

University of Tartu
School of Economics and Business Administration

Eric Keskaik

**WHAT DO WE KNOW ABOUT PRACTITIONERS'
APPROACH TO BUSINESS VALUATION? A
SURVEY-BASED REVIEW**

Master's Thesis

Supervisor: assistant Mark Kantšukov

Tartu 2018

Recommended for defense

(juhendaja allkiri)

Accepted for defense “ “..... 2018

I have written the Master Thesis myself, independently. All of the other authors' texts, main viewpoints and all data from other resources have been referred to.

.....

(töö autori allkiri)

TABLE OF CONTENTS

Abstract	4
Introduction	6
1. Methodological procedures of the study	8
2. Overview of the business valuation practitioners' surveys.....	11
2.1. Temporal and geographical distribution of surveys	11
2.2. Research questions covered.....	15
3. Results	19
3.1. Valuation techniques used by practitioners.....	19
3.1.1. Most popular business valuation techniques.....	19
3.1.2. Differences in valuation approaches on developed and emerging markets ..	25
3.2. Sources of financial information	26
3.3. Valuation inputs and time horizons.....	28
3.4. Unanswered research questions	29
Conclusions and discussion	31
References	34
Appendices	39

ABSTRACT

Purpose – The aim of this paper is to provide an integral overview of academic surveys to bring out differences and similarities in practices of business valuers across countries and time, including preferences (and their shift in time) for the most popular valuation approaches, differences in valuation approaches in developed and emerging markets, etc. Over the past several decades many surveys of business valuation practitioners have been conducted to shed the light on practices of valuation appraisers, but survey-based evidence is rather fragmented as structure and scope of surveys varies sometimes very significantly.

Design/methodology/approach – A systematic review of literature was employed. To identify the relevant literature, academic surveys were collected via various databases applying Boolean keyword search and snowballing technique (backward searching and forward searching).

Findings – The results indicate that fundamental analysis has been the most popular business valuation method through all the decades from the 1970s to the present and in all the countries surveyed. The most used fundamental analysis techniques are discounted cash flow-based models and valuation multiples, particularly P/E ratio. Cash flow-based models were not so popular few decades ago, but lately they have been one of the most valuable tools that appraisers use. Valuation multiples have been popular regardless of geographical location and time. When comparing valuation practices on emerging markets to valuation practices on developed markets, some differences emerged.

Practical implications – The review gives a synthesis of already known knowledge – it presents fragmented evidence in a systematic, structured way and brings out gaps in literature. The paper also provides quick access to the main findings and interpretations of the relevant literature in a topic of approaches to business valuation. Finally, the author identifies unanswered questions and gives avenues for future research.

Originality/value – This paper is the first one that provides a systematic overview of academic business valuation surveys in order to determine similarities and discrepancies in business valuation practices by time and regions.

Keywords – Literature review, business valuation, survey, fundamental analysis, valuation multiples.

Paper type – Literature review.

INTRODUCTION

Valuation of companies and businesses is important for several reasons. The main function of valuation is to serve as a value guidance for various financial transactions important from a company's (business's) future perspective – for example mergers and acquisitions, initial public offerings and seeking a strategic investor. As any decent valuation requires a lot of input data, time and qualified valuation specialist, this is a very expensive activity usually not to be performed on a frequent basis. In the present paper we focus only on business valuation, setting aside other cases of valuation (e.g. valuation of real estate, art, intellectual property, environment, options etc.).

Business valuation can be considered the core of finance because the management decisions are based on how best to increase firm value (Damodaran, 2007). If the business value is not measured then it is also not possible to manage and control it. Therefore, the number of business valuation analysts is growing and they are becoming more and more important. The primary aim of this paper is to provide a systematic overview of academic business valuation surveys in order to determine similarities and discrepancies in valuation practices by time and regions. To the author's knowledge, on the subject of business valuation analysts' surveys no literature review papers have been written to this date.

According to Wee and Banister (2016), review papers add value in different ways – they can point out strengths and weaknesses of methodologies used, bring out main gaps in literature and refresh the information base through a systematic and well-structured overview. It could be really useful for readers who intend to research the same topic but are not so acquainted with it. Also, a review is beneficial for readers who quickly want to access the main findings and interpretations of the main literature in a specific topic. Therefore, literature review papers give an extensive overview of the literature in a

particular region and time, presenting the findings in an organized manner and coming to interesting and relevant conclusions.

In order to reach the aim of this paper, the author raises the following research questions:

- How have preferences for business valuation models/methods changed over years? Which methods have been the most popular?
- Which methods/models have been considered the most useful by valuation practitioners? Which of those are theoretically sound?
- What sources of financial information analysts and practitioners use? What kind of quantitative and qualitative data did/do analysts consider important in the valuation?
- Where do analysts get valuation inputs from? (e.g. for estimating cost of capital, risk free rate) Which indicators have been considered by analysts as value drivers? Best value predictors?
- Are there any differences between valuation practices on developed and emerging markets? What kind of adjustments analysts operating on emerging markets do in their valuation models?
- Are there any differences in the valuation practices of public and non-public companies, start-ups, venture businesses, investment projects (i.e. does valuation approach depend on the asset being valued)?

The rest of the paper is structured as follows: the first chapter brings out the methodological procedures as well as the survey selection procedure. The second chapter gives an overview of the business valuation practitioners' surveys. The third section presents the results – most popular business valuation methods and techniques, sources of financial information, valuation inputs, time horizons and unanswered research questions. The last section includes a conclusion and discussion.

1. METHODOLOGICAL PROCEDURES OF THE STUDY

In the light of the purpose of this research, the systematic literature review was selected, which according to Grant and Booth (2009) "seeks to systematically search for, appraise and synthesis research evidence, often adhering to guidelines on the conduct of a review." A systematic review does not create a new theory or framework, but systematizes existing knowledge. Stressing out the importance of review papers, Grant and Booth (2009) brought out 14 different review types and associated methodologies. Since a systematic review adheres to specific instructions and recommendations for its conduction, the author used multiple articles as guidelines (e.g. Oxman, 1994; Grant and Booth, 2009; Baumeister, 2013; Siddaway, 2014; Wee and Banister, 2016; Xiao and Watson, 2017). Following methodological recommendations ensures that the systematic literature review is reliable, valid and reproducible. In addition, because the present paper includes all academic surveys of practitioners' approach to business valuation, there cannot be error of sampling of literature. This however does not eliminate the issue of heterogeneity of quality of reviewed studies; some may object that not all the surveys should be included in the review.

Inspired by Siddaway (2014), the author employed the following research outline:

- 1) Introduction which provides a theoretical and empirical background as well as describes the aims and objectives.
- 2) Methodological approach which describes systematic literature search in detail.
- 3) Results which describe the characteristics of included studies and integrates the results in an unbiased and systematic way.
- 4) Conclusions and discussion.

In addition, Oxman (1994) provided a checklist for review articles and Xiao and Watson (2017) bring out eight common steps which should be considered when conducting a

literature review. This eight step process of systematic literature review is also followed in the present paper (see Figure 1).

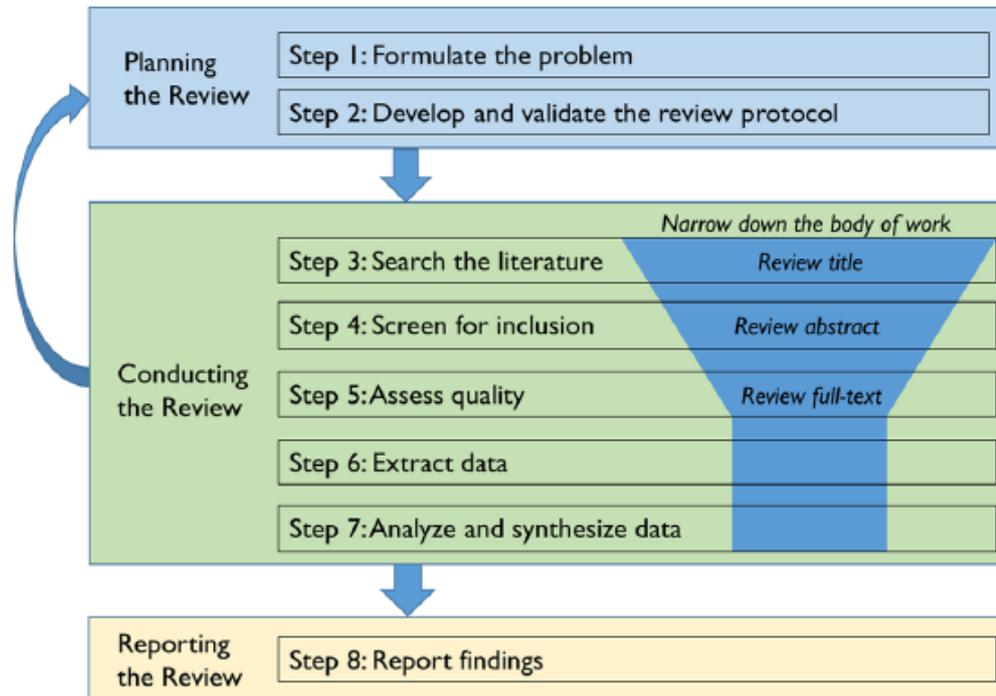


Figure 1. Process of systematic literature review (Xiao and Watson, 2017).

