Multiple Valuation For SMEs In The Netherlands: A Case Study On The Brookz Overname Barometer Multiple

Master thesis

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Word count:	18.698

Abstract

Publicly available multiples for valuating SMEs in the Netherlands are widely used among business valuators. Until now, no research has been conducted on how these multiples are created, what their accuracy is, and how they should be used. This paper researches to what extent publicly available multiples in the Netherlands for SMEs can be used. It attempts to create a bridge between the academic literature written on listed companies to SMEs. The research measures the accuracy of the Brookz Overname Barometer (BOB) multiple based on 28 transactions. It additionally provides suggestions on how the accuracy of the BOB multiple can be increased. In the research, a total of six business valuators are interviewed and 119 business valuators took part in an online survey. The results of the research show that important concepts of BOB are undefined. The results of the survey show that the users suppose they know the concepts used in the BOB. However, this is in contrast with the latter answers of the users on definitions used in the BOB. The results show that the users have different interpretations of the concepts. This includes important concepts like which EBITDA should be used and whether the valuation is including an earn-out. This accuracy of the BOB multiple is worse when compared to previous research conducted on the accuracy of listed firms. The paper measures the accuracy of the BOB multiple with four different scenarios for two multiples. When using a one-year EBTIDA the BOB multiple has an accuracy between 18-25%. Whenever a three-year average EBITDA is used, the BOB multiple shows an accuracy between 32-36%. The paper suggests that a three-year average EBITDA should be used. The accuracy of the BOB multiple can be increased if the number of industries is increased, a revenue variable is added, and the free cash flow (FCF) multiple is used. The results show that the BOB multiple should only be used as a sanity check. Although the FCF multiple would increase the accuracy, this paper suggests using the earnings before interest, depreciation, and amortisation (EBITDA) multiple. This is to make use of a different value driver than the discounted cash flow (DCF) method makes use of, and that simplicity is preferred by the users.

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1. Introduction

In the past decade, the number of merger and acquisition (M&A) deals in the Netherlands and small and medium-sized enterprises (SMEs) sector has increased. For these M&A transactions, accurate valuations of the companies are necessary. Five main valuation methods are used to valuate a company (Damodaran, 2006; Fernández, 2002a). These methods are discounted cash flow (DCF) valuations, liquidations and accounting valuations, contingent claim valuations, goodwill-based valuations, and relative or multiple valuations. Out of these methods, the DCF and multiple valuations are most used for SMEs in the United Kingdom (Imam et al., 2008). A survey conducted under 365 finance practitioners in several European countries also argues that these valuations are the most used in general (Bancel & Mittoo, 2014). The DCF, and variations of the DCF valuation, are conceptionally correct (Fernández, 2002a). These cash flow discounting valuations also have the best theoretical credentials. Despite all of this, finance practitioners are more commonly using multiple valuations. However, it is still uncertain which multiplier (or multiple) is the most accurate (Bancel & Mittoo, 2014).

Most research on the accuracy of multiple valuations has been conducted on listed firms. There are several reasons why the multiples generated from listed firms cannot be used for SMEs. One of those reasons is the lack of high-quality data. Several companies have created multiples specifically for SMEs in the Netherlands to solve this problem, e.g., the BOB multiple,[1] the Marktlink multiple,[2] or the Finanza multiple.[3] All three multiples make use of the enterprise value (EV) divided by the earnings before interest, taxes, depreciation, and amortization (EBITDA) multiple. Multiples differ between listed companies and SMEs, but there are also cross-border differences. For example, the EBITDA multiple for listed companies in Western Europe at the start of 2022 was 11.81. Whereas the average EBITDA multiple in 2021 for SMEs of the United Kingdom and Ireland (UK&I) was 5.45, in France 5.40, in Germany, Austria and Switzerland (DACH) 5.85, and the Netherlands 4.85. Across industries, these differences are also observed. Where the highest industry EBITDA multiple comes from listed firms the Information Services with 44.61 and the lowest from the Steel industry with 3.12. The IT service & software development industry has an EBITDA multiple of 6.5 in the Netherlands. Whereas this multiple is 8.4 in DACH, 8.2 in UK&I, and 7.5 in France.[4][5] These cross-border and industry differences indicate the necessity for specific multiples for each country and industry. To the researcher's knowledge, no research has been conducted on the accuracy of the multiples provided. This research

[1] https://www.brookz.nl/barometer
[2] https://www.marktlink.com/nl/multiple/
[3] https://www.aeternuscompany.nl/kennis/waarde-prijs-en-het-gebruik-van-multiples/
[4] Brookz Overname Barometer 2021-H2
[5] https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datacurrent.html#multiples

will research, how the multiples can be used, the accuracy of a publicly available multiple and how these multiples can be improved.

This research is conducted at KroeseWevers, which specializes in the Dutch SME market. Therefore, this research will focus on the SME market in the Netherlands. Additionally, the BOB multiple is, according to KroeseWevers, the best-known multiple for the SME market in the Netherlands. This research will therefore focus on this specific multiple. It is unclear whether the BOB multiple is accurate for SMEs in the Netherlands. Therefore, the following research question has been formulated: *"To what extent can the Brookz Overname Barometer multiple be used for valuating SMEs in the Netherlands?"*

To answer the research question there should be clarified how Brookz creates those multiples. Therefore, a clear picture of the establishment of the BOB multiple should be made. For this, sub-question one is formulated: "*How and under which presumptions are the multiples from the Brookz Overname Barometer created?"*

The BOB multiple should only be used for the SME market in the Netherlands if the multiple is representative of the SME market. Therefore, the accuracy of the BOB multiple should be researched. For this, the second sub-question is formulated: *"What is the accuracy of the Brookz Overname Barometer multiple?"*

This research hypothesis is that the BOB multiple is not accurate for the SME market in the Netherlands. To increase the accuracy, adjustments to the multiple could be made. As mentioned, most literature on the accuracy of multiple valuations is written for listed firms. Some adjustments could therefore work for listed firms, but not for SMEs in the Netherlands. The final sub-question will research what adjustment theoretical will work for SMEs in the Netherlands. Sub-question 3 is formulated as followed: *"What adjustments would increase the accuracy of the Brookz Overname Barometer multiple?"*

This research aims to produce recommendations about the BOB for KroeseWevers. KroeseWevers is an accounting and advisory firm, which operates in the North and East of the Netherlands. Most of KroeseWevers' clients can be specified as SMEs. The Corporate Finance branch of KroeseWevers advises company owners during valuations, buying-, and selling procedures. KroeseWevers uses the BOB multiple as a cross-check. However, KroeseWevers is uncertain whether the BOB multiple is accurate enough to be used during these processes. KroeseWevers has therefore given the assignment to research the BOB and give recommendations regarding the use of the BOB multiple. The BOB is widely used among valuators to valuate SMEs in the Netherlands. Therefore, the results of this research can be used among the valuators in the Netherlands. Additionally, this research aims to stimulate valuators in the Netherlands to think critically about publicly available multiples for SMEs.

The relevance of this research will be elaborated in chapter 2. In chapter 3 the academic literature related to this research will be illustrated. In chapter 4 the methodology of the research is explained. Chapter 5 will elaborate on the results of the research, whereas in chapter 6 the conclusion and discussion can be found.

2. Relevance

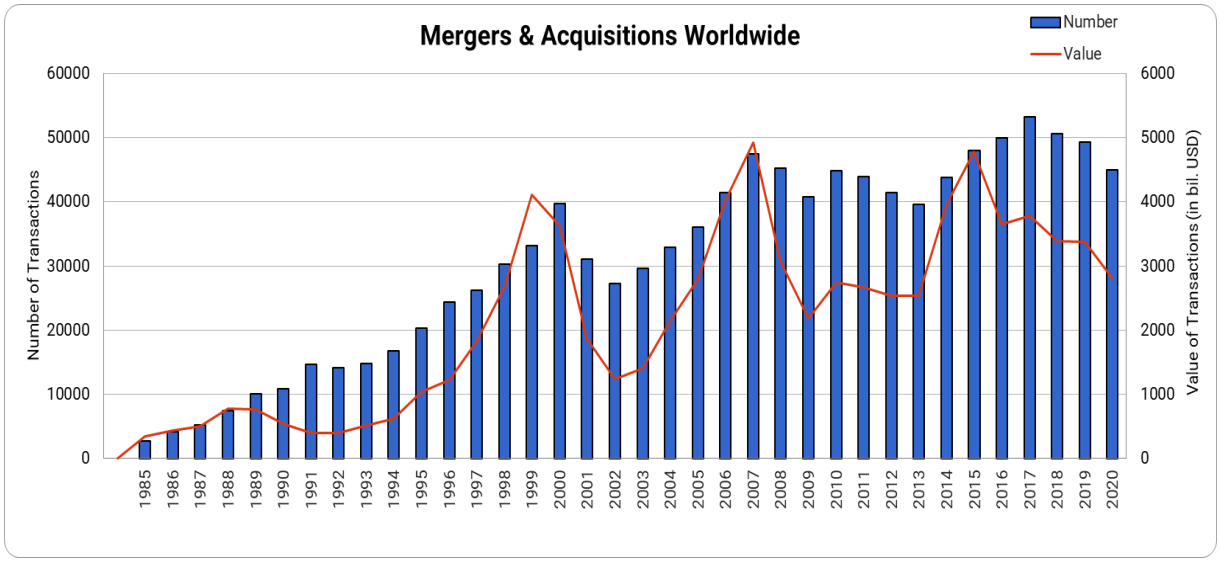
In this chapter, the relevance of this research will be elaborated. In the first paragraph, the need for valuation models is explained. In the second paragraph, the relevance of valuations models for SMEs will be elaborated, specifically for the Netherlands. In the third paragraph, the relevance of researching the multiple will be explained. In the fourth paragraph, the academical and practical relevance will be elaborated.

2.1 The necessity of valuation models

In the last centuries, the number and value of M&A transactions worldwide have shown an upward trend (Figure 1). In Figure 1 can also be seen that there are M&A waves, e.g., around 1999 (before the dot com bubble), 2007 (before the subprime mortgage crisis), and 2015. In 2020 there can be seen a decrease in M&A transactions. According to Deloitte, the number of transactions increased in 2021 by 25%, whereas the total transaction value increased by 62%.[6] The increasing number and value of M&A transactions display the importance of accurate valuation models.

Figure 1

Mergers & Acquisitions worldwide



Note: Source: IMAA-institute

2.2 Necessity for valuation models for SMEs in the Netherlands

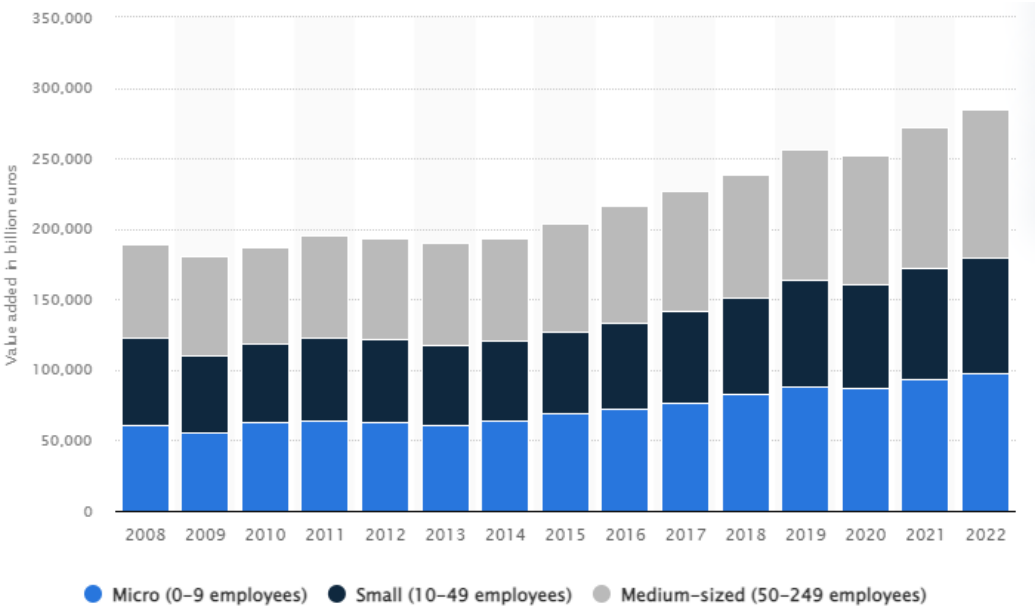
This research focuses on the valuation of SMEs in the Netherlands. There are more than 1.25 million SMEs in the Netherlands in 2021. This is 99.9% of the total number of enterprises in the

[6] https://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/gx-charting-new-horizons-ma-strategies.pdf

Netherlands.[7] The SMEs in the Netherlands provide jobs to more than 3.86 million persons, which is 64.5% of the total amount of the Netherlands. The SMEs in the Netherlands have an added value of €272 billion, which is 61.4% of the total added value of the Netherlands.[8] The total amount of value added has increased in the last decade, as seen in Figure 2.

