to business transactions. For this purpose six factors have been examined: valuation method, valuation commissioner, type of buyer, market trend, industry sector and business size. The study provides answers in which way these factors are of effect on the level of discrepancy between the business value and the transaction value. This chapter will at first discuss the outcome of the analyses results. Thereafter the shortcomings of this research study will be discussed and recommendations for further research will be presented.

5.1 Conclusions and discussions of the results

The results from the study showed that, from the six hypotheses that were tested, three can be accepted because the results were (marginally) significant (figure 5.2). The overall results from the analyses confirm the existence of a discrepancy between business value and transaction value. The study showed that in 72 out of the total of 80 investigated business transactions there was a discrepancy between the appraised business value and the transaction value. Based upon these results, it can be stated that the appraised business value is most often different from the realized transaction value, which is supported by Duffhues, 1991 & Sman, 1992. These authors state that the business value is considered to be merely a theoretical price. On the other hand, the transaction value is the price at which the transaction is eventually closed. Different interests by both buyer and seller can cause these two values to differ from each other (Duffhues, 1991).
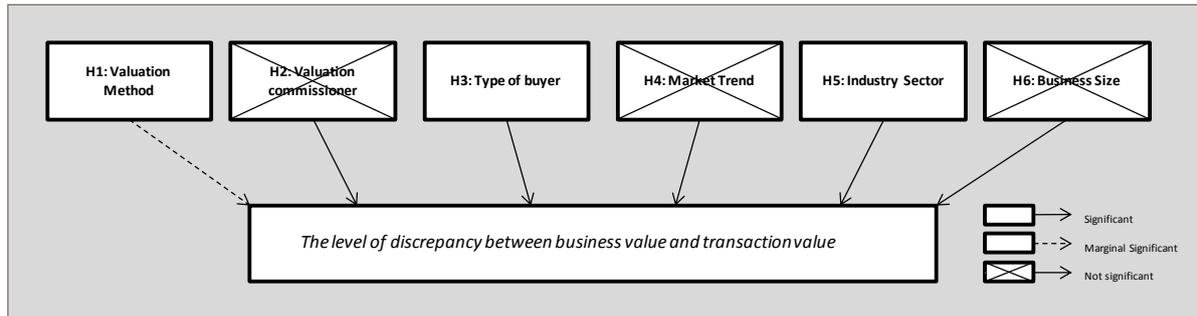
Figure 5.2: The research model with the (non)significant hypotheses on the level of discrepancy between business value and transaction value.

5.1.2 Level of discrepancy and the valuation method

Regarding the valuation method that has been used in the valuation process, differences in the level of discrepancy between business value and transaction value have been found. The results show a small level of discrepancy (0-3%) in transactions in which the multiple, intrinsic value or liquidation value has been used to determine the business value. A relatively larger discrepancy (16-24%) is observable when the VR or DCF valuation method has been used to determine the business value. Important to note, is that these results do not suggest that the multiple, intrinsic and liquidation value are more precise in determining the value of a business compared to the DCF and VR methods. It merely states that when these valuation methods have been applied, the appraised business values and the corresponding transaction values are closer related to each other. It is difficult to attach conclusions to these results since only 5 out of the total of 80 transactions are related to the multiple, intrinsic value and liquidation value method. A possible explanation for the differences in discrepancy between the VR valuation method (16%) and the DCF valuation method (24%) can be found in the objectivity and subjectivity of the valuation models. The VR valuation method is mainly based on realized results and to a lesser extent on expected future results. Whereas the DCF valuation method is exclusively based on expected future results. Therefore, the DCF valuation methods require a fair amount of judgment and numerous assumptions have to be made with regard to the value drivers. It seems logical that when more assumptions have to be made with regard to the value drivers, there will be more room for discussion about the appraised business value. The sensitivity of the subjective future oriented approach of the DCF valuation method compared to the more objective VR valuation method is what may cause the difference in discrepancy.