To identify and access the main literature relevant to the research topic, the author used different search engines and databases that are widely available. The following databases were used: Google Scholar, Google, EBSCOhost, Web of Science and SCOPUS. Combinations of specific keywords were used to search for relevant literature. The author came up with the following classification for the keywords used:

- Universal keyword – *survey*.
- Activity-related – *appraisal, appraise, value, valuation*.
- Instrument-related – *methods, models, approaches, practice*.
- Actor-related – *practitioners, analysts, appraisers, valuers*.
- Object-related – *company, business, investment, equity*.

The author searched for different combinations of those strings, which needed to appear in the title of the publication. For example, using EBSCOhost, the author used three different search modes: "boolean/phrase", "find all my search terms" and "find any of my search terms." The search engine also allowed using as many search terms as needed and

had an option of using different Boolean operators (AND, OR, NOT). For example, using "boolean/phrase" with the following keywords: *survey*, *appraise*, *methods*, *analysts* and *investment* gives four search results from which three (Arnold and Moizer, 1984; Arnold *et al.*, 1984; Kantor and Pike, 1987) are used in this paper. The search for literature had no restrictions to the year of publication, but it was restricted to papers written in English and published in academic journals (with only two exceptions). Analytical surveys put together by various audit firms, banks or analyst firms were excluded from this research.

In addition to searching literature from the databases, relevant papers were identified from citations and references in already found papers. According to Jalai and Wohlin (2012), these two methods are called forward snowballing (it implies finding citations to a paper) and backward snowballing (it implies finding citations in a paper). For example, one of the most cited surveys – by Arnold and Moizer (1984) – had 295 citations in Google Scholar as of May 2018. Many works which refer to Arnold and Moizer (1984) are also used in this research, e.g. Pike *et al.* (1993), Manigart *et al.* (1997), Demirakos *et al.* (2004), Imam *et al.* (2008). In total, 37 studies were included. Besides those 37 studies, there are other academic surveys of practitioners on close-related topics which did not fit the focus of the present study; those are described later in this paper.

2. OVERVIEW OF THE BUSINESS VALUATION PRACTITIONERS' SURVEYS

2.1. Temporal and geographical distribution of surveys

Although the earliest available survey of business valuation analysts the author of this paper could find was by Bing (1971) which was published almost 50 years ago, conducting and publication of surveys picked up in the 1980s. In total six papers were published in the 1980s and nine papers in the 1990s. So far, most of the surveys were published in the 2000s – 12 papers in total. As of May 2018, nine papers were published in the 2010s but this decennium is not over yet. Hence, it is possible to claim that the field of academic surveys is quite young compared with some other subfields of empirical finance. The following Figure 2 shows the timeline of published surveys with names of authors and year of publication. The length of horizontal blue lines represents the number of publications that year – the longer the line, the more articles published in a particular year. Descriptive statistics of the reviewed literature are presented in the Appendix 1.

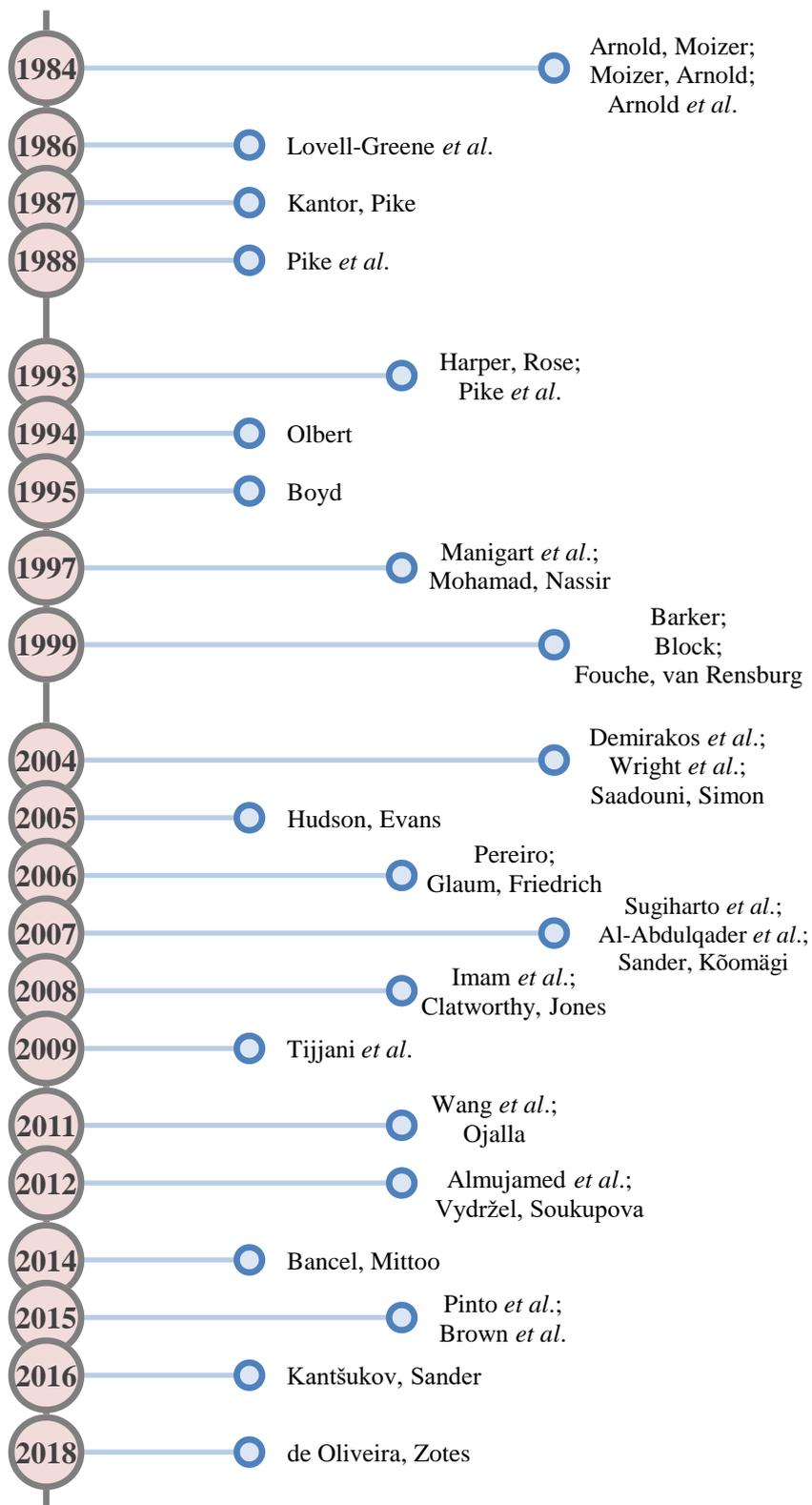


Figure 2. Timeline of the surveys (compiled by the author).

The counting point can be set from one of the most cited papers *A survey of the methods used by UK investment analysis to appraise investments in ordinary shares* by Arnold and Moizer (1984). The study by Arnold and Moizer (1984) laid the path for several other papers in the same field. Many authors who published their results later (e.g. Lovell-Greene *et al.*, 1986; Pike *et al.*, 1993; Olbert, 1994; Fouche and van Rensburg, 1999; Saadouni and Simon, 2004) followed the same pattern as Arnold and Moizer (1984) when structuring their own surveys, which warrants the comparability of results.

It is not surprising that many articles are interconnected. The connections between the authors referring to each other is characterized by the Figure 3 below.

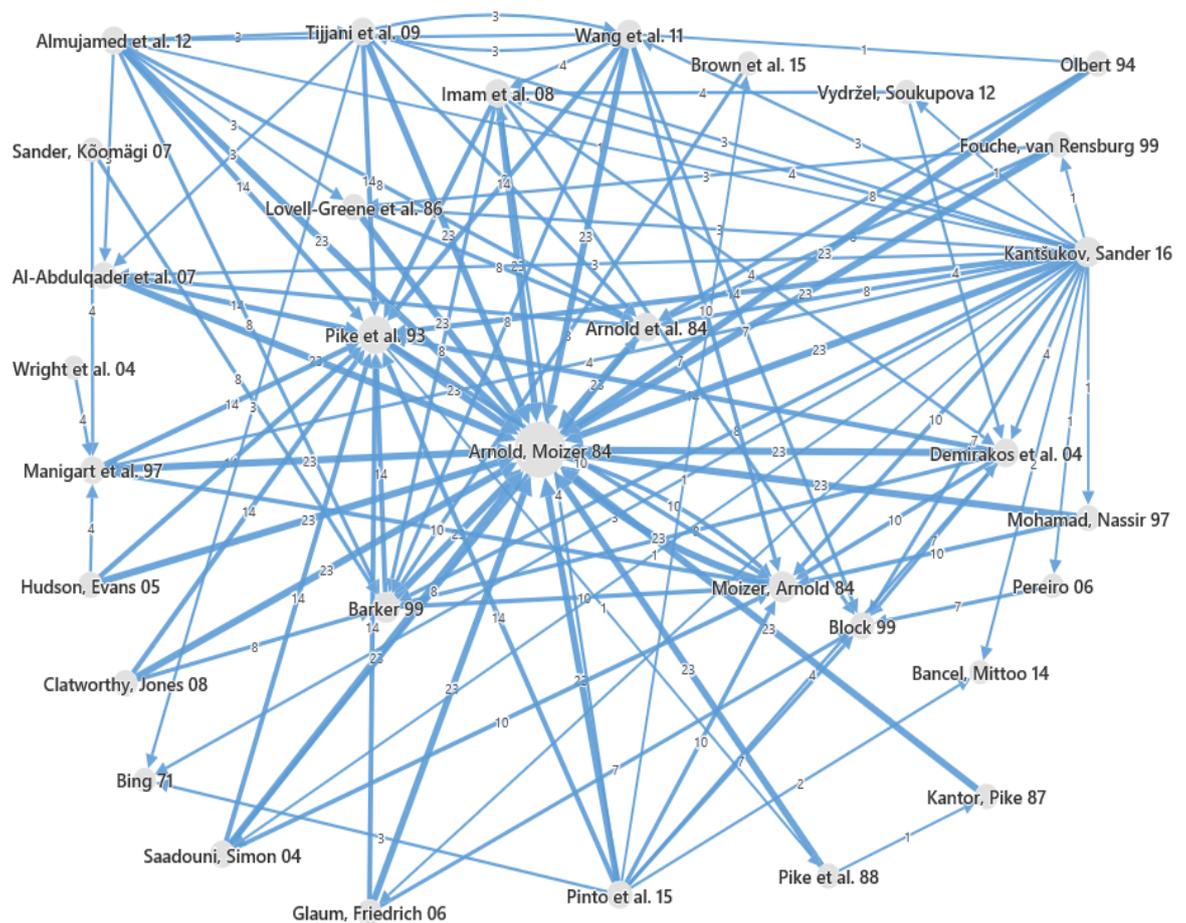


Figure 3. Connections between the surveys (compiled by the author).