Figure 2

Value added in billion euros by SMEs in the Netherlands



There are three types of SMEs: micro, small, and medium-sized. The main factors determining whether an enterprise is an SME are the staff headcounts and the turnover or balance sheet total. An SME can have a maximum of 250 employees. Besides that, its turnover cannot exceed fifty million euros, or the balance sheet total cannot exceed 43 million euros (European Commission, 2016). An overview can be seen in Table 1. The European definition of an SME is in line with the Dutch government.[9]

[7] https://www-statista-com/statistics/818704/number-of-smes-in-the-netherlands/
[8] https://www-statista-com/statistics/1140466/share-of-smes-in-value-added-in-the-netherlands/
[9] https://www.rvo.nl/subsidies-financiering/tvl/mkb-grote-onderneming

Table 1

The factors that determine the type of SME for an enterprise

Company category	Staff headcount	Turnover	or	Balance sheet total
Medium-sized	< 250	≤ € 50 m		≤ € 43 m
Small	< 50	≤ € 10 m		≤ € 10 m
Micro	< 10	≤ € 2 m		≤ € 2 m

In 2007 there were a total of 2.500 M&A transactions in the SME sector. By 2021, the number of transactions has almost tripled to 7.235.[10] These numbers display the importance of accurate valuations of SMEs in the Netherlands. Most research is focused on SMEs in general. The academic literature on valuating SMEs in the Netherlands is not existing or is limited.

2.3 Researching into the multiples for SMEs

In the academic literature, the DCF method has gotten more attention, which results in more theoretical credentials when compared to multiple valuation (Damodaran, 2006). However, multiple valuation is the most used valuation method by experts in Europe (Bancel & Mittoo, 2014; Demirakos et al., 2004). According to Bancel & Mittoo (2014), one-third of the experts do not know what the assumptions made by the multiple valuation are. Additionally, there is, no academic literature which describes when to use a certain multiple. Most research on multiple valuation has been done for companies that are listed (Elnathan et al., 2010). However, experts do apply the literature that is written over multiple valuation on listed companies on unlisted companies. Unlisted companies exist out of SMEs and large companies who are not listed. As mentioned in the introduction, this transition from listed to SMEs should be carefully made because of the differences. The relevance of multiples in multiple valuation for SMEs has therefore been established.

2.4 Academic and practical relevance

This will be the first study that will research the accuracy of a publicly available SME multiple in the Netherlands. This will be done with quantitative and qualitative research methods. This study will therefore give the first insights into what extent these multiples can be used and what accuracy they provide. This study attempts to fill the gap between the literature written on the accuracy of listed firms to SMEs. While using qualitative research methods, this paper will research if the variables that result in a high accuracy at listed firms, also result in high accuracy for SMEs.

[10] https://mkbstatline-cbs-nl.ezproxy2.utwente.nl/#/MKB/nl/dataset/48024NED/table?dl=655BF

Apart from the academic relevance of this research, the outcomes of this research will be used in practice. The main goal is to give KroeseWevers advice on the BOB multiple and to what extent this multiple should be used. Besides that, it gives practitioners inside into how SMEs in the Netherlands can be valuated. The results of this research might change the valuator's procedure and perspective on valuating SMEs.

3. Theoretical framework

In this chapter, the theoretical framework will be elaborated, which consists of theories that are relevant to the research problem. In the first paragraph, the most used valuation method are described. This is followed by the valuation method which this research focuses on in the second paragraph. In paragraphs three to five the relevant literature are elaborated of the three steps of multiple valuation. The sixth paragraph elaborates on what research has been conducted on what mean should be used. This chapter ends with a conclusion and summary of the academical literature.

3.1 Commonly used valuation method

The liquidations and accounting valuation valuates the company by estimating the value of the company's assets (Damodaran, 2006; Fernández, 2002a). Which is, according to Damodaran, (2006), technically correct. However, there is a key difference between the value of a company and the value of its assets. A company is an ongoing entity with assets that it already owns and assets it expects to invest (Damodaran, 2006). This valuation method does not consider the money's temporary value or the company's future development. It also ignores several other factors like the industry's current situation, organizational problems, long-term contracts, or other problems that do not come forward in the accounting statements (Fernández, 2002a).

Goodwill is the value that a company has above its book value or the adjusted book value. It seeks to valuate the company's intangible assets, which do not appear on the accounting statements. The problem with this method is when they want to determine the value of the goodwill. There is no consensus regarding the methodology of how goodwill is calculated. However, some methods value goodwill with various procedures (Fernández, 2002a).

The contingent claim valuation makes use of options pricing models to measure the value of assets that share option characteristics (Damodaran, 2006). Option pricing models are theories that can calculate the value of an option contract based on the number of variables within the actual contract.

The DCF valuation values a company by discounting the future cash flows to the present value. It determines the discount rate based on the risk of the company. If the company has a higher risk, the discount risk will also be higher. This will result in a lower valuation. In the DCF model, finding a suitable discount rate is necessary for each type of cash flow (Fernández, 2002a).

3.2 Multiple valuation

In multiple valuation, the company is valuated based on how similar assets in the market are priced. For this method, three steps need to be taken. The first step finding comparable firms that are

valuated by the market. This step is exceedingly difficult for SMEs due to the lack of publicly available data. The second step is scaling the market price to a common variable. Examples of common variables are earnings, cash flows, sales, or book value related. This creates a standard price that can be compared. The third and last step is to adjust to make it comparable to the standardized values. If there are differences that make a company more valuable can be adjusted in this step. An adjustment can be made if a company has a higher growth opportunity. This company should trade with a higher multiple compared to companies in the same industry that have a lower growth opportunity. A financial analyst can therefore produce arguments why a company should have a higher multiple (Damodaran, 2006).

The DCF method and multiple valuation are the most used valuation methods among valuators (Bancel & Mittoo, 2014; Demirakos et al., 2004; Imam et al., 2008). However, there are some philosophical differences between those methods. With the DCF method, the intrinsic value of the company is calculated based on generated future cash flows. With multiple valuation, a valuation is made based on similar companies in the same industries by taking what the market is paying for it. Damodaran (2006) argues that when the market is valuating the other companies correctly, the DCF and multiple valuation can converge. However, if the market is systematically under-pricing or overpricing a group of companies or sectors, the DCF and multiple valuation can deviate. The multiple valuation is therefore highly dependent on how the market is currently performing (Damodaran, 2006).

The multiple valuation can still be preferred over the DCF valuation because it is faster and fewer assumptions need to be made. In addition, the multiple valuation is easier to understand and can be easier explained to non-valuators, e.g., company owners. Finally, the multiple valuation reflects the current position the market is in. The multiple valuation however also has its weaknesses. If the market is in a position where it is overpriced, the multiple valuation will also overprice the company overpriced. In addition, it might be hard to find a group of comparable companies. This could result in inconsistent estimates where key variables such as growth, cash flows, or risk are potentially ignored. Finally, the lack of transparency regarding the underlying assumptions in the valuation can make it vulnerable to manipulation. A valuator who could choose the multiple on its own can influence the price (Damodaran, 2001). The simplicity of multiple valuation in combination with publicly available multiples can result in inaccurate valuations. Company owners are familiar with the publicly available multiples and often make their own valuation. However, they are not fully aware of how multiple valuation works. Which often results in stakeholders under- or overestimating the value of the company.

3.3 Determination of comparable firms

This paragraph starts with defining four concepts that are commonly used in academic literature and commonly misused or misinterpreted in practice. After this, the academic literature written on the first step in multiple valuation will be elaborated.

Throughout the academic literature, many concepts are used that are almost similar to each other. For clarification purposes, the concepts of EV, equity value, price, and value will be defined. The EV measures the true value of a company. The EV is often referred as to the takeover value. This is the amount of money required for an acquirer to buy a company, at its current market price. This also includes cash, debt, unfunded pension liabilities, and minority interests of the company.[11] The equity value consists of the company's outstanding shares and the loans that shareholders have made available to the company.[12] The price is the market value that is being paid for the company. The value of a company differs for parties through their perspective. E.g., a valuator could value a company higher because it can be the perfect fit for their expanding business. Whereas another company does not see a future in the business model. As quoted by Warren Buffet (2009): "Price is what you pay; value is what you get."

The first step in multiple valuation is selecting comparable firms. Selecting the right comparable firms is critical for the accuracy of the valuation. The academic literature has authored several papers on selecting comparable firms, which can be summarized into three different methods. The first method is finding comparable firms based on the industry. When selecting comparable firms based on the industry, and the Price-Earnings (P/E) multiple is used, the accuracy increases slightly. The industry is defined by the first three Standard Industrial Classification (SIC) digits (Alford, 1992). Using three SIC digits has comparable results to using four digits. Three SIC digits outperform one and two digits significantly (Cheng, 2000). The P/E valuation method is the most accurate when the comparable firms are selected based on the industry, or pairs of book return on equity (ROE), total assets (TA), and industry. The research elaborates that the ROE and TA explain cross-sectional differences in P/E multiples (Alford, 1992). According to Cheng (2000), the P/E and Price to Book (P/B) multiples are more accurate when comparable firms are selected based on the industry in combination with similar ROE. They also argue that when the firm's value is unknown, the most accurate valuation approach is selecting comparable firms based on the industry and using the combined P/E-P/B method. More recently, Bhojraj et al. (2003) found that the Global Industry Classification Standard (GICS) can be better used in multiple valuation than the SIC code.

[11] https://www.investopedia.com/terms/e/enterprisevalue.asp
[12] https://www.investopedia.com/ask/answers/111414/what-difference-between-enterprise-value-and-equity-value.asp

The second method is finding comparable firms based on their fundamentals. According to Bhojraj & Lee (2002) the fundamentals of profitability, growth, and risk characteristics are comparative parameters for selecting comparable firms. Selecting comparable firms based on these fundamentals outperform other methods that are frequently used in practice, e.g., comparable firms based on industry. In the academic literature, there are also critics of selecting comparable firms based on the industry. Both Damodaran (2002) and Koller et al. (2015) argue in their books that comparable firms should be selected based on risk, growth potential, and profitability. Starting with comparable firms is a good start. However, selecting firms based on their performance will result in more accurate valuations.

The third method is finding comparable firms based on traffic on the internet. Ho et al. (2012) created a method to find comparable firms. In their method, they make use of Data Envelopment Analysis (DEA), which is a linear program to measure relative efficiencies among companies in an industry. The input for this DEA is input and output variables. With input variables are the total assets and operating expenses meant. With output are the reach, page views, gross margins, and accumulative cash flows meant. With this method, an average accuracy rate of 70% is obtained. The limitation is that this method makes use of publicly available data, which in most cases is not possible for SMEs. More recently, a new methodology has been created to identify comparable firms. This method relies on the data available on the Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system. In EDGAR analysts can find public companies' financial information based on the information the companies deliver to the Securities and Exchange Commission (SEC). When firms are frequently co-searched by multiple users (Search Based Peers or SBPs), they explain a proportion of the cross-sectional variation in the base firm's monthly returns, valuations multiple, financial ratios, and other fundamental characteristics (Lee et al., 2015).

In the academic literature, most research papers use all comparable firms in an industry. However, experts in the field usually use only a few comparable firms. When the comparable firms are selected based on the growth rate, ten firms are as accurate on average as using the entire industry. It is slightly less accurate to use five comparable firms. It is better to use a smaller number of comparable firms when the industry and growth rate are near the firm that is being valued. Adding more comparable firms will on average lead to noise, which results in less accurate valuations (Cooper & Cordeiro, 2008). Finding the right comparable firms should not take too much time. This would defeat the purpose of using multiple valuation (Soffer & Soffer, 2003).

A flaw in multiple valuation is that a particular company's multiple is compared with the average multiple of other companies in the same industry, regardless of their performance (Koller et al., 2015). Therefore, variables should be added to increase the accuracy of multiple valuation.

According to Koller et al. (2015), these variables should be financial performance related. This can be the growth in sales or EBITDA margin.

3.4 Multiples and standardized values

The second step in multiple valuation is scaling the market price to a common variable, also referred to as multiples or multipliers. This paragraph starts with what the academic has written about the distinctive characteristics of multiples. This is followed by researchers who have conducted empirical research into the multiples. In the last part, the most used multiples in practice are elaborated. This gives a complete overview of what the academic literature has written and what happens in the practice.

To compare the values of companies that are similar in the market, the values need to be standardized by scaling them into a common variable. The standardized values can be relative to the earnings a company generates, to the book value, the revenue or to measures that are specific to the companies' sector (Damodaran, 2006). According to Fernández (2002b), the multiples can be divided into three groups. The first group are multiples that are based on the company's capitalization. Examples are the P/E Ratio, Price to Cash earnings, Price to sales (P/S), and P/B value. The second group are multiples that are based on the company's value. Examples are the EV to EBTIDA, EV to Sales, and EV to unlevered Free Cash Flow (FCF). The third and final group are growth-referenced multiples. Examples are the P/E ratio, earnings per share growth or the EV to EBTIDA growth.

Damodaran (2009) argues that there are four categories of multiples. The first category is the earnings multiple. This multiple argues that the value of a company is a multiple of the earnings the company generates. The most common earnings multiples are the EBTIDA or the earnings before interest and tax (EBIT), also known as the operating income. The second category is the book value or the replacement value multiples. This multiple takes the price that is paid for the company divided by the book value of all assets or capital. However, this P/B value can differ widely across industries. The third category is the revenue multiple. For valuating a company, the enterprise value is divided by the sales. This method is less affected by accounting choices (like depreciation). The benefit of this method is that it is easier to compare firms across the markets with different accounting systems at work. However, this ratio can differ across sectors, mostly because of profit margins. The final category is the sector-specific multiple. This multiple, as the name indicates, is specific to each industry. The reason for this is that there are differences between industries. This can result in inaccurate valuation. An example are internet companies that appeared in the 1990s. They had negligible revenues and book value, and negative earnings. Therefore, analyst used the number of hits the company's web page generated. The use of these multiples can be dangerous since it cannot be used for the entire market.