5.1.3 Level of discrepancy and the commissioner of valuation

The analysis result with concern to the commissioner type of the business valuation, show that there is no difference in the level of discrepancy, by whether the valuation is commissioned by the purchasing or selling party in the transaction. A second analysis, with concern to the commissioner

type of the valuation, was to determine whether the appraised business value would be higher (lower) than the transaction value when the commissioner of the valuation is the selling (purchasing) party. Results showed that the probability for the appraised business value to be lower than the transaction value is greater when the valuation is commissioned by the purchasing party. On the contrary, the probability for the appraised business value to be higher than the transaction value is greater when the valuation is commissioned by the selling party. It is important to recognize that these results do not state that the appraised business value would in any case be lower (higher) than the transaction value when the commissioner is the buying (selling) party. It only states that the probability that this will occur differs by the type of commissioner (i.e. buyer vs. seller). A possible explanation for these results can be found by taking the interest of both parties in consideration. In the study of Elnathan et al. (2010) the authors found evidence that when the buyer has commissioned the valuation an extra private company discount has been applied in the valuation, resulting in a lower value. On the contrary, when the commissioner has been the selling party, the authors find evidence that in compliance with the interests of the seller this so called private company premium is disregarded. The authors even found evidence of a seemingly private company premium resulting in a higher value. To a certain extent the results of this research study may contribute to the ideas of authors such as DeAngelo, 1990, Sweeney 1999, Bugeja, 2007 and Elnathan et al. 2009-2010 which state that business appraisers are not entirely impartial and, to a certain extent, comply with the interests of the commissioner(s) of the valuation.

5.1.4 Level of discrepancy and the type of buyer

When turning the focus to the purchasing party, differences in the level of discrepancy between the appraised business value and the transaction value have been found for inside buyers versus outside buyers. The results showed that the level of discrepancy is smaller for transactions to insiders than it is to outsiders. These results match with the results from the study of Elnathan et al. 2009. In their article the authors have found a smaller level of discrepancy between business valuation and transaction value[18] in transaction to insiders. Their study was focused on publicly listed companies. This research study has been focused on business transactions in the private small and medium enterprises (SME) sector. Therefore, it can be stated that in transactions of publicly listed companies as well as privately-held companies the level of discrepancy between business value and transaction value is expected to be smaller for transactions to insiders than outsiders.

 In this research, study a particular group of inside buyers is closer examined, the family related buyers. A clear difference in the level of discrepancy has been found between family related and non

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[18] Transaction value ('market value') of listed shares.

family related buyers. The results showed that the level of discrepancy between business value and transaction value, is smaller for transactions to family related buyers. A possible explanation for these results can be found in the family dynamics of family-held businesses. Other than the financial goals, family-held businesses often pursues non-financial goals which, to a certain extent, can even outweigh these financial goals (Zahra & Sharma, 2004). Continuation of the family business by the next generation is important (Pieper, 2007).

5.1.5 Level of discrepancy and the market trend

With concern to the economic market conditions, the level of discrepancy between business value and transaction value have been studied in relation to the economic market trend. The results have shown that the level of discrepancy is not affected by whether the economy is in a bear or bull market (i.e. downward or upward trend). Therefore, despite the fact that the number of business transactions (i.e. M&A activity) and the level of the transaction values differ by the market trend, the level of discrepancy between business value and transaction value does not seem affected. This is in contrast to what was to be expected. The expectation was that the higher level of competition during a bull market would affect the discrepancy to be larger. To a certain extend the mean values live up to these expectations (see table 4.7). However these differences have not shown to be significant.

5.1.6 Level of discrepancy and the industry sector

This research study has also distinguished different industry sectors and related these to the level of discrepancy between business value and transaction value. The results have shown that the level of discrepancy differs by the industry sector. The highest level of discrepancy between business value and transaction value has been found in the sector of business services and the lowest in the sector of energy and utilities. A possible explanation for these result can be found by differences in capital intensity, synergy possibilities, niche markets and number of potential competitor buyers within the industry sectors. For example, the business services sector is not particularly a capital-intensive sector and relatively easy to create synergy effects. There also are a relatively high number of niches markets. Among others this is why there are a relatively high number of potential competitive buyers. When the number of competitor buyers increases so does the level of competition, which may causes the transaction value to increasingly differ from the business value. On the other-hand, the energy and utilities sector can be qualified as a capital intensive sector in which the level of synergy is limited and there are a relatively low number of niche markets. For these reasons, a fewer amount of competitor buyers can be expected and therefore a limited level of competition. This is

what may causes the level of discrepancy between business value and transaction value to be relatively small.