Arrows are pointing to the authors who are referred to. Small numbers on the arrows indicate how many times this author is referred by other authors in this figure. It can be seen from the figure that the most referred articles (Arnold and Moizer, 1984; Moizer and

Arnold, 1984; Arnold *et al.*, 1984; Pike *et al.*, 1993; Barker, 1999) are clearly distinguishable in the middle. Also, majority of the authors are connected to each other in some way.

From geographical perspective, research papers can be divided into two groups: surveys conducted among developed markets' analysts and emerging markets' analysts. A brief overview of papers in developed markets and emerging markets is brought out below in Table 1.

Table 1. Geographical distribution of studies.

Developed markets	No. of papers	Author(s)
UK	8	Arnold, Moizer (1984); Moizer, Arnold (1984); Pike <i>et al.</i> (1993); Barker (1999); Demirakos <i>et al.</i> (2004); Glaum, Friedrich (2006); Imam <i>et al.</i> (2008); Clatworthy, Jones (2008)
USA	3	Bing (1971); Arnold <i>et al.</i> (1984); Harper, Rose (1993)
Canada	2	Kantor, Pike (1987); Pike <i>et al.</i> (1988)
Germany		Pike <i>et al.</i> (1993); Glaum, Friedrich (2006)
Australia		Boyd (1995); Hudson, Evans (2005)
Sweden	1	Olbert (1994)
Emerging markets	No. of papers	Author(s)
South Africa	2	Lovell-Greene <i>et al.</i> (1986); Fouche, van Rensburg (1999)
Malaysia		Mohamad, Nassir (1997); Saadouni, Simon (2004)
Estonia		Sander, Kõomägi (2007); Kantšukov, Sander (2016)
Thailand	1	Saadouni, Simon (2004)
Argentina		Pereiro (2006)
Indonesia		Sugiharto <i>et al.</i> (2007)
Saudi Arabia		Al-Abdulqader <i>et al.</i> (2007)
Nigeria		Tijjani <i>et al.</i> (2009)
China		Wang <i>et al.</i> (2011)
Kenya		Ojalla (2011)
Kuwait		Almujamed <i>et al.</i> (2012)
Czech Republic		Vydržel, Soukupova (2012)
Brazil		de Oliveira, Zotes (2018)

Source: compiled by the author.

Majority of the surveys in developed markets have been conducted in the UK. Some of the surveys are also conducted in the US and in other Europe countries besides UK. There are also numerous studies of valuation practices carried out in emerging markets during

the recent decennia which cover a wide range of countries globally. The most cited paper from emerging markets' studies is written by Pereiro (2006). His sample included Argentinian corporations, financial advisors, private equity funds, banks and insurance companies.

Table 1 does not reflect authors who conducted their surveys in multiple countries. Such as Bancel and Mittoo (2014), who's sample consisted of variety of European countries and Pinto *et al.* (2015) who managed to collect answers from the following continents: Americas, Asia Pacific, Europe, Middle East and Africa. Also, Manigart *et al.* (1997) who conducted a survey among UK, France, Belgium and Netherlands venture capitalists. It is also debatable whether Estonia and Czech Republic are emerging markets or developed markets. According to MSCIs market classification, Czech Republic is considered an emerging market and Estonia is classified under frontier markets. In S&Ps classification, Czech Republic is again classified under emerging markets and since Estonia's market is so small, it is not even brought out.

Academic journals in which these papers were published vary by their ranking (based e.g. on H-index). The journal with the largest number of published surveys is *Accounting and Business Research*, with five papers published: Arnold and Moizer (1984), Moizer and Arnold (1984), Kantor and Pike (1987), Pike *et al.* (1988) and Pike *et al.* (1993). There are six journals with two papers published in each journal: *Financial Analysts Journal*, *International Journal of Accounting*, *European Accounting Review*, *Investment Analysts Journal*, *Entrepreneurship Theory and Practice* and *Asian Review of Accounting*. In the rest of the journals, only one of the examined papers was published. Only two papers were not published in academic journals: Pinto *et al.* (2015) work is available at SSRN Electronic Journal and Ojalla's (2011) paper was a finance research project submitted in fulfillment of business administration (MBA) degree. All in all, most of the surveys were published in highly ranked speciality journals.

2.2. Research questions covered

Different surveys cover a wide range of questions; some surveys are more detailed than others. The author of the present paper acknowledges the fact that answers are often not

entirely comparable, and question settings differ by surveys. Nevertheless, the literature still can be compared, and conclusions can be drawn. The survey by Bing (1971) contained only seven questions that covered the methods analysts used in valuation with some additional specifying questions.

Later in the groundbreaking survey by Arnold and Moizer (1984) the range of covered aspects became much wider compared to Bing (1971), e.g.:

- principal activity of the analyst's organisation,
- features of the analyst's working environment,
- frequency of use of methods of investment appraisal,
- perceived usefulness of methods of investment appraisal,
- factors (techniques) considered in fundamental analysis (which was basically the only question that was also asked in Bing (1971) survey),
- frequency of use of alternative asset valuation bases,
- features of analysts' forecasts,
- influence of various information sources,
- frequency of provision of information by company management.

Although there are different other surveys that are based on the pioneering work of Arnold and Moizer (1984), majority of the papers do not follow exactly the same structure nor questions. Several papers only focus on a specific area and do not address a wide range of questions. To illustrate the fact, Kantor and Pike (1987) and Pike *et al.* (1988) conducted surveys in Canada. Unfortunately, their scope was quite narrow – in the first case, only major information determinants were researched and in the second case, only the role of accounting information was examined. No questions were asked about different valuation methods nor techniques considered in analysis. Furthermore, Harper and Rose (1993) presented a review of existing valuation approaches but they only reported appraisers' backgrounds and accuracies of appraisal methods (average error, standard deviation). Finally, Berliner's (1983) survey focused only on the inflation-adjusted accounting information required. Again, usage frequency of investment appraisal methods and techniques was not included in those surveys.

There are also surveys that address issues similar to Arnold and Moizer (1984) but predefined answers are quite different, so it is hard to compare different papers. For example, the first survey conducted in Australia was by Boyd (1995). He asked about valuation approaches, but a lot of possible answers were left out. The only possible approaches to select from were yield approach, NPV approach, cost (summation) approach and the combination of those. Popular techniques e.g. various financial ratios, valuation multiples and net asset value were left out. Also, there are no questions about the preference of valuation technique (fundamental analysis, technical analysis and beta analysis). Last available study where questions about the usage of fundamental analysis, technical analysis and beta analysis were asked is by Almujaed *et al.* (2012). Many surveys, including the most recent studies, have completely left out this question.

While most of the surveys engage financial analysts, there are also surveys that target only specific groups, like venture capitalists. Such studies were conducted by Manigart *et al.* (1997), Wright *et al.* (2004), Hudson and Evans (2005), Sander and Kõomägi (2007) and on the sample of business startups de Oliveira and Zotes (2018). Studies included questions about venture capitalists' investment preferences, sources of information, risk indicators, required rate of return (plus factors that influence it) and valuation methods. Wright *et al.* (2004) also carried out multivariate tests using OLS regression and Kruskal-Wallis tests were used to provide initial background analysis. There are also studies with narrower scope – a paper focusing only on the role of dividends in valuation models which has been carried out by Barker (1999) in the UK. Barker asked about the usage of different valuation models, characteristics of company-specific information usefulness and how respondents use dividend information in valuing shares.

In addition to surveys of valuation of public companies, there are some papers of valuing unlisted shares as well (e.g. Kantor and Pike, 1987; Pike *et al.*, 1988; Vydržel and Soukupova, 2012). The valuation process of unlisted shares is different because technical analysis and beta analysis can not be used in those cases, because such companies are not listed on the stock exchange. So the appraiser is limited to using only different techniques of fundamental analysis. For example, Vydržel and Soukupova (2012) examined valuation methods used in the Czech Republic. Addition to valuation methods, they also included questions about risk-free rate, when most of the surveys do not.

So, there are aspects addressed in almost every questionnaire and there are questions that are asked in only some of the surveys. Most of the surveys begin with introductory questions, asking about the background of appraisers (e.g. age, education, work experience). One of the most important questions is also asked in almost every survey – techniques that are considered in fundamental analysis (in some surveys also in technical analysis). Most of the surveys also include questions about sources of information and their perceived usefulness. Approximately half of the studies have a question about the frequency of use of methods of investment appraisal and as mentioned previously it was more popular in the earlier years. Another frequently asked question is about features of analysts' forecasts. Only some of the studies include time horizon (years/months predicted ahead) in their questionnaire.