This can lead to under- or overvaluation of a certain sector, relative to the entire market. Besides that, relating sector-specific multiples to the fundamentals of the company is difficult.

In the academic literature, research is conducted on the accuracy of the multiples. The next step is scaling the market price to a common variable, also referred to as the multiple. According to (Kim & Ritter, 1999) the most accurate multiple, for valuating IPOs, are the P/E, market-to-book, and P/S multiples. The multiples using forward earnings results are more accurate than multiples using trailing earnings. This result is in line with the results of other research papers (Lie & Lie, 2002; Liu et al., 2002, 2007; Schreiner, 2007). In the research of Liu et al. (2002) in fifty per cent of their sample the error was within fifteen per cent of the stock when the forward earnings multiple was used. Multiples that are based on asset value create less biased and more precise estimations of value, compared to sales and earnings multiples (Lie & Lie, 2002). However, Ho et al. (2012) argue that the P/E multiple cannot be used for each industry. They give the example that internet-related stocks in the late nineties and early 00s still have negative earnings. This will result in inaccurate valuations. They argue that in those cases a P/S multiple increases the accuracy of the valuation, which is in line with other academic papers, e.g., Demers & Lev (2001). The EBITDA multiple generates better results compared to the EBIT multiple, except for the pharmaceutical industry (Lie & Lie, 2002). The empirical research of Schreiner (2007) reports that equity value multiples perform better than entity value multiples. Schreiner also reports that in science-based industries, knowledge-based multiples outperform traditional multiples.

When non-financial firms are valuated and comparable firms are selected based on their industry, the price/cash flow (P/CF) is the most accurate. The results of the research also show that the P/S performs statistically worse than other methods. When comparable firms based on the Return on Equity (ROE) are selected, the most accurate multiple are the P/E and the P/B. Again, the P/S show worse results (Mînjina, 2009).

In practice, the P/E multiple is most used under valuators. Approximately 88% of the valuators make use of some sort of P/E multiple. Out of these valuators, 61.1% makes use of forecasted net incomes and 20.1% forecasted operating incomes. A smaller portion, 13.3%, makes use of some sort of trailing income (Pinto et al., 2015). According to Koller et al. (2015), the denominator should always make use of forecasted earnings instead of historical earnings. There are two explanations for this. The first one is that the present value of the future cash flow is equal to the company's value, and not sunk cost. The second argument is that forward-looking earnings are, in general, normalized. This results in a more realistic long-term cash flow and avoids one-time past increases (or decreases) in earnings. The second most used numerator is the EV, which approximately 77% of the valuators make use of. The most used denominator in the EV multiple is the EBITDA with 88.3% of the users. In 19.3% of the time the EBIT denominator is used. The FCF and revenue denominator are used at 21.2% and 16.6%, respectively. More commonly used multiples are the P/B multiple (59%), the P/CF multiple (57%), the

P/S multiple (40%), the price to dividend yield (P/D) multiple (36%), and other ratios (12%) (Pinto et al., 2015).

3.5 Adjustments to the multiple

The last step in multiple valuation is adjusting the multiple to make it comparable to the standardized values. Topics that are elaborated on are the illiquidity discount, the size of a company, and the control premium.

Shares that are from listed companies can be so converted into cash in a brief period. However, selling the shares of SMEs is more difficult. Because of this, the valuation of SMEs should be adjusted. This is called an illiquidity discount. However, when talking about this discount, the empirical question arises of how much the discount should be. According to Emory, Dengel & Emory (2002), the illiquidity discount is 46%. They calculated the discount by taking the difference between the stock price before and after an IPO. However, Officer (2007) research has shown that the average illiquidity discount is between the 15% to 30%. Officer applied the differences between listed and privately held firms. There is no clear line in the academic literature regarding what the illiquidity discount should be.

Listed and larger companies are obligated to disclose certain information. In general, larger companies are often characterized by a higher information environment when compared with smaller companies. This makes valuating smaller firms more challenging. Furthermore, smaller companies often suffer from a lack of management depth, narrow product offerings, and inadequate internal controls and reporting systems (Plenborg & Pimentel, 2016). Smaller companies often have earnings which are related to a small number of projects, whereas larger companies have more sources of income. This decreases the dependency on larger companies (Lie & Lie, 2002). The size of a company is correlated to the risk it has (Fama & French, 1992). Again, the smaller the company, the higher the risk. Research has shown that the firm size has a positive effect on the accuracy of the multiple valuation (Alford, 1992; Kim & Ritter, 1999; Lie & Lie, 2002). Therefore, using the multiples on medium-sized SMEs would benefit the accuracy compared to using the multiple on small and micro-SMEs.

When shareholders have a minority interest in the company, their shares are less of value compared to a majority shareholder. A majority shareholder can affect the overall business structure and influence business politics, whereas a minority shareholder cannot. Share prices of listed companies represent the value with the minority discount included, due to the lack of control. Stock prices of listed firms already reflect the price with a minority discount (Plenborg & Pimentel, 2016). When investors acquire enough stock to get control over the company, they pay a control premium. Control premium can be defined as “the value of the control can be explained to a large degree by the private benefits extractable by the party exercising control” (Massari et al., 2006). The control

premium is the difference between the optimal value and the status quo value. The amount of premium depends on several factors, e.g., how companies are managed. The premium should be smaller for well-managed companies and larger for poorly managed companies (Damodaran, 2005). Control premiums will therefore differ across companies, but also between countries. This means that there is no practical method to calculate the control premium. According to Petersen et al. (2006), the average control premium in Denmark is close to 30%. In the United States between 1973 and 2002, the average control premium was 45%. There are however variations in the control premium (Betton et al., 2009).

For this research, the illiquidity adjustment is considered as not relevant. This is because the multiple is created based on transactions of SMEs, which already takes the illiquidity discount into account.

3.6 Mean to use

Multiple valuation requires that the average multiples of comparable firms be calculated. However, in the academic literature, there is the discussion about whether the simple mean, the median, the value-weighted mean, or the harmonic mean should be used. According to Baker & Ruback (1999), the best option is the harmonic mean. They argue that the harmonic mean is mathematically always less than the simple mean. The results of their research imply that making use of the simple mean industry multiple will overestimate the value. Plenborg & Pimentel (2016) summarized the literature written over the mean in multiple valuation. Concluded is that the simple mean value should not be used. The simple mean suffers from the impact of extreme observation. Both the harmonic mean, and the median avoid the impact of the extreme values. However, the empirical evidence is inconclusive whether the median or the harmonic mean should be used when calculating averages for multiple valuation.

3.7 Conclusion

The theoretical framework provides insight into various valuation methods. This is followed by an explanation of how multiple valuation works. The theoretical framework elaborates for each step on what the academic literature has written over these steps. The focus of the paper is on the accuracy of these variables. The literature is written for multiple valuation for listed firms and not for SMEs. This paper will use the variables that get high accuracy on listed firms. These variables then are checked whether they can be used for SMEs via interviews. The variables that have a chance that they result in a high accuracy will be used for the survey. Variables that do not will be excluded. The survey will research with a large sample whether these variables will result in more accurate valuations. The

variables and their corresponding source(s) can be found in Table 2. Figure 3 shows a schematic overview of the information flow and how it leads to interview and survey questions.

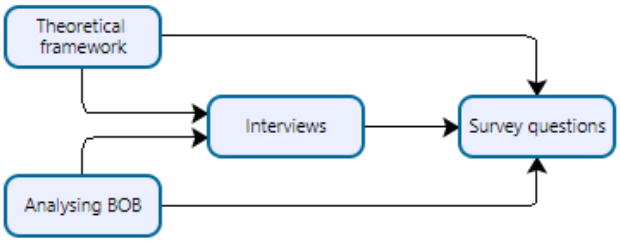
Table 2

Variables increasing the accuracy of multiple valuation

Variable	Source
Industries	Alford (1992), Cheng (2000)
Revenue	Damodaran (2006)
Sales growth	Koller et al. (2015)
ROE	Alford (1992), Cheng (2000), Mînjina (2009)
EBITDA margin	Koller et al. (2015)
Firm size TA	Alford (1992)
Firm size TA and ROE	Alford (1992)
EBITDA	Fernández (2002b), Damodaran (2009), Lie & Lie (2002)
(forecasted) P/E	Alford (1992), Cheng (2000), Fernández (2002b), Kim & Ritter (1999), Lie & Lie (2002), Liu et al. (2002 & 2007), Schreiner (2007), Mînjina (2009)
P/B	Cheng (2000), Fernández (2002b), Damodaran (2009), Kim & Ritter (1999), Mînjina (2009)
P/(F)CF	Fernández (2002b), Mînjina (2009)
Company size	Plenborg & Pimentel (2016), Lie & Lie (2002) Alford (1992), Kim & Ritter (1999)
Control premium	Plenborg & Pimentel (2016), Petersen et al. (2006), Betton et al. (2009)

Figure *3*

Schematic overview of the information flow



4. Research design

This chapter elaborates on the research methodology. This includes the research method, the objective of the research, the types of research used, methods of collecting data, and how the data will be analysed.

4.1 Research method

The objective of this research is to research to what extent the BOB multiple can be used for valuating SMEs in the Netherlands. In addition, adjustments to improve the accuracy of the BOB multiple will be mentioned. To achieve this goal, both qualitative and quantitative research methods are used. Qualitative research is defined by (Levitt et al., 2018) as "A set of approaches that analyse data in the form of natural language and expressions of experiences." In this research, the qualitative research includes interviews with business valuators. Quantitative research is defined by Taguchi (2018) as the "employment of objective measures (e.g., tests, surveys) and uses statistical and numerical data analysis techniques." In quantitative research, there are two methods of analysing the data. These methods are inferential statistics and descriptive statistics (Loewen & Plonsky, 2015). Quantitative research results are shown in graphs and numbers. The higher the number of participants, the higher the reliability. Generally speaking, a sample size of thirty is required in quantitative research. The goal is to get one hundred responses to increase the reliability of the research. In this research, the quantitative part exists out of a comparison and an online survey. The benefit of combining qualitative and quantitative research is that the outcomes of the qualitative research can be directly assessed in the quantitative research part.

4.2 Qualitative research

The qualitative part of this research exists out of interviews. A total of six business valuators were interviewed. An overview of (anonymized) information on the interviewees can be found in Table 3. The interviewees were approached through phone, email, and LinkedIn. While approaching these interviewees, there is considered to interview business valuators of several different companies. This was done to prevent any biases that might be within a company. The interviews were conducted in person, via Microsoft Teams or by phone between 3-11-2022 and 18-11-2022. All interviews were recorded, for research purposes only, with the permission of the interviewees. The outcomes of the interviews are used to formulate the survey questions.

Table 3

Interview sample

Interviewee	Company	Years of experience	Highest eduction	Additional eduction
1	A	10	Master	Register Valuator
2	A	15	Master	Register Valuator, Register Adviseur Bedrijfsopvolging
3	B	11	Doctor	-
4	C	23	Master	-
5	D	20	Master	Register Valuator
6	E	14	Master	Register Valuator

To get a thorough understanding of the problem, all the BOB editions are analysed. This has resulted in many questions regarding the methodology of the BOB. Therefore, questions regarding the BOB methodology were asked to two employees of Brookz, including the CEO. Multiple emails and reminder emails were sent with questions regarding the methodology of the BOB. These questions can be found in Appendix 2. Unfortunately, the employees of Brookz were unable to respond to these questions. To guarantee the continuity of this research, some assumptions about the methodology needed to be made.

For the interviews, two goals were set. The first goal was to find (additional) biases and find inconsistencies in the methodology of the BOB multiple. The second goal was to cross-check the in literature found improvements. Additionally, the interviewees were asked if they had improvements that would increase the accuracy of the BOB multiple. The interview questions were first discussed with the supervisor of KroeseWevers to make sure the questions were clear and complete. Small adjustments were made to the interview questions. An overview of the interview questions can be found in Appendix 1.

During the interviews, a brief introduction round was held, and the purpose of the interview was enlightened. At the end of the introduction round, the interviewee was told that the data gathered during the interview will be anonymized. This is to prevent the interviewee to give more socially acceptable answers, which can influence the data. After this, the questions (questions 3 to 11) regarding the first goal are asked. Through follow-up questions, the interviewees were able to give clear answers. Often a conversation about the topic occurred, which gave a clear picture of the interviewee's perspective. The second goal of the interview is to cross-check the improvements. Additionally, the practicality of the improvements is checked. The questions regarding the second goal are questions 12 to 33. Variables discussed regarding finding comparable companies are the industry, revenue, growth in sales, ROE, EBITDA margin, and TA. Multiples that are discussed during the interview are the EBITDA, forward P/E, P/B, and P/CF. Topics discussed regarding the adjustments made to the valuation are the company size and the control premium. At the end of all sections, the

interviewees are asked if there is an improvement missing. A transcript of the interviews is available on request.