5.1.7 Level of discrepancy and the business size

Finally, it appears that the business size is not of effect on the level of discrepancy between business value and transaction value. The business transactions that were studied in this research can be categorized in small and medium sized businesses. The business sizes from within the data sample range from 0.1 million to 50 million euro's in turnover. Within the total range, no significant differences in the level of discrepancy between business value and transaction value have been found. Also, between small and medium sized businesses there are no significant differences in the level of discrepancy. From practice a difference would have been expected, based on the fact that there is a decreasing risk perception and more eagerness observable for larger businesses (BDO, 2011). It is possible that differences in the level of discrepancy have not emerged because the size difference were too small. It could be that differences in the level of discrepancy will emerge when the differences in business size are greater (i.e. large size businesses vs. medium and small size business, table 2.2).

5.2 Shortcomings and recommendations for further research

As in any scientific article all the conclusions from this research report should somewhat be tempered by the fact that this article, as any other scientific article, has its shortcomings. The first shortcoming refers to the researched data. The data is limited to transactions between privately-held companies in the Dutch small and medium-sized enterprises market sector. Therefore the conclusions from this study can simply not be accepted for transactions other than these (e.g. transactions of publicly listed companies). Further research may investigate whether the identified effects are consistent for transactions of publicly-listed businesses.

 Secondly, it should be emphasized that all the data is obtained from the data-bases within one source, i.e. BDO Corporate Finance. Even though the data is obtained from separate business appraisers within this department, it could have a disturbing effect on the research results. It therefore can be considered to redo this research on a data set obtained from multiple sources to see whether the results remain consistent.

 Finally it is important to keep in mind that this research study is descriptive and explorative in nature. To goal was to explore and identify factors that could be of effect on the level of discrepancy between business value and transaction value. It has been attempted to provide the reader with possible explanation why these effects occur. However, it would be valuable to do a further

explanatory research on the observed effects from this research study. Further research could also attempt to find other factors that could be of effect on the level of discrepancy between business value and transaction value. This will contribute to a get better understanding of the discrepancy between business value and transaction value.

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Interviews

BDO (2011). Interviews and discussions with several business appraisers within the Corporate Finance department of BDO.

Appendix I: Enterprise DCF-model

<u>Enterprise DCF-model</u>

The enterprise DCF-model discounts the future free cash flows at the weighted average cost of capital (WACC). In the most general case, it can be written as the present value of all expected cash flows to the business (Damodaran, 2006):

$$\text{Value of business} = \sum_{t=1}^{t=\infty} \frac{FCFF_t}{(1 + WACC)^t}$$

Where,

      $FCFF_t$ = Free cash flow to business in year t

      WACC = Weighted average cost of capital

When the business reaches a steady state after n years and after this period starts growing at a stable growth rate g_n, the value of the business can be written as:

$$\text{Value of business} = \sum_{t=1}^{t=n} \frac{FCFF_t}{(1 + WACC)^t} + \frac{\left[FCFF_{n+1} / (WACC - g_n) \right]}{(1 + WACC)^n}$$

The future free cash flows are discounted by the weighted average cost of capital (WACC), as can be seen in the formula described above. In the most general case the weighted average cost of capital is the market-based weighted average costs of the after tax $(1-T_m)$ cost of debt and cost of equity:

$$\text{WACC} = \frac{D}{D+E} K_d (1 - T_m) + \frac{E}{D+E} K_e = \frac{D}{V} K_d (1 - T_m) + \frac{E}{V} K_e$$

Where,

      D = target level of debt using market based values

      E = target level of equity using market based values

      V= target level of debt plus target level of equity using market based values

      K_d = cost of debt

      K_e = cost of equity

      T_m = marginal tax rate