In addition, there have been other academic surveys but they do not entirely apply in this paper's context. Multiple authors have researched the theory and practice of corporate finance and surveyed CFOs. For example, such research has been done in the US by Trahan and Gitman (1995) and Graham and Harvey (2001), and in Europe by Brounen *et al.* (2004). CFOs were asked about the cost of capital, capital budgeting and capital structure, so the authors' focus was not particularly on business valuation practices. Johnson and Switzer (2000) examined the field of divorce valuations. Given that divorce valuations are adversarial and may include opposing valuation analysts, the authors still did not concentrate explicitly on valuation practices. Furthermore, Deloof *et al.* (2009) investigated the valuation and the pricing of initial public offerings (IPOs) by investment banks. Finally, Szymański (2012) surveyed valuation practitioners about the problems they face. He did not ask about valuation practices but rather the difficulty of estimating the business value.

3. RESULTS

3.1. Valuation techniques used by practitioners

3.1.1. Most popular business valuation techniques

There does not exist a uniform classification of valuation techniques (methods), although divisions in various finance texts are quite similar. According to Harper and Rose (1993), there are three distinct approaches to value companies:

- 1) earnings-based methodologies (capitalized revenues, discounted cash flow method, P/E multiple approach),
- 2) asset-based methodologies (book value method, adjusted book value method, replacement cost method),
- 3) market-based methodologies (valuation based on previous stock transactions and comparable sales).

Damodaran (2007) proposes four approaches to valuation:

- 1) discounted cash flow valuation which relates the value of an asset to the present value of expected future cash flows on that asset,
- 2) liquidation and accounting valuation, is built around valuing the existing assets of a firm, with accounting estimates of value or book value often used as a starting point,
- 3) relative valuation, estimates the value of an asset by looking at the pricing of “comparable” assets relative to a common variable like earnings, cash flows, book value or sales,
- 4) contingent claim valuation, uses option pricing models to measure the value of assets that share option characteristics.

Analysis of surveys revealed that in some studies in addition to questions about usage of fundamental analysis-based methods, practitioners were also asked about applicability of technical and beta analysis. However, both technical and beta analysis are not approaches to be used to value companies (equity), but rather methods to establish possible stock price trends, over- or underpricing, and riskiness. Therefore, those three methods are all serving different purposes. For example, one can use technical analysis as a method for timing a share purchase or sale. Fundamental analysis should indicate whether it is worth buying a share through determining the fair value of a business. Beta analysis can be useful for the evaluation of portfolio management performance.

Several authors have asked about the preference of business valuation methods in the past. Usage of these three methods among different surveys are presented in the following Table 2. In each survey, respondents were given five different options to measure the usage frequency: almost always (96-100%), usually (66-95%), sometimes (36-65%), seldom (6-35%) and hardly ever (0-5%). In Table 2, responses are summarised as means, based on the midpoints of each frequency interval.

Table 2. Respondents' usage frequency of three main business valuation methods.

Author(s)	Country	Fundamental analysis	Technical analysis	Beta analysis
Arnold, Moizer (1984)	UK	92.0%	41.3%	20.9%
Arnold <i>et al.</i> (1984)	USA	93.5%	41.5%	33.6%
Lovell-Greene <i>et al.</i> (1986)	South Africa	92.2%	55.4%	26.5%
Olbert (1994)	Sweden	95.9%	11.5%	26.8%
Mohamad, Nassir (1997)	Malaysia	96.2%	71.7%	19.4%
Saadouni, Simon (2004)	Thailand	92.8%	41.5%	29.6%
	Malaysia	90.1%	61.1%	14.8%

Source: compiled by the author.

It can be seen from the Table 2 that fundamental analysis is clearly the primary method of business valuation with technical analysis being placed second and beta analysis placed third. The only exception is Sweden, where beta analysis was used more frequently than technical analysis. The minor use of technical analysis in Sweden could be a result of the lack of many investors and consequently the small turnover on the Swedish stock market (Olbert, 1994). When fundamental analysis was used quite evenly among different countries, then differences emerged between countries when using technical analysis and

beta analysis. Technical analysis was more popular in emerging markets, particularly in Malaysia. Beta analysis was used the most in the US and the least in Malaysia. However, as fundamental analysis seems to be prevailing in the practice, we focus below on the usage and preference of methods and models of fundamental analysis.

Despite the small sample (34 respondents), the survey by Bing (1971) found that in the US most popular valuation approaches were simple multiplier valuation techniques. The results showed that valuers were using multiple techniques at the same time rather than rigidly sticking to one. Present value models were very unpopular which refers to a possible gap between theory and practice. This finding was backed up later by Block (1999) who also found that present value techniques were not as widely used in practice as they were in theory. The use of present value-based analysis is too complex due to difficulties in projecting future cash flows and selecting an appropriate discount rate. The most popular valuation methods, techniques, sources of information and time horizons by authors are presented in the Appendix 2.

A number of studies has been conducted by John Arnold and Peter Moizer. For example, in their 1984 paper they examined the differences between portfolio and non-portfolio managers. They rejected the null hypothesis which meant that portfolio managers analysed equities less frequently and in less detail than information intermediaries (non-portfolio managers). Although no significant differences were found in the use of either fundamental analysis or technical analysis. In their most cited paper, Arnold and Moizer (1984) investigated methods used by UK investment analysts. They found that fundamental analysis was the most popular method used, followed by technical analysis and beta analysis, respectively. The most popular technique considered in fundamental analysis was estimation of "true" value of P/E ratio. Similar to Bing (1971) findings, DCF was used most infrequently, although having academic respectability.

Harper and Rose (1993) found that when using earnings-based methods, it is difficult to determine the appropriate market proxy, risk-free rate and sample period. The accuracy of appraisal varies significantly by appraisal technique. Appraisers using combinations of several appraisal techniques produced appraisals with the smallest errors and dispersion of errors. Therefore, appraisers using combinations of several appraisal techniques tended to outperform appraisers using only a single technique. For example, the combination of

adjusted book value and capitalized earnings produced the smallest average error. The biggest average error was produced by capitalized revenues. This finding was also backed up by Pike (1996) who found that the tendency to employ a combination of appraisal techniques rather than relying upon a single technique has increased with each survey.

In most of the surveys, the techniques considered in fundamental analysis and their frequency of use was studied. Each survey had some unique answers, but five main techniques that were used can be identified: P/E ratio, future dividend yield, net asset value, DCF and various financial ratios. These five techniques were the most popular and their frequency of use among different surveys is presented in Table 3 below. Note that different surveys used different scales and not all techniques were brought out in some of the surveys. For better understanding of the table, the author reversed the scales in two of the following cases: Pike *et al.* (1993) and Barker (1999).

Table 3. Methods and models considered in fundamental analysis, frequency of use.

Author(s)	P/E ratio	Future dividend yield	Net asset value	DCF	Financial ratios
Arnold, Moizer (1984)	80.1%	77.1%	69.7%	30.9%	71.0%
Arnold <i>et al.</i> (1984)	80.1%	60.3%	71.0%	53.9%	82.5%
Lovell-Greene <i>et al.</i> (1986)	65.7%	85.1%	64.9%	66.5%	76.4%
Pike <i>et al.</i> (1993)	6.16-6.43/7	-	4.65-4.93/7	3.91-4.58/7	-
Olbert (1994)	83.7%	57.5%	82.8%	58.2%	-
Mohamad, Nassir (1997)	83.5%	56.8%	69.7%	70.4%	88.2%
Barker (1999)	3.80/5	3.33/5	1.52/5	1.01/5	-
Saadouni, Simon (2004)	84.7%-84.9%	46.3%-62.7%	54.1%-63.1%	50.5%-51.5%	84.4%-88.9%
Hudson, Evans (2005)	3.27-4.31/5	1.70-3.03/5	-	3.23-3.89/5	-
Glaum, Friedrich (2006)	-	-	-	2.72/3	-
Al-Abdulqader <i>et al.</i> (2007)	4.32/5	3.90/5	3.33/5	3.21/5	-
Imam <i>et al.</i> (2008)	3.77/5	2.69/5	-	3.71/5	-
Wang <i>et al.</i> (2011) *	4.00/5	-	-	3.14/5	3.50/5
Almujamed <i>et al.</i> (2012) **	3.79/5	3.81/5	3.50/5	3.27/5	4.08/5

Source: compiled by the author.

Notes: Pike *et al.* (1993): 1 – used the least, 7 – used the most. Barker (1999): 1 – used the least, 5 – used the most. Hudson, Evans (2005): 5 – used the most, 1 – used the least. Glaum, Friedrich (2006): 3 – always used, 0 – never used. Al-Abdulqader *et al.* (2007): 5 – almost always, 1 – hardly ever. Imam *et al.* (2008): 5 – extremely important, 1 – not at all important. Wang *et al.* (2011): 5 – used the most, 1 – used the least, *was marked as financial statement analysis, but its purpose was allowing calculation of P/E ratios. Almujamed *et al.* (2012): 5 – always, 1 – never, **was formulated as profitability ratios.

All percentages are summarised as means, based on the midpoints of each frequency interval which are brought out above (see page 20).