4.3 Quantitative research

The quantitative part of this research exists out of two parts. The first part is statistically analysing the accuracy of the BOB multiple. The data of the BOB will be received from editions 2015 edition 1 to 2022 edition 1. The BOB has two editions each year. The second edition of BOB 2022 has not been published at the time of conducting this research. This means a total of thirteen data points can be retrieved from the BOB. The data from the actual market multiple will be provided by KroeseWevers. Because it is not possible to retrieve the EV of the companies, there is chosen to take the price that is paid for the company. The price exists out of the purchase price, vendor loan and earn-out. The actual market multiple will be calculated by diving the price by the last known EBITDA (EBITDA 0). Further in this research as Multiple 1. It is assumed that the BOB multiple suggests making use of the last known EBITDA. Therefore, the accuracy of the BOB multiple will be measured by Multiple 1. However, in practice, it is common that the last known EBITDA is not representative for the company. To prevent this from getting unusual multiples, a second multiple will be calculated. This second multiple makes use of a three-year EBITDA average and is referred to as Multiple 2. The formulas for the two multiples are therefore the following:

$$Multiple\ 1 = \frac{Price}{EBITDA\ 0}$$

$$Multiple\ 2 = \frac{Price}{(EBITDA\ 0\ +\ EBITDA\ 1 + EBITDA\ 2)/3}$$

A transaction database is created for the period between January 2020 to June 2022. This means a total of five periods can be analysed. One period is half a year, in line with the BOB editions. KroeseWevers has approximately twenty transactions annually, ten each period, distributed over multiple industries. There is not enough data available for each industry to statistically analyse the accuracy of the multiple. Therefore, the research will focus on the average multiple for SMEs in the Netherlands. In addition, some transactions will be excluded from the data set. There are two main reasons for this. The first reason is that the price is too dependent on the earn-out that it cannot be forecasted. This will result in a multiple that will influence the result too much. The second reason for excluding certain transactions is that not all necessary data is available. E.g., the necessary EBITDA information was missing. The literature prefers the median and harmonic mean above the simple mean. However, this research assumes that the BOB multiple makes use of the simple mean. This research will therefore make use of the simple mean.

In line with Harbula (2009) and (Gupta, 2018) accuracy (or the percentage error) is measured by taking the actual multiple (AM) minus the predicted multiple (PM) (=BOB multiple), divided by the AM. The formula is therefore as followed:

$$Accuracy = \frac{AM-PM}{AM}$$

In line with Lie & Lie (2002) and Harbula (2009), the fraction of the multiples that are within 15% and 25% will be researched to measure the accuracy. This will first be done with the (A) whole dataset. Because of the small data set, outliers can have a significant impact. To prevent that the mathematical outliers will have a negative impact on the accuracy, (B) the outliers will be removed in the second scenario. Mathematical outliers are negative multiples, due to a negative EBITDA, or unrealistic high multiples, due to a not representative low EBTIDA. The dataset exists out of transactions where not all shares are transferred at once, e.g., a transaction where only one per cent of the shares is transferred. The third (C) scenario will analyse the accuracy of transactions where only 100% of the shares are transferred. The dataset exists out of transactions which include earn-outs. These earn-outs are difficult to predict due to the lack of data. The fourth (D) scenario will analyse the accuracy of all transactions that do not have an earn-out. The data will be analysed with the programme IBM SPSS Statistics 28. With this, sub-question 2 can be answered.

The second quantitative part of this research exists out of an online survey. This survey was conducted between 30 November 2022 and 13 December 2022**.** The survey was distributed via email among business valuators that are registered at Brookz or the Nederlands Instituut voor Register Valuators (NiRV). The mail addresses of the business valuators that are registered at Brookz were retrieved from the website of the company they work for. The email addresses from business valuators of the NiRV were retrieved from the NiRV's website. Duplicate email addresses were deleted. This sample is chosen because it is assumed that this group is known with the BOB multiple. The survey was not sent to interviewees, to prevent a confirmation bias. A brief introduction to the research and the reason for the survey was made clear in the email. The respondents were asked in the email if they knew an acquaintance that is familiar with the BOB, they are free to forward the email. This is done to create a snowball effect. A link to the online survey is found in the email. The survey is conducted on the website of Qualtrics. After four working days, a reminder is sent to the entire sample to increase the response rate.

Survey questions

The survey questions are formulated based on the literature framework (Table 2), questions that were raised after analysing the BOB, and interviews that are conducted with the business valuators. The survey questions were first discussed with the supervisor of KroeseWevers, the

supervisor of the University of Twente, and the KroeseWevers Corporate Finance team, respectively. Small adjustments and improvements were made to the questions. The final survey questions can be found in Appendix 3. The questions in the survey are in Dutch because the BOB is also in Dutch.

Measures

The survey has three types of questions, with the first one being a dummy variable. The first two questions were to assure that the respondents are known with the BOB (Q1) or the BOB survey (Q2). A total of 119 respondents started the survey. Five respondents answered 'No' on Q1, and one respondent stopped the survey in Q2 (Table 4). The six missing respondents are deleted from the dataset because they do not contribute to the research. 96 respondents (80.7%) have completed the survey in full. 23 respondents (19.3%) stopped during the survey for unknown reasons. No cause is seen to delete these responses.

Table 4

Frequency table of Q1 and Q2

		Q1	Q2
N	Valid	125	119
	Missing	0	6

The second type of question is the close-ended Likert-scale question. The Likert scale is a psychometric tool. In these questions statements or hypotheses of this study will be given. The respondents are asked to state their level of agreement with the statement. The original Likert scale makes use of five balanced and symmetrical points (Likert, 1932). However, researchers have produced different measurement ranges. According to Jones (1968) the 2-point scale is easier to use compared to the 7-point scale. However, the 7-point scale is more ambiguous, interesting, and accurate. The respondents also preferred a multiple-category scale over a dichotomous scale. According to Preston & Colman (2000), scales with six or more response categories have higher convergent validity. The highest internal consistency reliability is for response scales between the 7 and 10-point scale. Preston & Colman also found that the highest Cronbach alpha coefficient is accomplished with an 11-point scale, with a negligible difference from the 7-point scale. Maximizing the information retrieval is done by using a 6 or 7-point scale (Green & Rao, 1970). Odd numbers of points scales are preferred because they allow the respondent to take a neutral position. The respondent is therefore not forced to take a side (Colman & Norris, 1997). With all this considered, this research will make use of the 7-point scale. The response labelling will be in line with Simms et al. (2019). As mentioned, the questions of the survey are in Dutch. Therefore, a translation of the Likert scale has been made. This can be seen in Table 5.

Table 5

7-points Likert scale description

Point	Description	Discription in Dutch
1	Strongly Disagree	Helemaal mee oneens
2	Disagree	Mee oneens
3	Slightly Disagree	Lichtelijk mee oneens
4	Neither Agree nor Disagree	Niet mee eens of mee oneens
5	Slightly Agree	Lichtelijk mee eens
6	Agree	Mee eens
7	Strongly Agree	Helemaal mee eens

The questions that make use of the Likert scale can be constructed into four categories. The first category are questions regarding the BOB survey. These questions are coded from SU1 to SU6. The second category are questions regarding the usage of the BOB multiple. These questions are coded from US1 to US6. The third category are questions regarding how comparable firms should be selected. These questions are coded from CF1 to CF5. The fourth and final category of questions are questions regarding the multiple that is used. An overview can be seen in Table 6.

Table 6

Overview of how the close-ended questions are coded

Construct	Question in survey	Code	Statement
Survey of BOB	Q3	SU1	The filling-in sitructions of the Brookz Overname Barometer survey are clear.
	Q4	SU2	The concepts that are used in the Brookz Overname Barometer survey are clear.
	Q5	SU3	The questions in the Brookz Overname Barometer survey are objectively.
	Q6	SU4	The Brookz Overname Barometer survey is always filled in honestly.
	Q7	SU5	The Brookz Overname Barometer survey is always filled in carefully
	Q8	SU6	Time is taken to fill-in the Brookz Overname Barometer survey.
Usage of the BOB multiple	Q11	US1	The Brookz Overname Barometer multiple is only suitable as a sanity check.
	Q12	US2	The Brookz Overname Barometer multiple is applicable without making adjustments for performing a valuation and/or sanity check.
	Q13	US3	The Brookz Overname Barometer is representative for the Dutch SME-market.
	Q14	US4	A valuation based on the Brookz Overname Barometer multiple is a good starting point for the price.
	Q15	US5	The Brookz Overname Barometer multiple is deliberately applied incorrectly during transactions.
	Q20	US6	When applying the Brookz Overname Barometer multiple, comapnies can easily be classified into the right industry.
Comparable firms	Q21	CF1	Expanding the number of industries will result in a more accurate Brookz Overname Barometer multiple.
	Q22	CF2	A revenue and an industry variable will result in a more accurate Brookz Overname Barometer multiple, compared to a indudstry variable alone.
	Q23	CF3	A (normalised) EBITDA margin and an industry variable will result in a more accurate Brookz Overname Barometer multiple, compared to a indudstry variable alone.
	Q24	CF4	A (normalised) investmentlevel (Fixed assets and working capital) and an industry variable will result in a more accurate Brookz Overname Barometer multiple, compared to a indudstry variable alone.
	Q26	CF5	Having three variables (the industry variable and two unkown variables) will result in a more accurate Brookz Overname Barometer multiple, compared to a indudstry variable alone.
The multiple used	Q27	MU1	An EBITDA multiple, which is used when performing a multiple valuation, leads to accurate valuations in the Dutch SME market.
	Q28	MU2	An EBITDA multiple, which is used when performing a multiple valuation, is useful in the Dutch SME M&A-market
	Q29	MU3	A cash flow multiple, which is used when performing a multiple valuation, leads to accurate valuations in the Dutch SME market.
	Q30	MU4	A cash flow multiple, which is used when performing a multiple valuation, is useful in the Dutch SME M&A-market
	Q31	MU5	A free cash flow multiple, which is used when performing a multiple valuation, leads to accurate valuations in the Dutch SME market.
	Q32	MU6	A free cash flow multiple, which is used when performing a multiple valuation, is useful in the Dutch SME M&A-market.

When the results will be analysed, the higher the average response, the higher the respondents agree with the statement. More than thirty respondents answered the questions regarding the survey (SU), whereas more than one hundred respondents answered the other questions. Because of the lower number of responses, a threshold of 2.5 (negatively) or 5.5 (positively) will be held for questions regarding the survey. A threshold of 3 (negatively) or 5 (positively) will be held for all other Likert scale questions.

The third type of question is a close-ended question with a single response. These are questions 9, 10, 16, 17, 18, 19, and 25. All questions, except Q18 and Q19, have the answer option 'Other' to make sure the answer options are collectively exhaustive. Questions 18 and 19 are already collectively exhaustive. An overview of the close-ended questions with a single response and how they are coded can be seen in Table 7. The results of the online survey will be analysed in IBM SPSS Statistics 28. With this, sub-question 3 can be answered.

Table 7

Overview of how the close-ended questions with a single response are coded

Construct	Question in survey	Code	Statement
Valuating SMEs	Q9	VS1	Which of the following methods is most suitable for drawing up a valuation, standalone and going-concern, of a Dutch SME:
	Q10	VS2	Which of the following methods is most suitable for performing a sanity check on a valuation, standalone and going-concern, of a Dutch SME:
Usage of the BOB multiple	Q16	US7	In the Brookz Overname Barometer, with EBITDA is meant:
	Q17	US8	The Brookz Overname Barometer multiple must be multiplied with:
	Q18	US9	A valuation done with the Brookz Overname Barometer is:
	Q19	US10	A valuation done with the Brookz Overname Barometer is:
Comparable firms	Q25	CF 6	What additional variable, besides the industry/sector variable, leads to an accurate Brookz Acquisition Barometer multiple and would you like to see added?

5. Results

This chapter discusses the results of this research. This consist of the results from the interviews (qualitative research), the accuracy of the multiple and the survey (quantitative research). These results will be presented to answer the sub-questions and research questions.

In the first paragraph, the results regarding sub-question 1 will be discussed. This includes the results of analysing the BOB editions and the interviews held with the business valuators. In the second paragraph, the results regarding sub-question 2 will be discussed. This includes analysing the accuracy of the BOB multiple with the transaction database from KroeseWevers. In the third paragraph, the results regarding sub-question 3 will be discussed. This includes the interviews and the findings of the survey.

5.1 Creation of BOB multiple

In this paragraph, the first sub-question will be answered. This sub-question is formulated: "*How and under which presumptions are the multiples from the Brookz Overname Barometer created?"* First, the survey of the BOB will be analysed after which the results of the first part of the interviews will be discussed.

5.1.1 Analysing BOB

In this paragraph, the findings of the BOB will be discussed. As mentioned, Brookz was unable to respond to questions about the methodology of the BOB. Therefore, assumptions need to be made about the methodology to ensure the continuity of this research.

The BOB is created for the SME market of the Netherlands. Besides a multiple, some other information about the M&A market is provided. Brookz defines the SME market at the start of the BOB (edition 2015-1) as companies that have a revenue between €0.5 and €25 million. However, this definition has changed in the following editions. Currently, Brookz defines SMEs as companies that have a revenue between €0.5 and €30 million. This definition of an SME is not in line with the definition provided by the Dutch government or the European Union (Figure 3, chapter 2.2). The BOB survey does not mention Brookz's definition of an SME, which could result in different interpretations of an SME.

Based on the email sent to the business valuators, it is presumed that each business valuator's weighing is the same, regardless of the size of the company. Brookz mention in their email: "Om een representatieve steekproef te verzamelen, versturen we de vragenlijst aan slechts 1 persoon per kantoor." This is translated to: "To create a representative sample, we only sent 1 survey to each company." Therefore, each company need to assign one person to fill in the survey. With this, two

questions arise. The first one is regarding the sample size. The sample size with the current methodology is 274, which are the M&A companies. However, Brookz could increase the sample size to 1200. According to Brookz, more than 1200 M&A consultants work at those 274 companies. If the same response rate were achieved, 48% in the latest BOB edition, there would be a total of 576 respondents. The BOB results would then be more sustained than it currently is. The second question that arises is the weighing used. Brookz currently assumes that every company has the same idea of certain topics. However, in a company with more than twenty business valuators there might be significant differences about certain topics.

When filling in the survey, the respondent's choice is limited. The question in the BOB-survey is the following: "Wat is volgens u de gemiddelde EV/EBITDA multiple die op dit moment wordt betaald voor bedrijven in de volgende sectoren?" Which is translated to: "What is according to you the average EV/EBITDA multiple that is currently paid for companies in the following industries?" The survey then shows the industries provided by Brookz and a dropdown option that is between 0.5 and -0.5, with steps between them of 0.1. The answers are not collectively exhaustive because it is not possible to answer anything above 0.5 or below -0.5. In addition, there is no option to not fill in anything, or at least not mention that it is not necessary to leave the option blank. Therefore, the respondents are obligated to give their opinion of an industry that they might not know anything about.

The BOB 2018 edition 1 mentions that in 44% of the deals, some sort of earn-out arrangement is applied. However, there is not mentioned whether the BOB indicates the price with or without an earn-out. In the same edition, for the first time, there is mentioned that the company size has an impact on the multiple. The smaller the company, the higher the chances are the FCFs will not be realised (Damodaran, 2011). In addition, the cost of capital is higher for smaller companies (Grabowski, 2018). The BOB measures the company size with the one-year normalised EBITDA, which is partially in line with Grabowski (2013). Grabowski (2013) uses the average EBITDA of multiple years. This arises also the question of whether the EBITDA or the normalised EBITDA should be used for applying the BOB multiple. This is not specifically mentioned in any of the BOBs. However, it does have an impact on the price. The BOB 2021 edition 1 mentions that in 71% of the deals, a change in controlling interest occurs. Buyers pay on average 12% more for a company with a controlling interest. This arises the question of whether the BOB multiple is with or without the control premium. The BOB mentions in several editions' disclaimers, e.g., the difference in multiples regarding the size of the company. However, the BOB is not consistent with those disclaimers.

5.1.2 Findings interview

This part of the interview aims to find biases and inconsistencies in the BOB methodology. The interviews are also used to get ideas for improvements to the BOB multiple, or a publicly available multiple in general.

Interviewees were asked about the instructions for the survey. Interviewee 5 argued that the instructions were clear. Interviewee 2 argued that some questions were not clear. This is in contrast with interviewees 1 and 4. Interviewees 1 and 4 argued that they have not noticed (clear) instructions. Interviewees 3 and 6 have not filled in the survey (recently) and were therefore not able to comment. Due to the lack of instructions, interviewees 1 and 4 did not always understand the questions correctly. Interviewees 1 and 4 both were not sure if the BOB multiple should be calculated with or without an earn-out. In addition, interviewee 4 argued that it is not clear which EBITDA should be taken. Interviewee 4 argued that the EBITDA should be representative of the company's performance, and preferably based on FCF. However, no definitions are given in the survey to calculate the EBTIDA. This can lead to different multiples for the same transaction.

The interviewees were asked about the methodology of the BOB multiple. The interviewees mentioned the time spent on the survey, the weighing of each company, and filling in the multiples for each industry. Interviewees 1, 2, 3, 4, and 5 agreed that filling in the survey should not take too much time. Simplicity is preferred. This will result in more people taking part in the survey. All the interviewees mentioned that filling in the survey will never be at top of their priority. This could result in that the survey will not be filled in with diligence. Interviewees 1 and 4 also mention that there are no checks built into the survey, which makes the survey sensitive to errors. Interviewees 2 and 5 argued that it is not correct that the respondents should be able to influence the multiple of a certain industry if they have not done a transaction in that period. Interviewee 3 also recognizes a bias in the fact that the multiple is calculated based on the multiple of the previous period. In addition, the BOB multiples of previous periods are shown in the survey itself. This could influence the answers of the respondents. Interviewees 2 and 4 argue that the weighing of a company with ten business valuators should be higher than that of a company with only one.

The interviewees were asked how they made use of the BOB multiple and if it is representative of the SME market in the Netherlands. All interviewees said that they only used the BOB multiple as some sort of sanity or cross-check. None of them used it as their main valuation method. Interviewee 5 said: "Ik zou niet serieus genomen worden door mijn collega's als ik alleen de BOB multiple zou gebruiken voor mijn waarderingen." This is translated to: I would not be taken seriously by my colleagues if I only used the BOB multiple for my valuations. In addition, interviewees 4 and 5 only make use of multiple when the multiples can be used to their advantage. This could influence how the survey is filled in. When interviewees 4 and 5 represent a buying party, the BOB multiple is used in

their bid. Interviewees 4 and 5 both argue that they do this because they know the BOB multiple is lower in those cases. In contrast, when interviewee 4 is selling a company, the success fee depends on the BOB multiple. If the interviewee can sell the company for more than the multiple, the fee will increase. For this, interviewee 4's goal is to beat the BOB multiple. Interviewee 4 said: "Het verslaan van de BOB multiple is voor ons een doel op zichzelf, maar dat is niet ambitieus op dit moment." This is translated to: To beat the BOB multiple is for us (interviewee's 4 business valuators team) a goal on itself. However, currently, that is not ambitious. Interviewee 4 is the only interviewee that argued that the BOB multiple is not representative of the SME market in the Netherlands. In the BOB 2022 edition 1, the average multiple for SMEs in the Netherlands is 4.85. Interviewee 4 said: "Wij hebben momenteel meer deals met een multiple van boven de twintig, dan deals met een multiple onder de vijf." This translated to: "We currently have more deals with a multiple of above twenty, than deals with a multiple below five." However, when asked further about the deals of interviewee 4, most transactions are with companies that have a revenue above the €30 million. The revenue range for the BOB multiple is between €0.5 and €30 million. This means that interviewee 4 makes use of the BOB multiple even though the multiple is not created for interviewee 4 sorts of deals.

The interviewees were asked if they had additional comments on the survey and the BOB multiple itself. The interviewees argued about instructions of multiple valuation in general, the academic value of the survey, and what could improve the BOB multiple. Interviewee 1 argues that the multiple is an average of the Netherlands or an industry. However, not all users know this. Interviewee 1 often must explain why the valuation of a company is different compared to the BOB multiple. Interviewee 1, therefore, argues that there should be an explanation of how multiple valuation works. Interviewee 3 argues that the BOB multiple is used as a marketing tool and therefore should not be taken too seriously. However, adding how the multiple is normally distributed would make the BOB multiple more interesting. An example is a multiple for a certain industry between 3.3 and 4.5, instead of just a multiple of 3.9. Interviewee 3 also acknowledge that mistakes can be made if the user does not have a basic understanding of multiple valuation. Interviewee 4 argued that the survey should have some more academic value, to increase the quality of the survey.

5.2 The accuracy of the BOB multiple

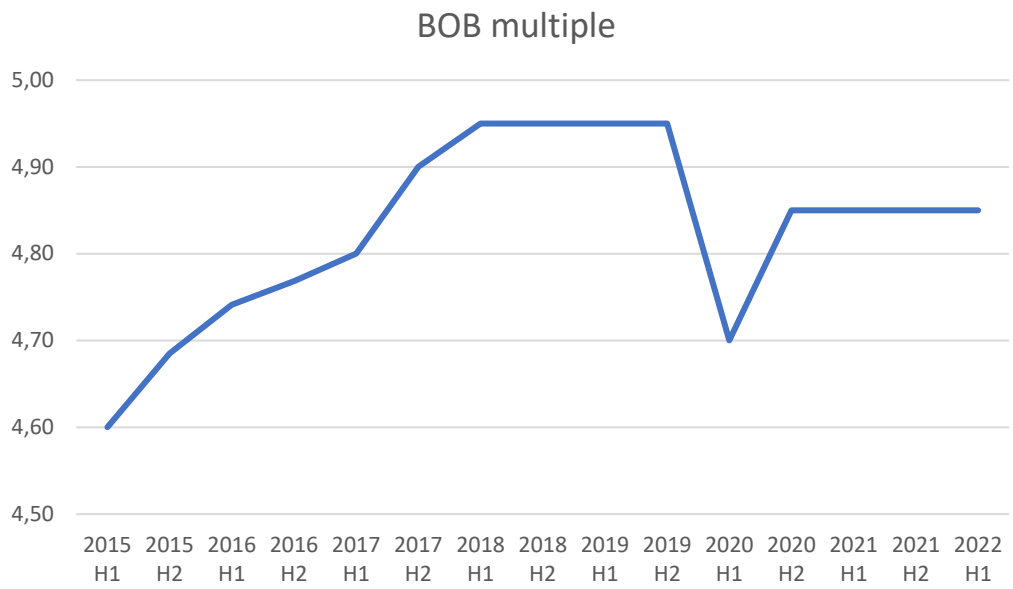
In this paragraph, the second sub-question will be answered. This sub-question is formulated: *"What is the accuracy of the Brookz Overname Barometer multiple."* To answer this sub-question, a transaction database of KroeseWevers' transactions between January 2020 and June 2022 was created.

The BOB multiple volatility is low throughout the years, as seen in Figure 4. With the BOB multiple is meant the average multiple of all industries combined. In the first few years of the BOB, the

multiple has steadily grown from a multiple of 4.6 in 2015 H1 to a multiple of 4.95 in 2018 H1. In 2020 H1 the multiple decreased from a multiple of 4.95 to a multiple of 4.7. This is according to the BOB 2020 H1 due to COVID-19. The period this research focuses on, 2020 H1 to 2022 H2, the multiple has only increased once in 2020 H2 to a multiple of 4.85. Because the means between the periods 2020-2 and 2022-1, these periods can be combined.

Figure 4

BOB multiple in the periods 2015 - 2022



KroeseWevers' transaction database exists out of 28 transactions in the given period. The descriptive statistics of Multiple 1 and 2 can be seen in Table 8. The frequency and mean of Multiple 1 and 2 in the periods between 2020-1 and 2022-1 can be seen in Table 9. The volatility of the BOB multiple, Multiple 1, and Multiple 2 between 2020-1 and 2022-1 can be seen in Figure 5.

Table 8

Descriptive statistics Multiple 1 and 2

	N	Mean	Median	Std. Deviation	Minimum	Maximum	Percentile 25	Percentile 75
Multiple 1	28	4,38	4,05	4,133	-10,48	11,79	3,00	6,18
Multiple 2	28	5,82	5,39	3,53	0,28	15,55	3,32	7,50

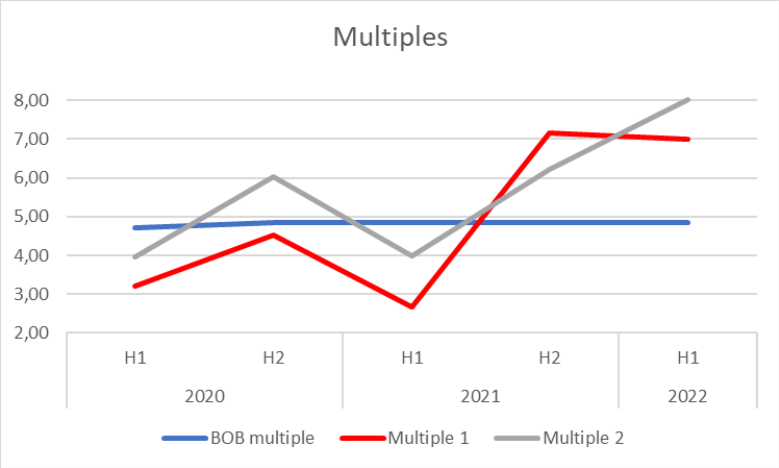
Table 9

Frequency table and mean of Multiple 1 and 2

Period	Frequency	Percent	Multiple 1 Mean	Multiple 2 Mean
2020-1	7	25,0	3,20	3,96
2020-2	5	17,9	4,52	6,02
2021-1	4	14,3	2,66	3,99
2021-2	4	14,3	7,16	6,23
2022-2	8	28,6	4,80	8,03
Total	28	100,0		

Figure 5

The volatility of the BOB multiple, Multiple 1, and Multiple 2



The valuation accuracy for the total sample (A) is small when compared to the accuracy of listed firms. Both multiples have a negative mean, which suggests that the predicted value (or predicted multiple) is too high. For Multiple 1, 21% of the predicted multiples are within 15 per cent of the actual multiples, and 36% are within 25 per cent. The accuracy is increased for Multiple 2, where the accuracy is 32% and 46%, respectively. The results suggest a higher accuracy is achieved when mathematical outliers are removed (B). Multiple 1 has a small negative mean of -0.15, whereas Multiple 2 has a small positive mean of 0.08. With Multiple 2, 36% of the estimated values are within 15 per cent of the actual value. With Multiple 1, 60% of the estimated values are within 25 per cent of the actual value. The results suggest a high accuracy when only one hundred per cent of the shares are transferred (C). Both multiples have a small negative mean, which suggests that the predicted value is too high. The median of Multiple 1 is slightly negative, whereas the median from Multiple 2 is slightly positive. Even though the mean and median show positive results over the accuracy, the fraction within 15 and 25 per cent suggest comparable results as the total sample (A) and worse results than when outliers are removed (B). The results show a high negative mean when all the transactions are

removed that have an earn-out. The fraction within the 15 and 25 per cent brackets are similar to the results from A and C. An overview can be seen in Table 10.