It can be seen from the Table 3 that in earlier decades under observation the most popular appraisal techniques were P/E ratio and other various financial ratios. The usage of future dividend yield has been showing an upward trend. In the recent years, analysts' use of valuation models was dominated by the P/E ratio and DCF. The importance of DCF has been rising through the years, so it is becoming more and more important in valuation practice. It seems that P/E ratio and DCF are primary techniques and others are just supplementary measures to support the findings of primary ones. Furthermore, in the earlier years (the 1980s), respondents were given "various financial ratios" as one of the possible answers. But in the mid 2000s questionnaires and techniques became more sophisticated and therefore, such a broad term as "various financial ratios" was replaced by more specific indicators (e.g. return on equity, return on assets, debt/equity ratios, liquidity ratios, etc.).

There were also studies where the response options were quite different from most of the other surveys. For example, Vydržel and Soukupova (2012) found that in Czech Republic using transaction multiples was the most popular valuation approach, followed by DCF and market multiples, accounting for an acceptance rate of 91%, 89% and 73%, respectively. Among transaction multiples, transaction EBITDA was applied most frequently, followed by transaction sales multiple and EBIT multiple. Free cash flow to firm (FCFF) was the dominant model among DCF methodologies, but EVA models were not used at all.

One of the largest sample surveys was conducted by Pinto *et al.* (2015). Their final sample consisted of 1980 professional equity analyst members of CFA Institute from different geographic regions (Americas, Asia Pacific and Europe, Middle East, Africa). According to Pinto *et al.* (2015), largest proportion of respondents (92.8%) reported using market multiples (e.g. based on price-to-earnings, EV/EBITDA, or other multiples) in valuation. Ranking second and third, were present discounted value (78.8%) and asset-based approaches (e.g. based on book value, asset market values, or asset replacement costs) (61.4%). On the contrary, a real options approach was used quite infrequently (5%). Present discounted value approaches were considerably more popular in Asia Pacific and EMEA (Europe, Middle East, Africa) than in The Americas and asset-based approaches were more frequently used in Asia Pacific than in The Americas. For respondents who

used market multiples, the most popular ones were P/E ratio and enterprise value multiples. When a present value model was used, then overwhelming majority (86.8%) preferred free cash flow (FCF) approach. Respondents who used FCF applied it in about 80% of business valuation cases, while those using other techniques applied FCF only about half of the time. Pinto *et al.* (2015) concluded that analysts using a FCF approach were committed to it as a generally applicable tool.

Among venture capitalists, Manigart *et al.* (1997) found that in UK and France, the most used valuation techniques were valuation multiples while in Belgium and Netherlands the most used technique was DCF. Dividend yield basis was used rarely, despite being theoretically sound. The low popularity of this technique is explained by the fact that early stage companies seldom distribute dividends, so the approach is not applicable in this context. Wright *et al.* (2004) found that P/E based valuation techniques were generally the most popular valuation approaches, followed by DCF. On the contrary, asset based valuation techniques were the least popular valuation approaches. Hudson and Evans (2005) brought out that there were distinct preferences in valuation techniques within countries. For example, among Australian venture capitalists, the most important valuation technique used was the application of a range of scenarios. Sander and Kõomägi (2007) extended the discussion that the usage of valuation techniques was rather diverse among different countries. On the example of Estonian private equity and venture capitalists, Sander and Kõomägi (2007) showed that compared to Western Europe and America, valuation is done differently. When Western private equity and venture capitalists did not use cash flow-based techniques very often, then in Estonia it was used the most, but in simplified manner.

3.1.2. Differences in valuation approaches on developed and emerging markets

Several differences can be brought out between valuation practices in developed and emerging markets. First of all, Mohamad and Nassir (1997) found that beta analysis was used rarely in Malaysia and it was considered ineffective in emerging markets because of its high volatility, thin trading and informational inefficiency. Pereiro (2006) extended the discussion that traditional valuation techniques do not provide much guidance as to how they should be applied to emerging markets. Because these markets are small,

concentrated and exposed to manipulation, the existence of market efficiency is basically non-existent. Al-Abdulqader *et al.* (2007) also found that among Saudi investors, DCF was surprisingly awarded a very low mean score compared to the other fundamental analysis techniques. It implied that most Saudi investors do not follow finance texts and the theoretical recommendations given in them. Despite the differences between markets, Pereiro (2006) still demonstrated that in Argentina there was significant alignment with the US practices. DCF was used as a primary tool in valuation – techniques like NPV, IRR and simple payback being the most popular, respectively.

In addition, Tijjani *et al.* (2009) interviewed Nigerian investors and found that the main approach to business valuation employed was again fundamental analysis. The interviews also revealed that technical analysis was surprisingly popular among the respondents which is in accordance with above mentioned findings in emerging markets. Most of the interviewees (89%) used technical analysis to some extent although a majority of these users considered it secondary to fundamental analysis. This finding was slightly different from the survey results in developed countries where a much smaller percentage of respondents indicated that they used technical analysis. One reason for this high usage of technical analysis could be that the NSE is an emerging market which is not as efficient as those in developed countries such as the UK and the US; the analysis of trends might therefore be more appropriate in Nigeria. One respondent revealed that the main risks in the NSE related to inconsistency of government policies, labour problems and insider dealings. Political risk being a particular concern. Higher usage of technical analysis was also found by Almujaheed *et al.* (2012) among Kuwaiti investors and analysts. Similarly, in Nigeria the importance attached to technical analysis in Kuwait could be explained by the inefficiency of the Kuwait Stock Exchange (KSE). In addition, different risk factors like rumors, insider trading, and political risks might justify the use of risk analysis among respondents.

3.2. Sources of financial information

Analysts and practitioners use a lot of different sources of financial information, some of them to greater extent and some of them to less extent. According to Arnold and Moizer (1984), the six most important information sources were profit and loss account, balance

sheet, quarterly and half-yearly results, company personnel, source and application of funds statement and chairman's statement. Least popular information sources were companies house, trade journals, employee newsletters and value added statements. These results were backed up by Lovell-Greene *et al.* (1986) who additionally found that a qualified auditor's report belongs to the six most important information sources. Since more than half of these sources (e.g. profit and loss account, balance sheet, chairman's statement, qualified auditor's report) are all included in the annual report, it was considered the single most important source of information. Subsequently, several authors have also confirmed the importance of the annual report (Pike *et al.*, 1993; Olbert, 1994; Mohamad and Nassir, 1997; Fouche and van Rensburg, 1999; Saadouni and Simon, 2004; Clatworthy and Jones, 2008; Wang *et al.*, 2011; Almujaed *et al.*, 2012).

Furthermore, Glaum and Friedrich (2006) found that company personnel (representatives) was the most important information source, followed closely by financial statements. Analyst conferences and company visits were ranked third and fourth. Additionally, Brown *et al.* (2015) found that most analysts had contact with the CEO or CFO of the typical company they followed more than once per quarter. This private communication with management was rated as a very useful input to both their earnings forecasts and stock recommendations. So it seems that analysts preferred information sources that allowed personal contact and face-to-face interaction more than in the last century.

When looking at the sources of information used in emerging markets, Al-Abdulqader *et al.* (2007) found that respondents frequently used company quarterly reports as their main source of information; newspaper and company annual reports came second and third, respectively. Alike in developed markets, an annual report was considered one of the most important sources of information in emerging markets as well (Mohamad and Nassir, 1997; Fouche and van Rensburg, 1999; Saadouni and Simon, 2004; Wang *et al.*, 2011; Almujaed *et al.*, 2012). Contrary to developed markets, personal contact and face-to-face interaction were less common in emerging markets. According to Al-Abdulqader *et al.* (2007) and Almujaed *et al.* (2012), discussions with company staff were rarely undertaken by the different groups and thus it was ranked last. This result was very different from their UK and US counterparts. Communication with company

management was quite rare, because executives were usually unwilling to discuss their firm's performance with investors.

Among venture capitalists, somewhat different sources of information were used. According to Manigart *et al.* (1997) and Hudson and Evans (2005), the most important source of information was own due diligence report, overall coherence of business plan ranking second. The least used sources were trade journals and financial press. The only paper which is about overseas equity analysis was written by Clatworthy and Jones (2008). They showed that analysts and fund managers were not a homogeneous group. Practices and information sources differed depending on whether the company was based in the UK or overseas. The results indicated that in overseas analysis: preliminary statements, company visits, foreign analysts and macroeconomic information were all used more.

3.3. Valuation inputs and time horizons

When most of the surveys did not include questions about risk-free rate nor any valuation inputs, then from Pereiro (2006), Vydržel and Soukupova (2012) and Bancel and Mittoo (2014) we can get some insight. According to Vydržel and Soukupova (2012), in Czech Republic, half of the respondents favored Czech medium-term 10-year bonds. Quarter of the respondents favored short-term bills (under 1 year) and long-term 20-year bonds. In general, Czech government bonds were favored to foreign bonds which were only used by five participants. Three of them used 30-year-old German T-bonds or IRS rates and two of them used US long-term 10-year bonds. Pereiro (2006) found that in Argentina, favorable risk free rate varied among respondent groups. The most popular answer among corporations was 10-year T-bonds, among financial advisors and private equity funds it was 30-year T-bonds and among banks and insurance it was 5-10-year T-bonds.

Bancel and Mittoo (2014) found that in a variety of European countries, by far the most participants (78%) used bonds with a 10-year maturity. Only 8% used bonds with maturity greater than 10 years and 9% used a one-year T-bond. The popularity of a 10-year maturity bond could be explained by its high liquidity and the proximity of its time-horizon to long-term investment horizons. About two-thirds of respondents used the

country's sovereign bond, the remaining one-third employed a AAA country's sovereign bond rate as a proxy for the risk-free rate.