Table 10

Accuracy of Multiple 1 and 2

	Price / EBITDA	
Measure	Multiple 1	Multiple 2
A. Total sample		
Mean	-0,60	-0,69
Median	-0,16	0,11
Fraction within 15%	0,21	0,32
Fraction within 25%	0,36	0,46
Number of observations	28	28
B. Outliers removed		
Mean	-0,15	0,08
Median	-0,14	0,13
Fraction within 15%	0,24	0,36
Fraction within 25%	0,60	0,52
Number of observations	25	25
C. Transactions 100%		
Mean	-0,17	-0,09
Median	-0,13	0,10
Fraction within 15%	0,18	0,36
Fraction within 25%	0,36	0,45
Number of observations	22	22
D. No earn-out		
Mean	-0,66	-0,80
Median	-0,13	0,11
Fraction within 15%	0,25	0,33
Fraction within 25%	0,38	0,46
Number of observations	24	24

The results suggest that the highest accuracy is achieved when the outliers are removed from the dataset. The median is in all cases stable, which could be due to the small dataset. Multiple 2 always has the highest percentage in the 15% and 25% brackets, except for the 25% bracket when the outliers are removed. With Multiple 1 an accuracy, defined by being within 15 per cent of the actual price, between 18 to 25% can be achieved. With Multiple 2 an accuracy between 32 and 36% can be achieved. This means that the highest accuracy is achieved when Multiple 2 is used. It is however assumed that Brookz makes use of Multiple 1. The multiples produced are in general slightly negatively biased. In other words, the median valuation mistakes are close to zero, whereas the mean valuation errors are negative. With this, sub-question 2 can be answered.

5.3 Improvements to the BOB multiple

In this paragraph, the third sub-question will be answered. This sub-question is formulated: *"What adjustments can be made to increase the accuracy of the Brookz Overname Barometer*

multiple?" During the second part of the interview, improvements suggested by the theory will be verified. After this, the suggested improvements are checked by a broader audience via an online survey.

5.3.1 Findings interview

The interviewees were asked what their opinions are about the improvements regarding finding comparable firms. Subjects that were discussed are industries, revenue, sales growth, ROE, EBITDA margin, and company size. In addition, they were asked whether they had suggestions by themselves. After this, the interview continued with questions regarding the multiple and adjustments after the multiple valuation. The multiples discussed are the EBTIDA, (forecasted) P/E, P/B, and P/(F)CF. At the end of the interview, adjustments based on the size and a minority discount were discussed.

Comparable firms

The interviewees were asked about categorising based on the industries. Interviewees 1, 2, and 3 mention that it is sometimes difficult to place a company in a certain industry. This is due to the business model of the company, which can be placed in two different industries. Interviewee 5 argues that there certainly should not be fewer industries than there are currently. Interviewees 2, 3, and 5 mention that further diversification of the industries would be helpful. None of the interviewees thinks a diversification based on the SBI or GICS would increase the accuracy.

The interviewees were asked about categorising based on the company's revenue, sales growth, ROE, and EBITDA margin. Interviewees 1, 3, 4, and 6 argue that adding a revenue category, along with the industry category, will increase the accuracy of the multiple. Interviewee 1 said: "Grote bedrijven zijn minder afhankelijk en worden hierdoor hoger gewaardeerd." This is translated to: "Big companies are less dependent and therefore are valuated higher." Interviewee 3 adds that the categories for the revenue should not be too small, preferably three or four categories. Interviewees 1, 3, and 4 are not convinced that adding a sales growth variable will increase the accuracy, in contrast with interviewee 6. Interviewees 3, 4, and 5 argue that adding the ROE variable would be interesting to see. However, in practice, it would be difficult to measure. Interviewee 4 mentions that there should be at least a definition of ROE and that normalisations should be applied. Interviewee 6 does not see an increase in accuracy with adding the ROE. Interviewees 2, 5, and 6 argue that adding an EBITDA margin would be interesting. Interviewees 2 and 6 both mention that if the EBITDA margin is added, the average benchmark per industry should also be provided.

The interviewees were asked if adding a company size, measured in total assets, would increase the accuracy. None of the interviewees thought that this will increase the accuracy. Interviewees 1 and 2 both mention that there are significant differences within industries, and

therefore makes this variable useless. Interviewees 3 and 6 both mention that it would be far more interesting to see the investment level of the company, and what is normal in a certain industry. Interviewees 3 and 5 both mention that they would prefer the revenue variable over the company size variable.

The interviewees were asked if they had additional variables that could be added and how many variables there should be in total. Interviewee 1 mentioned that it would be interesting to see a variable for the cost structure. However, when asked follow-up questions, interviewee 1 could not mention a good variable. Interviewee 2 mentions that it would be interesting to see the return-on-investment variable (ROI). Interviewee 3 argues that it would be interesting to see the average investment level. In addition, interviewee 3 mentions that a cash flow variable would increase the accuracy. With follow-up questions, interviewee 3 would like to see a combination of the theory of the DCF and multiple valuation. Interviewee 4 mentions that adding a business model variable would be interesting to see. Interviewee 4 gives an example of how much of the revenue is generated by the recurring business. All the interviewees mention that adding more variables would result in higher accuracy. However, in practice, this would not be doable. Therefore, there should be a maximum of three variables.

Multiple

The interviewees were asked about four multiples, the EBTIDA, (forecasted) P/E, P/B, and P/(F)CF multiples. All interviewees agreed that the EBTIDA multiples can be used for accurate valuations. Interviewees 1 and 6 both argued that the EBITDA could be used if the EBITDA is representative for the company. This is meant that the EBITDA should be normalized or that the average EBITDA of multiple years should be taken. Interviewee 2 mentioned that the EBITDA multiple comes close to cash and therefore could be used. This is in contrast with interviewee 3, who argued that the EBITDA says little about the cash flows. Interviewee 3 would prefer a multiple that would say more about the cash flows. However, due to a lack of options, the EBITDA is sufficient. Interviewees 4 and 5 argue that the EBITDA does not say anything about the investments of the company. This would mean that the EBITDA multiple is not useful for capital-intensive companies.

The interviewees were asked if the (forecasted) P/E multiple could be used for accurate valuations. None of the interviewees argued that this is the case. Interviewee 2 argued that the (forecasted) P/E multiple is not relevant for SMEs in the Netherlands. Interviewees 3 and 5 argued that the multiple would be too difficult. This would result in mistakes, which result in inaccurate valuations. The interviewees were asked if the P/B multiple would result in accurate valuations. Again, none of the interviewees argued that the P/B would result in accurate valuations. Interviewee 3 argued that this multiple only says something about the goodwill of the company. Interviewee 4 argued that the

financial statements of SMEs in the Netherlands are too manipulative, which would result in inaccurate valuations.

The interviewees were asked if P/(F)CF multiple would result in accurate valuations. All interviewees argued that this would result in accurate valuations. Interviewees 1, 3, 5, and 6 mention that this would be based on the DCF method and therefore will result in more accurate valuations. Interviewee 3 argues that the method should not be too difficult and that therefore only one year of the FCF should be used. Interviewees 4 and 6 mention that the method might get too difficult. Interviewee 6 adds that the advantages (the simplicity and time taken) of multiple valuation would not outweigh the disadvantages (being less accurate). This is in contrast with interviewee 2, who argues that a minimum of three forecasted FCF years should be used, which would take much more time. Finally, the interviewees were asked if there were additional multiples that would result in accurate valuations. No new multiples were mentioned by the interviewees.

Adjustments

The interviewees were asked about adjustments based on the size of the company and a control premium. In addition, the interviewees were asked if other adjustments need to be made to create accurate valuations. All interviewees argued that it is important to adjust based on the size of the company. Interviewee 1 argues that if the company is bigger that there is a higher certainty that the expected cash flows will be realised. Interviewee 1 argues that the size of the company should be measured by gross profit, whereas interviewees 3 and 5 argue that the size of the company should be measured in revenue. Interviewee 6 argues that the size of the company should be measured with key figures.

The interviewees were asked if an adjustment should be made based on a control premium. Interviewee 6 argues that the standard is that a control premium is valuated and that therefore a minority discount is more relevant. All interviewees argue that if there is a minority in shares, they make use of a minority discount. Interviewees 5 and 6 mention that they only use a minority discount when they could use it to their advantage. Finally, the interviewees were asked if there are more important adjustments. All the interviewees argue that there are many more adjustments, but that the size and control premium (or minority discount) are the most important adjustments.

5.3.2 Findings survey

In this paragraph, the findings of the survey will be elaborated on. Firstly, the results of the questions regarding the BOB survey are discussed. Secondly, the results of the questions regarding on how SMEs should be valuated in the Netherlands. Thirdly, the questions regarding the usage of the

BOB multiple. This is followed by the questions regarding finding comparable firms. Finally, the results on which multiple should be used.

BOB survey

Table 11 shows an overview of the descriptive statistics of the questions regarding the survey. The means of the answers given to these questions are between 4.56 and 5.69. SU2 is the only question that is above the threshold of 5.5. Therefore, there can be concluded that all concepts in the BOB survey are clear. All means of the questions are above the neutral position of 4, which indicates that, in general, the respondents are positive about the BOB survey.

Table 11

Descriptive statistics SU questions

	N	Minimum	Maximum	Mean	Std. Deviation
SU1	33	2	7	5,27	1,625
SU2	32	1	7	5,69	1,447
SU3	32	2	7	5,00	1,545
SU4	32	2	7	4,81	1,491
SU5	32	2	7	4,62	1,621
SU6	32	2	7	4,56	1,435
Valid N (listwise)	32				

Valuating SMEs

VS1 and VS2 are two general questions regarding valuating Dutch SMEs in the survey. VS1 is as followed: 'Which of the following methods is most suitable for valuating, a standalone and going-concern, Dutch SME?'. 86.4% of the respondents answered that the DCF method is the most suitable, followed by multiple valuation (9.1%). Four respondents (3.6%) answered 'Other.' Out of these four answers, two mention the adjusted present value method and two mention that it depends on the situation. The frequency table of VS1 can be seen in Table 12.

Table 12

Frequency table VS1

		Frequency	Percent	Valid Percent
Valid	Multiple valuation	10	8,4	9,1
	DCF method	95	79,8	86,4
	Liquidation valuation	0	0,0	0,0
	Intrinsic value valuation	1	0,8	0,9
	Other	4	3,4	3,6
	Total	110	92,4	100,0
Missing	System	9	7,6	
Total		119	100,0	

VS2 is formulated as followed: 'Which of the following methods is most suitable for performing a sanity check on a valuation, standalone and going concern, of a Dutch SME?' 78.0% of the

respondents answered that multiple valuation is the most suitable for performing a sanity check on a valuation. This is followed by the DCF method (12.8%). Seven respondents (6.4%) answered 'Other.' Out of these seven, three respondents mention that multiples are the most suitable. Two mentions a combination of several valuation methods. The frequency table of VS2 can be seen in Table 13.

Table 13

Frequency table VS2

		Frequency	Percent	Valid Percent
Valid	Multiple valuation	85	71,4	78,0
	DCF method	14	11,8	12,8
	Liquidation valuation	1	0,8	0,9
	Intrinsic value valuation	2	1,7	1,8
	Other	7	5,9	6,4
	Total	109	91,6	100,0
Missing	System	10	8,4	
Total		119	100,0	

Usage of the BOB multiple

Table 14 shows an overview of the descriptive statistics of the questions regarding the usage of the BOB multiple. The means are between 2.26 and 4.73. US2 is the only question that is below the threshold of 3. This result shows that the BOB multiple is only applicable when adjustments are made before performing a valuation or sanity check.

Table 14

Descriptive statistics US questions

	N	Minimum	Maximum	Mean	Std. Deviation
US1	110	1	7	4,73	1,750
US2	107	1	7	2,26	1,403
US3	108	1	7	4,41	1,408
US4	108	1	6	3,51	1,519
US5	106	1	7	3,62	1,515
US6	105	2	7	4,39	1,464
Valid N (listwise)	103				

US7 to US10 provide additional information over the BOB multiple. The first question, US7, is as followed: 'In the BOB, what is meant with the EBITDA:'. More than half of the respondents, 53.3%, think that with the EBITDA, the EBITDA of the last closed book year is meant. 16.2% of the respondents think that the EBTIDA of the current year is meant, which includes the realisation till period and the forecast for the rest of the year. 13 (12.4%) of the respondents argued that the correct option was not given and chose the option 'Other'. Out of those respondents, 10 mentioned that this is not defined in the BOB or that they have no idea. The frequency table of US7 can be seen in Table 15.

Table 15

Frequency table US7

		Frequency	Percent	Valid Percent
Valid	The current financial year (= realization + forecast).	17	14,3	16,2
	The last closed financial year.	56	47,1	53,3
	The first forecast financial year.	6	5,0	5,7
	The average of the current financial year (= realization + forecast) and the last closed financial year.	4	3,4	3,8
	The average of several historical fiscal years.	3	2,5	2,9
	The average of several forecast financial years.	2	1,7	1,9
	The average of several historical and forecast fiscal years.	4	3,4	3,8
	Other	13	10,9	12,4
	Total	105	88,2	100,0
Missing	System	14	11,8	
Total		119	100,0	

The second question, US8, is as followed: 'The BOB multiple must be applied with:'. 81.9% of the respondents mentioned that the normalised EBITDA should be used. 11.4% mention that the EBITDA according to the annual accounts should be used. Seven respondents (6.7%) answered with 'Other,' from whom 3 respondents had no idea which EBTIDA should be used, and 2 respondents answered that some sort of normalised EBITDA should be used, which is in line with answer option 2. The frequency table of US7 can be seen in Table 16.

Table 16

Frequency table US8

		Frequency	Percent	Valid Percent
Valid	The reported EBITDA in accordance with the annual accounts.	12	10,1	11,4
	Normalized EBITDA	86	72,3	81,9
	Other	7	5,9	6,7
	Total	105	88,2	100,0
Missing	System	14	11,8	
Total		119	100,0	

The third question, US9, is as followed: 'A valuation done with the BOB is:'. 71.2% answered that the valuation done with the BOB multiple is including the earn-out. The rest, 28.8%, answered that the valuation done with the BOB multiple is excluding the earn-out. The frequency table of US7 can be seen in Table 17.

Table 17

Frequency table US9

		Frequency	Percent	Valid Percent
Valid	Including the earn-out	74	62,2	71,2
	Excluding the earn-out	30	25,2	28,8
	Total	104	87,4	100,0
Missing	System	15	12,6	
Total		119	100,0	

The fourth and final question, US10, is as followed: 'A valuation done with the BOB is:' 63.1% answered that the valuation is done with the BOB multiple including the vendor loan. The other

respondents, 36.9%, answered that the valuation done with the BOB multiple is excluding the earn-out. The frequency table of US7 can be seen in Table 18.

Table 18

Frequency table US10

		Frequency	Percent	Valid Percent
Valid	Including the vendor loan	65	54,6	63,1
	Excluding the vendor loan	38	31,9	36,9
	Total	103	86,6	100,0
Missing	System	16	13,4	
Total		119	100,0	

Comparable Firms

Table 19 shows an overview of the descriptive statistics of the questions regarding finding comparable firms. The mean answers are between 4.87 and 5.58. CF1 (5.07), CF2 (5.58), CF3 (5.29), and CF5 (5.07) are all above the threshold of 5. The results of CF1 show that expanding the number of industries will result in a more accurate BOB multiple. CF2 and CF3 show that adding a revenue and EBITDA margin variable will result in a more accurate BOB multiple, respectively. Although both variables are above the threshold, the revenue variable is preferred above the EBITDA margin variable. This is due to the higher mean and the lower standard deviation. CF5 shows that adding three variables will result in a more accurate BOB multiple.

Table 19

Descriptive statistics CF questions

	N	Minimum	Maximum	Mean	Std. Deviation
CF1	104	2	7	5,07	1,346
CF2	101	2	7	5,58	1,275
CF3	102	1	7	5,29	1,376
CF4	100	1	7	4,87	1,515
CF5	98	1	7	5,07	1,302
Valid N (listwise)	98				

CF6 does not make use of the Likert scale. The question is as followed: 'What additional variables, besides the industry/sector variable, lead to an accurate BOB multiple and would you like to see added?' 59.2% of the respondents answered that they did not know another variable. 40 respondents (40.8%) gave options on what variables could be added. A summary of those answers can be found in Appendix 4.

Multiple

Table 20 shows an overview of the descriptive statistics of the questions regarding the multiple. None of the questions has passed the threshold. MU1, MU3, and MU5 are the same questions, except for the multiple (variable) researched. The same applies to MU2, MU4, and MU6. This means that the questions can be compared to each other to which multiple is preferred. The results show that the FCF

multiple (MU5, 4.47) will result in the most accurate valuations, compared to the CF (MU3, 4.23) and EBITDA (MU1, 3.64) multiple. The FCF multiple (MU6, 4.69) is the most useful for the Dutch SME M&A market when compared to the EBITDA (MU2, 4.61) and CF (MU4, 4.31).

Table 20

Descriptive statistics MU questions

	N	Minimum	Maximum	Mean	Std. Deviation
MU1	96	1	7	3,64	1,636
MU2	96	1	7	4,61	1,424
MU3	95	1	7	4,23	1,547
MU4	95	1	7	4,31	1,488
MU5	94	1	7	4,47	1,598
MU6	94	1	7	4,69	1,488
Valid N (listwise)	94				

6. Conclusion & discussion

In this chapter, the main results will be elaborated. With this, the sub-questions can be answered. This is followed by answering the research questions. This chapter ends with a discussion and limitations section.

6.1 Main findings

The paper has analysed and interviewed six business valuators over the BOB and its survey. The results show that the important concepts are not defined properly. E.g., which EBITDA should be used, whether the valuation is with or without an earn-out or whether a controlling interest is valuated or not. This leaves room for the user's interpretation. The business valuators all agree that the survey should not take too much time to fill in and simplicity is preferred. Additionally, the business valuators agree that the BOB multiple only can be used as a sanity check. The results of the interviews show that the opinions of the interviewees do not always align. Some interviewees argue that the BOB multiple is representative of SMEs in the Netherlands, whereas other interviewees argue that the BOB multiple is way too low.

The BOB multiple has been stable over the last few years, with only a minor change due to Covid-19. This is the result of the methodology Brookz uses for their BOB multiple. This paper assumes that the BOB multiple should be used with the last known EBITDA of the company (Multiple 1). With this, 18 to 25% of the time the BOB multiple predicts the actual price within a 15% bracket. With a 25% bracket, an accuracy between 36 to 60% is achieved. This paper indicates that the highest accuracy is achieved when a three-year average EBTIDA is used (Multiple 2). With Multiple 2, 32 to 36% of the BOB multiple predicts the actual price within a 15% bracket. With a 25% bracket, an accuracy between 45 to 52% is achieved.

In the interviews variables that would result in a high accuracy were discussed with the interviewees. The variables that the interviewees argued would have the highest accuracy for valuating SMEs are used in the survey. The answers of the interviewees were often in contrast with each other. The results of the survey show that all concepts in the BOB (survey) are clear, which is in contrast with later questions on the usage of the BOB multiple. No clear line can be drawn on which EBITDA is meant in the BOB, and whether the valuation is including an earn-out or vendor loan. 81.9% of the respondents argue that a normalized EBITDA should be used instead of EBITDA in line with the annual accounts. The results of the survey show that the revenue variable will result in the highest accuracy, followed by the EBITDA margin. The FCF multiple will result in the highest accuracy, followed by the EBITDA multiple.

6.2 Conclusion

This paper has researched to what extent a publicly available multiple can be used for valuating SMEs in the Netherlands. The paper finds that the publicly available multiple can only be used as a sanity check for valuating SMEs in the Netherlands. The BOB multiple should be used when the valuation of the company is straightforward. Whenever a company has extraordinary capital investments and depreciation, the use of the BOB multiple is not useful. Additionally, when making use of the BOB multiple, a representative EBITDA for the company should be used. The paper argues that the users of the BOB multiple should have a basic understanding of multiple valuation and should think rationally when making use of it.

The paper has analysed the methodology of the BOB multiple thoroughly. The paper identifies several foreseeable problems, e.g., the weighing and the definitions used in the BOB. The paper argues that the BOB would benefit from defining the concepts that are used. The accuracy achieved by the BOB multiple on SMEs is 18-25%. This result is worse when compared with accuracy achieved on listed firms, which is near fifty per cent Lie & Lie (2002). This paper suggests several improvements that the BOB could use to increase the accuracy of the BOB multiple. These suggestions include increasing the number of industries, adding a revenue variable, and making use of a three-year average EBITDA instead of a one-year EBITDA. This paper has shown that by making use of a three-year average EBITDA the accuracy increases to 32-36%. The interviews in this paper give an inside into how business valuators think about multiple valuation on SMEs. The answers of the business valuators were often in contrast with each other. From this, there can be concluded that many aspects of multiple valuation for SMEs in the Netherlands still need to be researched.

6.3 Discussion

Publicly available multiples for SMEs in the Netherlands are widely used among business valuators. However, no research has been conducted on the accuracy of these multiples. This is the first research that has researched the accuracy of a publicly available multiple. It has therefore created a path for further research into the accuracy of such multiples. The paper has researched several variables that could, theoretically, improve the accuracy. This paper has therefore attempted to create a bridge from academic literature written on listed companies to SMEs. The results of these papers can be used in practice by the creators of these publicly available multiples. This paper attempts that the users of these publicly available will think rationally about using the multiple. Based on this research there cannot be concluded that the accuracy of publicly available multiples is worse than the accuracy of listed firms.

This paper has enlightened the dichotomy in the academic literature on valuating SMEs. On one side there is literature that prefers fast and less accurate valuations, which is done with multiple valuation. On the other hand, there is academic literature that prefers to be more accurate, like the DCF method. This paper argues that both methods have their use. The DCF method is the valuation method that is, according to the academic literature, the most accurate valuation method and therefore should be used as the main valuation method. However, these methods should always be checked via a sanity check. Multiple valuation is an excellent valuation method that can be used as a sanity check. Multiple valuation with publicly available multiples could theoretically be used in certain cases as the main valuation method. However, the accuracy of these multiples should increase significantly before this will happen.

This paper exposes that there are two multiples preferred by business valuators in the Netherlands, the FCF and EBITDA multiples. This paper argues that multiple valuation should be used as a sanity check. Although it is assumed, by the theoretical credentials, that the FCF multiple will result in a more accurate valuation compared to the EBITDA multiple. However, this paper argues that the EBTIDA multiple should be preferred over the FCF multiple. This is because multiple valuation is done as a sanity check. Most main valuations are done with the DCF method, which value driver is the FCF. This paper argues that a sanity check is more useful when it makes use of a different value driver compared to the main valuation.

6.4 Limitations

This study has three main limitations when researching the accuracy of the BOB multiple. Firstly, this study assumes that the price is equal to the Enterprise Value. The accuracy of the BOB multiple is an EV/EBITDA multiple, whereas the transaction base of KroeseWevers provides a Price/EBITDA multiple. Secondly, the dataset used to analyse the accuracy of the BOB multiple exist out of 28 transactions, which is too small to make conclusions. These transactions are all done in the east of the Netherlands, which does not filter out any regional differences. No research is conducted to these differences. It is therefore unknown if there are any differences and if they have a significant impact on the multiples. Additionally, this paper research the accuracy of all industries combined. It does not make use of the industry variable. It can be assumed that by including the industry variable, the accuracy of the BOB multiple would increase. The third and final limitation is that this research had to assume several steps on how the BOB multiple is created.

6.5 Acknowledgement

Firstly, I would like to thank my first supervisor Prof. Dr. Ing. A. Bruggink and my second supervisor Ir. E. J. Sempel for their guidance and valuable feedback to finalise my master thesis. In addition, I would like to thank my supervisor from KroeseWevers, N. Grolleman MSc, for his guidance and practical advice for my thesis. Secondly, I would like to thank the interviewees and the respondents for collaborating with me. Finally, I would like to thank KroeseWevers for providing this research opportunity and my colleagues from the Corporate Finance department for the nice discussions and chats.

This thesis provides several improvements to the BOB. Brookz is free to use these suggested improvements. Additionally, they can contact the author of the paper for giving additional insights which could improve the BOB.

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Appendix 1 – Interview Questions

During the interview, there will be first a brief introduction to the objective of the interview and the research. This was followed by questions regarding which company they work at, their years of experience, what their highest education is and if they have followed any additional education in their line of work. With the permission of the interviewee, the interviews are recorded. The interviews were conducted in Dutch. The transcripts are therefore also in Dutch. For research purposes, quotes that are used in the research will be translated. The questions below are the outline questions for the interview. During the interview, follow-up questions can be asked to clarify certain answers. After the interview, a summary of their answers was sent to the interviewee. This has given them the possibility of the interpretations of the interviewer are correct.

General questions:

1. Are you familiar with the Brookz Overname Barometer (BOB) that Brookz publish two times a year?
2. Have you read the BOB recently?

Questions regarding the BOB multiple surveys:

3. Are you familiar with the BOB multiple?
4. Do you have a clear idea of how Brookz creates these multiples?
5. Have you seen what the survey of the BOB looks like?
    a. Have you filled in this survey?
    b. Did you find any difficulties filling in this survey
    c. Were there clear instructions for filling in this survey?
6. What do you think about the methodology Brookz uses to create these multiples?
    a. Do you see any biases in their methodology?
    b. Do you see any limitations in their methodology?
7. What do you think about how Brookz reports their results in their BOB
    a. Do you find these results clear?
8. Do you make use of the BOB multiples in your valuations?
    a. How and when do you make use of them?
    b. Do you think that the results are representative of the SME market of the Netherlands?
    c. Do you make any adjustments when before using the multiple?
9. How could Brookz improve the methodology of their BOB multiple?
10. Do you have any additional comments regarding the BOB multiple methodology?
11. What do you think are positive aspects of the BOB?

Questions regarding the possible improvements a multiple for SMEs in the Netherlands, with adding variables to get comparable firms:

12. Do you think that number of industries provided is sufficient to get an accurate valuation
13. Do you think that adding more industries (In line with their SBI code), will result in more accurate valuations?