The length of time analysts forecast ahead was asked in eight different questionnaires. Bing (1971) found that the most popular time horizon to predict ahead was 1 year. So, at that time the prevailing short time horizon of practitioners was brought out quite clearly. Arnold and Moizer (1984) found that analysts forecast usually 18-24 months ahead – 22.1 months being the mean response. Similarly, in emerging markets, Mohamad and Nassir (1997) received a mean response of 26.8 months and Saadouni and Simon (2004) received a mean response of 21.3 months in Thailand and 25.3 months in Malaysia.

Al-Abdulqader *et al.* (2007) found that among Saudi investors the average forecasting period was only 7.8 months which is compared to developed markets analysts' a significantly shorter period of time. This may indicate a greater uncertainty about the future in Saudi Arabia. Respondents also felt that they did not have enough information to undertake forecasts for longer time periods, and the financial information released by companies was often unreliable. Furthermore, they suggested that most companies were not committed to their long-term plans for the future; therefore, any prediction was guesswork. The longest time to predict ahead was found by Vydržel and Soukupova (2012) whose respondents' average length of forecasting period was up to 5 years.

3.4. Unanswered research questions

At the beginning of the present paper, the author raised several research questions (see page 7). Unfortunately, some of these questions were not answered in the literature and some of them were discussed very briefly. For example, the author raised a question of where do analysts get valuation inputs from, but majority of surveys did not investigate this matter (with an exception of risk free rate). It would have been interesting and useful to know how do analysts calculate the cost of equity and from where do they get the necessary valuation inputs (e.g. company's beta, risk premium). Also, the literature does not describe how analysts project future cash flows nor other indicators needed and required.

Furthermore, the question about best value drivers and value predictors was also left unanswered. Several differences between valuation practices on developed and emerging markets appeared, but it was mostly unclear if analysts also make adjustments when operating on emerging markets. Only Pereiro (2006) and Kantšukov and Sander (2016) discussed this aspect in their work, while other authors who published their papers in emerging markets did not ask about adjustments. For example, Kantšukov and Sander (2016) were interested in whether tax related corrections and issues were considered, but most of the respondents did not make any adjustments. Therefore, there are still a number of topics and questions for future research that are uncovered in the existing literature.

CONCLUSIONS AND DISCUSSION

This review paper is the first study of surveys on practitioners' approach to business valuation which addresses several relevant questions and determines similarities and discrepancies in valuation practices by time and regions. Publications of valuation practitioners' surveys started gaining momentum in the mid-1980s when Arnold and Moizer (1984) published their first papers. Many authors later started following their example when publishing their own papers. Therefore, the largest amount of literature was published in the 2000s. Almost all of the used literature in this review paper has been published in scientific journals with two exceptions. From the systematic review, a conceptual scheme can be constructed (see Figure 4 below).

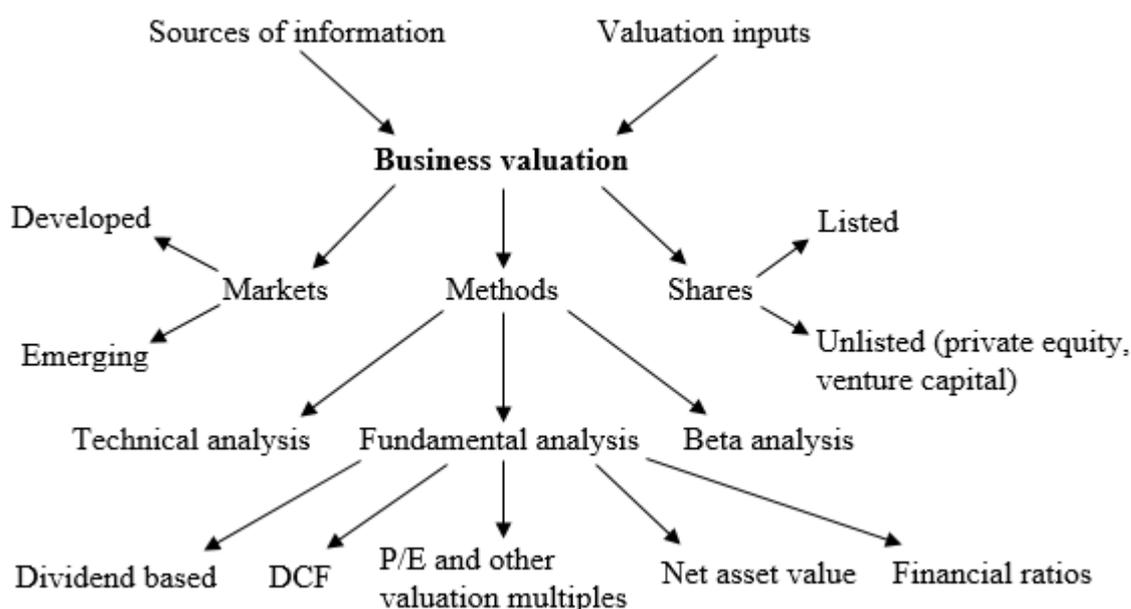


Figure 4. A synthesis of the results of the review (compiled by the author).

In order to evaluate businesses, one needs information about the business and valuation inputs for the evaluation model(s). The surveys were conducted globally – in developed markets as well as in emerging markets. The majority of the surveys were conducted

among analysts and practitioners who appraised listed companies, but there were also surveys conducted among venture capitalists and analysts who appraised private equity.

It can be brought out that the use of fundamental analysis dominated in every single survey where the question was asked. It was followed by technical analysis and beta analysis, respectively. When looking at the techniques considered in fundamental analysis and their frequency of use – P/E ratio and discounted cash flow models (especially FCF) prevailed. P/E ratio was the most popular technique in 13 surveys. It is also notable that even if it was not the most popular choice it was still among the top techniques. Discounted cash flow models were the most popular in three surveys (Pereiro, 2006; Glaum and Friedrich, 2006; Kantšukov and Sander, 2016) and the second most popular in five surveys. Appraisers started to pick up DCF as one of their main appraisal techniques in the 21st century. In the 20th century, DCF was not popular at all, being one of the least used techniques. Like DCF, various financial ratios were also the most popular in three surveys (Arnold *et al.*, 1984; Mohamad and Nassir, 1997; Saadouni and Simon, 2004). In general, valuation multiples have been popular regardless of time and geographical location. Other techniques like debt/equity ratio, future dividend yield, financial statement analysis, profitability ratios and EV/EBITDA also prevailed in some of the surveys.

When comparing developed markets to emerging markets, several differences emerged. Beta analysis was used rarely in emerging markets and technical analysis was used more often in emerging markets compared to developed markets. Analysts operating on emerging markets have to make adjustments because trading in these markets was also associated with higher risks, political risk being a particular concern. Some other risks were, for example, inconsistency of government policies, labour problems and insider dealings. Therefore, the financial information released by companies was often unreliable, and analysts can not undertake forecasts for longer time periods. Furthermore, most companies were not committed to their long-term plans and thus any prediction could be guesswork.

Looking at the information sources valuation practitioners use, company's annual report is the most vital source of information and it was considered most important in a total of 10 surveys. Balance sheet and profit and loss account were mentioned as particularly

essential parts of it. Additional to annual reports, quarterly and half-yearly results and communication/meetings with management were also considered the most important source of information in some of the surveys. Communication with management was considered the most important in three surveys (Pike *et al.*, 1993; Glaum and Friedrich, 2006; Brown *et al.*, 2015) and quarterly and half-yearly results were considered the most important in two surveys (Mohamad and Nassir, 1997; Al-Abdulqader *et al.*, 2007). When looking at surveys conducted among venture capitalists, the two most important sources of information are own due diligence report and overall coherence of business plan (Manigart *et al.*, 1997; Hudson and Evans, 2005).

In all of the surveys where risk free rate was examined, most of the respondents favored 10-year bonds. Short-term bills with maturity under one year and longer than 10-year bonds had also some popularity. Besides risk free rate, other valuation inputs were not discussed in the literature. The average length of time analysts forecast ahead is approximately two years which is relatively short. Only in one of the surveys, the time to predict ahead was up to five years.

The present review sheds the light on the fact that generally discounted cash flow-based approaches, despite being theoretically sound, are not used so often, although a notable shift in time can be observed. Valuation multiples are still popular among practitioners for obvious reasons. However, along with the question *What valuation techniques practitioners use?* the question *How do practitioners apply valuation methods?* is of greater significance. The author believes this is a good basis for future academic surveys to be conducted among practitioners.

REFERENCES

1. **Al-Abdulqader, K.A., Hannah, G. and Power, D.M.** (2007), "The appraisal of ordinary shares by Saudi investors", *Research in International Business and Finance*, 21(1), pp. 69-86.
2. **Almujamed, H.I., Fifield, S.G. and Power, D.M.** (2012), "Share Valuation Methods and Data Source-Based Accounting In An Emerging Stock Market: The Case of the Kuwaiti Stock Market", *The International Business & Economics Research Journal (Online)*, 11(7), p. 713.
3. **Arnold, J. and Moizer, P.** (1984), "A survey of the methods used by UK investment analysts to appraise investments in ordinary shares", *Accounting and Business Research*, 14(55), pp. 195-207.
4. **Arnold, J.A., Moizer, P. and Noreen, E.** (1984), "Investment appraisal methods of financial analysts: a comparative study of US and UK practices", *International Journal of Accounting*, 19(2), pp. 1-18.
5. **Bancel, F. and Mittoo, U.R.** (2014), "The gap between the theory and practice of corporate valuation: Survey of European experts", *Journal of Applied Corporate Finance*, 26(4), pp. 106-117.
6. **Barker, R.G.** (1999), "The role of dividends in valuation models used by analysts and fund managers", *European Accounting Review*, 8(2), pp. 195-218.
7. **Baumeister, R.F.** (2013), "Writing a literature review", *The Portable Mentor*, pp. 119-132.
8. **Berliner, R.W.** (1983), "Do analysts use inflation-adjusted information? Results of a survey", *Financial Analysts Journal*, 39(2), pp. 65-72.
9. **Bing, R.A.** (1971), "Survey of practitioners' stock evaluation methods", *Financial Analysts Journal*, 27(3), pp. 55-60.
10. **Block, S.B.** (1999), "A study of financial analysts: practice and theory", *Financial Analysts Journal*, 55(4), pp. 86-95.

11. **Boyd, T.** (1995), "Current valuation practice in Australia: A survey of valuers", *Journal of Property Valuation and Investment*, 13(3), pp. 59-69.
12. **Brounen, D., De Jong, A. and Koedijk, K.** (2004), "Corporate finance in Europe: Confronting theory with practice", *Financial management*, pp. 71-101.
13. **Brown, L.D., Call, A.C., Clement, M.B. and Sharp, N.Y.** (2015), "Inside the "black box" of sell-side financial analysts", *Journal of Accounting Research*, 53(1), pp. 1-47.
14. **Clatworthy, M. and Jones, M.J.** (2008), "Overseas equity analysis by UK analysts and fund managers", *The British Accounting Review*, 40(4), pp. 337-355.
15. **Damodaran, A.** (2007), "Valuation approaches and metrics: a survey of the theory and evidence", *Foundations and Trends® in Finance*, 1(8), pp. 693-784.
16. **de Oliveira, F.B. and Zotes, L.P.** (2018), "Valuation methodologies for business startups: a bibliographical study and survey", *Brazilian Journal of Operations & Production Management*, 15(1), pp. 96-111.
17. **Deloof, M., De Maeseneire, W. and Inghelbrecht, K.** (2009), "How do investment banks value initial public offerings (IPOs)?", *Journal of Business Finance & Accounting*, 36(1-2), pp. 130-160.
18. **Demirakos, E.G., Strong, N.C. and Walker, M.** (2004), "What valuation models do analysts use?", *Accounting horizons*, 18(4), pp. 221-240.
19. **Fouche, S. and Van Rensburg, P.** (1999), "A survey of the investment appraisal techniques used by South African unit trust portfolio managers", *Investment Analysts Journal*, 28(49), pp. 19-29.
20. **Glaum, M. and Friedrich, N.** (2006), "After the "bubble": valuation of telecommunications companies by financial analysts", *Journal of International Financial Management & Accounting*, 17(2), pp. 160-174.
21. **Graham, J.R. and Harvey, C.R.** (2001), "The theory and practice of corporate finance: Evidence from the field", *Journal of financial economics*, 60(2-3), pp. 187-243.
22. **Grant, M.J. and Booth, A.** (2009), "A typology of reviews: an analysis of 14 review types and associated methodologies", *Health Information & Libraries Journal*, 26(2), pp. 91-108.

23. **Harper, C.P.** and **Rose, L.C.** (1993), "Accuracy of appraisers and appraisal methods of closely held companies", *Entrepreneurship Theory and Practice*, 17(3), pp. 21-33.
24. **Hudson, E.** and **Evans, M.** (2005), "An international comparison of the valuation methods and techniques used by Australian VCs in the appraisal of new ventures", *Journal of Economic and Social Policy*, 10(1), p. 4.
25. **Imam, S., Barker, R.** and **Clubb, C.** (2008), "The use of valuation models by UK investment analysts", *European Accounting Review*, 17(3), pp. 503-535.
26. **Jalali, S.** and **Wohlin, C.** (2012), "Systematic literature studies: database searches vs. backward snowballing", *Proceedings of the ACM-IEEE international symposium on Empirical software engineering and measurement*, pp. 29-38.
27. **Johnson, F.P.** and **Switzer, R.V.** (2000), "Evaluating a Valuation Analyst's Methods for Determining the Value of a Closely Held Commercial Business in a Divorce Action", *American Journal of Family Law*, 14(3), pp. 155-163.
28. **Kantor, J.** and **Pike, R.** (1987), "The determinants of the value of unlisted shares: opinions of professional valuers in Canada", *Accounting and business research*, 17(66), pp. 109-115.
29. **Kantšukov, M.** and **Sander, P.** (2016), "Value in the eye of beholder: a survey of valuation practices of Estonian financial professionals", *Investment Management and Financial Innovations*, 13(2), pp. 157-172.
30. **Lovell-Greene, N.J., Affleck-Graves, J.F.** and **Money, A.H.** (1986), "A survey of investment appraisal methods used by financial analysts in South Africa", *Investment Analysts Journal*, 15(28), pp. 7-19.
31. **Manigart, S., Wright, M., Robbie, K., Desbrieres, P.** and **De Waele, K.** (1997), "Venture capitalists' appraisal of investment projects: an empirical European study", *Entrepreneurship Theory and Practice*, 21(4), pp. 29-43.
32. **Mohamad, S.** and **Nassir, A.M.** (1997), "A survey of methods used by Malaysian brokerage firm investment analysts to appraise investments in ordinary shares", *Pertanika Journal of Social Science and Humanities*, 5(2), p. 125.
33. **Moizer, P.** and **Arnold, J.** (1984), "Share appraisal by investment analysts— portfolio vs. non-portfolio managers", *Accounting and Business Research*, 14(56), pp. 341-348.

34. MSCI market classification. (2018), available at: <https://www.msci.com/market-classification> (accessed 28 March 2018).
35. **Ojalla, J.P.D.** (2011), "A survey of methods used to value commercial banks by practitioners in Kenya", A finance research project submitted in partial fulfillment of the requirements of masters of business administration (MBA) degree, of the University of Nairobi.
36. **Olbert, L.** (1994), "Stock valuation methods of financial analysts in a thin stock market in Sweden, with comparisons to the United Kingdom and the United States", *International Journal of Accounting*, 29(2), pp. 123-135.
37. **Oxman, A.D.** (1994), "Checklists for review articles", *BMJ: British Medical Journal*, 309(6955), pp. 648.
38. **Pereiro, L.E.** (2006), "The practice of investment valuation in emerging markets: Evidence from Argentina", *Journal of Multinational Financial Management*, 16(2), pp. 160-183.
39. **Pike, R.** (1996), "A longitudinal survey on capital budgeting practices", *Journal of Business Finance & Accounting*, 23(1), pp. 79-92.
40. **Pike, R., Meerjanssen, J. and Chadwick, L.** (1993), "The appraisal of ordinary shares by investment analysts in the UK and Germany", *Accounting and Business Research*, 23(92), pp. 489-499.
41. **Pike, R., Sharp, J. and Kantor, J.** (1988), "The Role of Accounting Information in Valuing Unlisted Shares", *Accounting and Business Research*, 18(71), pp. 249-255.
42. **Pinto, J.E., Robinson, T.R. and Stowe, J.D.** (2015), "Equity valuation: a survey of professional practice", *SSRN Electronic Journal*.
43. **Saadouni, B. and Simon, J.** (2004), "Methods used by Thai and Malaysian security analysts to appraise ordinary shares", *Asian Review of Accounting*, 12(2), pp. 25-56.
44. **Sander, P. and Kõomägi, M.** (2007), "Valuation of private companies by Estonian private equity and venture capitalists", *Baltic Journal of Management*, 2(1), pp. 6-19.
45. **Siddaway, A.** (2014), "What is a systematic literature review and how do I do one?", *University of Stirling*, (I), p. 1.

46. **Sugiharto, T., Inanga, E.L. and Sembel, R.** (2007), "A Survey of Investors' Current Perceptions and Valuation Approaches at Jakarta Stock Exchange", *International Research Journal of Finance and Economics*, 10.
47. **Szymański, P.** (2012), "What problems does business valuation practice encounter—survey", *Business Valuation Review*, 31(1), pp. 4-22.
48. S&P Global Equity Indices Monthly Update. (2017), available at: <https://us.spindices.com/documents/research/sp-global-equity-indices-monthly-update-201710.pdf> (accessed 28 March 2018).
49. **Tijjani, B., Fifield, S.G.M. and Power, D.M.** (2009), "The appraisal of equity investments by Nigerian investors", *Qualitative Research in Financial Markets*, 1(1), pp. 6-26.
50. **Trahan, E.A. and Gitman, L.J.** (1995), "Bridging the theory-practice gap in corporate finance: a survey of chief financial officers", *The Quarterly Review of Economics and Finance*, 35(1), pp. 73-87.
51. **Vydržel, K. and Soukupová, V.** (2012), "Empirical examination of valuation methods used in private equity practice in the Czech Republic", *The Journal of Private Equity*, pp. 83-99.
52. **Wang, J., Haslam, J. and Marston, C.** (2011), "The appraisal of ordinary shares by Chinese financial analysts", *Asian Review of Accounting*, 19(1), pp. 5-30.
53. **Wee, B. V. and Banister, D.** (2016), "How to write a literature review paper?", *Transport Reviews*, 36(2), pp. 278-288.
54. **Wright, M., Lockett, A., Pruthi, S., Manigart, S., Sapienza, H., Desbrieres, P. and Hommel, U.** (2004), "Venture capital investors, capital markets, valuation and information: US, Europe and Asia", *Journal of International Entrepreneurship*, 2(4), pp. 305-326.
55. **Xiao, Y. and Watson, M.** (2017), "Guidance on Conducting a Systematic Literature Review", *Journal of Planning Education and Research*, pp. 1-20.

APPENDICES

Appendix 1. Descriptive statistics of the reviewed literature.