14. Do you think that the industries provided in the BOB multiple should be in line with the (new) GICS industries code?
15. Do you think that adding a revenue variable will result in more accurate valuations?
16. Do you think that adding a sales growth variable will result in more accurate valuations?
17. Do you think that the profitability variable, the measure by the ROE, will result in more accurate valuations?
18. Do you think that the profitability variable, measured by the EBITDA margin, will result in more accurate valuations?
19. Do you think that the risk characteristics variable, measured by the firm size in total assets, will result in more accurate valuations?
20. Do you think that a combination of the risk characteristic (firms' size in total assets) and the profitability variable (ROE) will result in more accurate valuations?
21. Do you think any other variables could be added to get a more accurate valuation?
22. How many variables should be implemented to increase the accuracy of the BOB multiple?
23. Which combinations of variables will get the highest accuracy in valuation?
24. Which variables do you think are the most feasible to implement?
25. Which variables do you think are the least feasible to implement?

Questions regarding the possible improvements to the BOB multiple, regarding the multiplier:

26. Do you think the EBITDA multiplier is a good multiplier to use for multiple valuating SMEs in the Netherlands?
27. Do you think the forecasted P/E multiplier is a good multiplier to use for multiple valuating SMEs in the Netherlands?
28. Do you think the P/B multiplier is a good multiplier to use for multiple valuating SMEs in the Netherlands?
29. Do you think the P/CF multiplier is a good multiplier to use for multiple valuating SMEs in the Netherlands?
30. Do you think that there is another multiplier that could be used for accurately valuating SMEs in the Netherlands?

Questions regarding the possible improvements of the BOB multiple, regarding the adjustments after the multiple valuations:

31. Do you think that adjusting the price of the company based on its company size will result in a more realistic/accurate price?
    a. How should this be measured?
32. Do you think that adjusting the price of the company based on having a control premium, or not, will result in a more realistic/accurate price?
33. Do you think any other adjustments should be made when after the multiple valuation, which would result in a more realistic/accurate price?

Appendix 2 – Question Brookz

Questions for Brookz

1. Hoe vaak zijn de Brookz Overname Barometers (BOB) de afgelopen jaren gedownload?
2. Hoeveel overnamekantoren/adviseurs zijn er aangesloten bij Brookz?
3. Is de BOB multiple accuraat, en kan deze gebruikt worden tijdens bedrijfsovernames?

Vragen m.b.t. de enquête/ de totstandkoming van de BOB:

4. Worden er instructies meegegeven bij het invullen van de BOB EBITDA multiple survey?
    a. Zo ja, welke?
5. Wat is de criteria waaraan voldaan moet worden om de survey in te mogen vullen?
6. Waarom is er gekozen voor de definitie van een MKB die beschreven staat in het begin van de BOB
    a. Toelichting: In de eerste editie staat MKB gedefinieerd als bedrijven met een omzet tussen de €0.5 miljoen en €25 miljoen.
    b. Definitie gaat in 2016 h1 naar €0.5 tot €30 miljoen omzet, waarnaar de definitie in 2016 h2 weer teruggaat naar €0.5 miljoen en €25 miljoen.
    c. Definitie gaat in 2019 H1 weer terug naar €0.5 tot €30 miljoen.
        i. Zou je niet verwachten dat de multiple zal toenemen als de definitie van een MKB naar boven wordt bijgesteld?
7. Waarom is deze definitie aangepast door de jaren heen?
8. Vraagt Brookz in haar enquête specifiek naar bedrijven die aan deze criteria voldoen?
9. De personen die de vragenlijst invullen hebben de mogelijkheid om de multiple, ten opzichte van de vorige editie, bij te stellen met +0,5 tot en met -0,5. Waarom is er gekozen voor deze marge? Hoezo zit hier een limiet in?
    a. Waarom is er niet gekozen om de Business Valuator (BV) zelf haar multiple te laten invullen? Dus te kijken naar de aan- en verkopen en dan delen door de EBITDA?
10. Wat wordt gedaan indien een cel leeg wordt gelaten? Hoe wordt dit verwerkt? Wat doen jullie als er 0 wordt ingevuld?
11. Hoe wordt de gemiddelde MKB multiple van Nederland berekend?
12. Waarom heeft Brookz gekozen voor een EBITDA-multiplier en niet een andere multiplier?
13. Wordt dezelfde survey ook gebruikt in de andere landen (DACH, UK&I)

Vragen m.b.t. de halfjaarlijkse BOB-edities:

14. In verschillende edities zijn er correcties toegepast op de multiples t.o.v. de vorige editie. Waarom is er gekozen om deze multiple achteraf aan te passen?
    a. Editie 2015 H2 en 2016 H1
    b. Editie 2018 H2 en 2019 H1
15. Hoe zal de BOB multiple door haar gebruikers gebruikt moeten worden, volgens Brookz?
    a. In 2016 h2 benoemt Brookz dat deze multiples gebruikt kunnen worden als een cross-check bij bedrijfswaarderingen
16. In het onderzoek benoemen jullie vaak de response ratio. Hoe wordt deze berekend?
17. In het onderzoek wordt benoemd dat de deelnemers aan het onderzoek voor een X percentage verantwoordelijk zijn voor het aantal transacties in de MKB-markt. Hoe wordt dit percentage berekend?
    a. Zoals in 2020 H2 beweren ze dat de mensen die meedoen aan de enquête verantwoordelijk zijn voor 90% van de transacties.

18. In de BOB multiple, hoe zit daar de earn-out regeling verwerkt. Is deze inclusief, exclusief of wordt er geen rekening gehouden met de earn-out regeling?
19. In de BOB multiple, hoe zit daar de control premium in verwerkt? Is deze inclusief, exclusief, of wordt er geen rekening gehouden met de control premium?
20. In het onderzoek benoemen jullie dat de bedrijfsomvang gemeten kan worden door middel van de EBTIDA. Op basis waarvan is dit gedaan?
    a. Zie bijvoorbeeld Editie 2019-H1

Appendix 3 – Survey questions

There are a total of 32 survey questions. The first two questions are general questions to double-check whether the respondent is suitable for certain questions. If the respondent answers 'Nee' (No) to the first question, the survey will end. If the respondent will answer 'Nee' (No) on the second question, the respondent will skip questions 3 to 8. These questions can only be filled in if the respondent has recently filled in the BOB survey. If no answers are given below the question, for example, question 3, the answers will be on the 7-point Likert scale.

Survey questions:

Q1 Ik ben bekend met de Brookz Overname Barometer.

1. Ja
2. Nee

Q2 Ik heb de Brookz Overname Barometer survey in het afgelopen jaar ingevuld.

1. Ja
2. Nee

Q3 De invulinstructies in de Brookz Overname Barometer survey zijn duidelijk.

Q4 De begrippen die gebruikt worden in de Brookz Overname Barometer survey zijn duidelijk.

Q5 De vragen in de Brookz Overname Barometer survey zijn objectief.

Q6 De Brookz Overname Barometer survey wordt altijd eerlijk ingevuld.

Q7 De Brookz Overname Barometer survey wordt altijd zorgvuldig ingevuld.

Q8 Voor het invullen van de Brookz Overname Barometer wordt de tijd genomen.

Q9 Welke van onderstaande methodes is het meest geschikt voor het opstellen van een waardering, standalone en going-concern, van een Nederlandse MKB-onderneming:

1. Multiple valuation
2. Discounted cash flow methode
3. Liquidatie waardering
4. Intrinsieke waarde waardering
5. Anders, namelijk:

Q10 Welke van onderstaande methodes is het meest geschikt voor het uitvoeren van een sanity check op een waardering, standalone en going-concern, van een Nederlandse MKB-onderneming:

1. Multiple valuation
2. Discounted cash flow methode
3. Liquidatie waardering
4. Intrinsieke waarde waardering
5. Anders, namelijk:

Q11 De Brookz Overname Barometer multiple is alleen geschikt als sanity check.

Q12 De Brookz Overname Barometer multiple is toepasbaar zonder aanpassingen voor het uitvoeren van een waardering en/of sanity check.

Q13 De Brookz Overname Barometer multiple is representatief voor de Nederlandse MKB-markt.

Q14 De waardering o.b.v. de Brookz Overname Barometer multiple is een goed uitgangspunt voor de prijs.

Q15 De Brookz Overname Barometer multiple wordt tijdens transacties bewust onjuist toegepast.

Q16 Met de EBITDA wordt in de Brookz Overname Barometer bedoeld:

1. Het huidige boekjaar (= realisatie + forecast).
2. Het laatste afgesloten boekjaar.
3. Het eerste geprognotiseerde boekjaar.
4. Het gemiddelde van het huidige boekjaar (= realisatie + forecast) en het laatste afgesloten boekjaar.
5. Het gemiddelde van het huidige boekjaar (= realisatie + forecast) en het eerste (volledig) geprognotiseerde boekjaar.
6. Het gemiddelde van meerdere historische boekjaren.
7. Het gemiddelde van meerdere geprognotiseerde boekjaren.
8. Het gemiddelde van meerdere historische en geprognotiseerde boekjaren.
9. Anders, namelijk:

Q17 De Brookz Overname Barometer EBITDA multiple moet vermenigvuldigd worden met:

1. De gerapporteerde EBITDA volgens, in overeenstemming met de jaarrekening.
2. De genormaliseerde EBITDA.
3. Anders, namelijk:

Q18 De waardering die gedaan wordt door middel van de Brookz Overname Barometer is:

1. Inclusief de earn-out.
2. Exclusief de earn-out.

Q19 De waardering die gedaan wordt door middel van de Brookz Overname barometer is:

1. Inclusief de vendor loan.
2. Exclusief de vendor loan.

Q20 Tijdens het toepassen van de Brookz Overname Barometer multiple, zijn bedrijven gemakkelijk in te delen in de juiste industrie/sector. *Ter info: Dit zijn de industrieën/sectoren gedefinieerd door Brookz.*

Q21 Het uitbreiden van het aantal industrieën/sectoren leidt tot een accuratere Brookz Overname Barometer multiple. *De tabel is ter referentie van de industrieën/sectoren die door Brookz zijn bepaald.*

Q22 Het hebben van een omzet en industrie/sector variabele leidt tot een accuratere Brookz Overname Barometer multiple, dan alleen de industrie/sector variabele.
De categorisering en de daarbij horende multiples in de tabel zijn alleen als voorbeeld en ter indicatie bedoeld.

Q23 Het hebben van een (genormaliseerde) EBITDA-marge en industrie/sector variabele, leidt tot een accuratere Brookz Overname Barometer multiple, in vergelijking tot alleen een industrie/sector variabele. *De categorisering en de daarbij horende multiples in de tabel zijn alleen als voorbeeld en ter indicatie bedoeld.*

Q24 Het hebben van een (normale) investeringsniveau (vaste activa & werkkapitaal) en industrie/sector variabele leidt tot een accuratere Brookz Overname Barometer multiple, in vergelijking tot alleen een industrie/sector variabele. *De categorisering en de daarbij horende multiples in de tabel zijn alleen als voorbeeld en ter indicatie bedoeld.*

Q25 Welke additionele variabele, naast de industrie/sector variabele, leidt tot een accurate Brookz Overname Barometer multiple en zou u nog toegevoegd willen zien?

1. Ik zou geen additionele variabele willen zien.
2. Ik zou de volgende additionele variabele willen zien, namelijk:

Q26 Het hebben van drie variabelen (de variabele industrie/sector en twee onbekende variabele), leidt tot een accuratere Brookz Overname Barometer multiple, in vergelijking tot alleen een industrie/sector variabele.

Q27 Een EBITDA multiple, die gebruikt wordt tijdens het uitvoeren van een multiple valuation, leidt tot accurate waarderingen in de Nederlandse MKB-markt.

Q28 Een EBITDA multiple, die gebruikt wordt tijdens het uitvoeren van een multiple valuation, is goed bruikbaar in de Nederlandse MKB M&A-markt.

Q29 Een cashflow multiple, die gebruikt wordt tijdens het uitvoeren van een multiple valuation, leidt tot accurate waarderingen in de Nederlandse MKB-markt.

Q30 Een cashflow multiple, die gebruikt wordt tijdens het uitvoeren van een multiple valuation, is goed bruikbaar in de Nederlandse MKB M&A-markt.

Q31 Een free cashflow multiple, die gebruikt wordt tijdens het uitvoeren van een multiple valuation, leidt tot accurate waarderingen in de Nederlandse MKB-markt.

Q32 Een free cashflow multiple, die gebruikt wordt tijdens het uitvoeren van een multiple valuation, is goed bruikbaar in de Nederlandse MKB M&A-markt.

Appendix 4 – Open answers survey

This is a list answer to the open question CF5.

	N	Valid Percent
Size company	3	6,4
Revenu	4	8,5
FTE	5	10,6
Gross margin	1	2,1
National or international	1	2,1
ESG	1	2,1
Stay on of management	3	6,4
Amount of companies	2	4,3
Standarddeviation, normal distribution	1	2,1
Dependence on the owner	1	2,1
Beta's	1	2,1
Recurring revenu	2	4,3
Control premium	1	2,1
EBIT	1	2,1
EBTIDA size	1	2,1
Solvability	2	4,3
Free cash Flow	2	4,3
Historic and future growth	4	8,5
IRR	1	2,1
Age company	2	4,3
Age owner	1	2,1
management team composition	1	2,1
Size equity	1	2,1
Region	1	2,1
Risk indicators	1	2,1
Type of buyer	2	4,3
Investments in fixed assets	1	2,1
Total	47	100,0