Author(s) + year	Sample size	Sample	Study type	Location
Bing (1971)	34	Analysts, practitioners	Questionnaire based survey	USA
Arnold, Moizer (1984)	202	Analysts, practitioners	Unstructured interviews, questionnaire based survey	UK
Moizer, Arnold (1984)	202	Analysts, practitioners	Questionnaire based survey	UK
Arnold <i>et al.</i> (1984)	-	Analysts, practitioners	Questionnaire based survey	USA
Lovell-Greene <i>et al.</i> (1986)	96	Analysts, practitioners	Questionnaire based survey	South Africa
Kantor, Pike (1987)	267	Analysts, practitioners	Questionnaire based survey	Canada
Pike <i>et al.</i> (1988)	185	Unlisted share valuation reports	Estimation of regression model	Canada
Harper, Rose (1993)	258	Analysts, buyers and sellers	Questionnaire based survey	USA
Pike <i>et al.</i> (1993)	92/47	Analysts, practitioners	Questionnaire based survey	UK/ Germany
Olbert (1994)	273	Analysts, practitioners	Questionnaire based survey	Sweden
Boyd (1995)	135	Analysts, practitioners	Questionnaire based survey	Australia
Manigart <i>et al.</i> (1997)	66/32/24/ 14	Venture capitalists	Questionnaire based survey	UK/France/ Netherlands /Belgium
Mohamad, Nassir (1997)	27	Analysts, practitioners	Questionnaire based survey	Malaysia
Block (1999)	297	Analysts, practitioners	Questionnaire based survey	Global
Barker (1999)	42+32+70	Analysts, practitioners	Participant observation, survey, semi-structured interviews	UK
Fouche, van Rensburg (1999)	23	Portfolio managers	Questionnaire based survey	South Africa
Demirakos <i>et al.</i> (2004)	104	Analysts' reports	Structured content analysis	UK
Wright <i>et al.</i> (2004)	203/73/81	Venture capitalists	Questionnaire based survey	Europe/US/ Asia
Saadouni, Simon (2004)	191/75	Analysts, practitioners	Questionnaire based survey	Thailand/ Malaysia
Hudson, Evans (2005)	38/300/66 /32/38	Venture capitalists	Questionnaire based survey	Australia/ USA/UK/ France/ Belgium& Netherlands

Author(s) + year	Sample size	Sample	Study type	Location
Pereiro (2006)	55	Analysts, practitioners	Questionnaire based survey	Argentina
Glaum, Friedrich (2006)	25	Sell-side analysts	Semi-structured interviews	Germany/UK
Sugiharto <i>et al.</i> (2007)	32	Investors	Questionnaire based survey	Indonesia
Al-Abdulqader <i>et al.</i> (2007)	224	Investors, share mediators	Questionnaire based survey	Saudi Arabia
Sander, Kõomägi (2007)	5	Private equity, venture capitalists	Case study	Estonia
Clatworthy, Jones (2008)	380	Analysts, practitioners	Questionnaire based survey, semi-structured interviews	UK
Imam <i>et al.</i> (2008)	35+98	Analysts, equity research reports	Semi-structured interviews, content analysis	UK
Tijjani <i>et al.</i> (2009)	18	Analysts, practitioners, investors	Semi-structured interviews	Nigeria
Wang <i>et al.</i> (2011)	65	Analysts, practitioners	Questionnaire based survey	China
Ojalla (2011)	50	Analysts, practitioners	Questionnaire based survey	Kenya
Almujamed <i>et al.</i> (2012)	154	Analysts, practitioners, investors	Questionnaire based survey	Kuwait
Vydržel, Soukupova (2012)	45	Analysts, practitioners	Questionnaire based survey, personal interviews	Czech Republic
Bancel, Mittoo (2014)	365	Analysts, practitioners	Questionnaire based survey	variety of European countries
Brown <i>et al.</i> (2015)	365	Sell-side analysts	Questionnaire based survey, personal interviews	Global
Pinto <i>et al.</i> (2015)	1980	Analysts, practitioners	Questionnaire based survey	Americas, Asia Pacific, Europe, Middle East, Africa
Kantšukov, Sander (2016)	32	Analysts, practitioners	Questionnaire based survey	Estonia
de Oliveira, Zotes (2018)	40	Start-up analysts	Questionnaire based survey, personal interviews	Brazil

Source: compiled by the author.

Appendix 2. Summary of the reviewed literature.

Author(s) + year	Most used valuation method(s)	Most used valuation technique(s)	Most used source(s) of information	Time horizon
Bing (1971)	-	Multiplier appraisal techniques	-	1 year
Arnold, Moizer (1984)	Fundamental	P/E ratio, future dividend yield	Company annual report	Mean 22.1 months
Moizer, Arnold (1984)	-	-	Company annual report, quarterly and half-yearly results	-
Arnold <i>et al.</i> (1984)	Fundamental	Various financial ratios, P/E ratio	Company annual report	-
Lovell-Greene <i>et al.</i> (1986)	Fundamental	Future dividend yield, financial ratios	Company annual report	-
Kantor, Pike (1987)	Studied only the major information determinants			
Pike <i>et al.</i> (1988)	Studied only the role of accounting information			
Harper, Rose (1993)	Studied only the accuracy of appraisal			
Pike <i>et al.</i> (1993)	-	P/E ratio, net assets per share	Analysts' meetings in company, annual/interim report	-
Olbert (1994)	Fundamental	Debt/equity ratios, ROE, P/E ratio	Company annual report, interim results	-
Boyd (1995)	-	Yield approach, backed up by NPV	-	-
Manigart <i>et al.</i> (1997)	-	Multiples (P/E ratio, EBIT), DCF	Own due diligence report, overall coherence of business plan	-
Mohamad, Nassir (1997)	Fundamental, "gut feeling"	Various financial ratios, P/E ratio	Quarterly and half-yearly results, company annual report	Mean 26.8 months
Block (1999)	-	PV is not as widely used in practice as it is in theory	-	Only few forecast more than 2 years
Barker (1999)	-	P/E ratio, dividend yield	-	-
Fouche, van Rensburg (1999)	Fundamental	P/E ratio, financial ratios	Income statement, balance sheet	2-5 years
Demirakos <i>et al.</i> (2004)	-	Earnings multiples (P/E ratio, EV/EBITDA)	-	-

Author(s) + year	Most used valuation method(s)	Most used valuation technique(s)	Most used source(s) of information	Time horizon
Wright <i>et al.</i> (2004)	-	P/E ratio, DCF	Business plan data, interviews with entrepreneurs	-
Saadouni, Simon (2004)	Fundamental	Various financial ratios, P/E ratio	Company annual report, company visit	25/21 months
Hudson, Evans (2005)	-	Varies among different countries (EBIT, P/E, scenarios)	Own due diligence report, overall coherence of business plan	-
Pereiro (2006)	-	DCF	-	-
Glaum, Friedrich (2006)	Fundamental	DCF, multiples (especially P/E ratio)	Communication with management, financial statements	-
Sugiharto <i>et al.</i> (2007)	-	P/E ratio	-	-
Al-Abdulqader <i>et al.</i> (2007)	Fundamental	P/E ratio, profitability ratios	Company quarterly reports	Mean 7.8 months
Sander, Kõomägi (2007)	-	Simplified DCF	-	-
Clatworthy, Jones (2008)	-	-	Company annual report, communication with management	-
Imam <i>et al.</i> (2008)	-	P/E ratio, DCF	-	-
Tijjani <i>et al.</i> (2009)	Fundamental	P/E ratio	-	-
Wang <i>et al.</i> (2011)	Fundamental	Financial statement analysis	Company annual report, industry statistics	-
Ojalla (2011)	Fundamental	Fundamental, discounted dividends	-	-
Almujamed <i>et al.</i> (2012)	Fundamental	Profitability ratios, growth ratios	Company annual report	-
Vydržel, Soukupova (2012)	-	Transaction multiples (EBITDA), DCF	-	Up to 5 years
Bancel, Mittoo (2014)	-	Relative valuation (EV/EBITDA), DCF	-	-
Pinto <i>et al.</i> (2015)	-	Market multiples (P/E ratio)	-	-
Brown <i>et al.</i> (2015)	-	P/E ratio, cash flow model	Communication with management	-
Kantšukov, Sander (2016)	-	DCF, EV/EBITDA	-	-
de Oliveira, Zotes (2018)	-	DCF	-	-

Source: compiled by the author.

Lihtlitsents lõputöö reprodutseerimiseks ja lõputöö üldsusele kättesaadavaks tegemiseks

Mina, Eric Keskpaik,

1. annan Tartu Ülikoolile tasuta loa (lihtlitsentsi) enda loodud teose, “What do we know about practitioners’ approach to business valuation? A survey-based review”, mille juhendaja on Mark Kantšukov,

- 1.1.reprodutseerimiseks säilitamise ja üldsusele kättesaadavaks tegemise eesmärgil, sealhulgas digitaalarhiivi DSpace-is lisamise eesmärgil kuni autoriõiguse kehtivuse tähtaja lõppemiseni;
 - 1.2.üldsusele kättesaadavaks tegemiseks Tartu Ülikooli veebikeskkonna kaudu, sealhulgas digitaalarhiivi DSpace’i kaudu kuni autoriõiguse kehtivuse tähtaja lõppemiseni.
2. olen teadlik, et punktis 1 nimetatud õigused jäävad alles ka autorile.
 3. kinnitan, et lihtlitsentsi andmisega ei rikuta teiste isikute intellektuaalomandi ega isikuandmete kaitse seadusest tulenevaid õigusi.

Tartus, **24.05.2018**