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SCHOOL OF ECONOMICS AND BUSINESS

MASTER'S THESIS

**THE VALUE OF ADVISORS TO BUSINESS OWNERS IN THE
PROCESS OF SELLING AN EQUITY STAKE**

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AUTHORSHIP STATEMENT

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INTRODUCTION

Subject of the thesis

With the transition from a planned to a market economy in 1990s, many individuals in Slovenia have opted for free enterprise and start of own commercial activities. This became possible with the adoption of the Companies Act in 1988 (Companies Act, Official Gazette of the SFRY, no. 77/88, 40/89 - corrigendum, 40/89, 46/90, 61/90, Official Gazette of the Republic of Slovenia, no. 10/91, 55/92 - ZLPPC and 30 / 93 – ZGD, 1988), consequently the number of companies grew from year to year. In 2018, some thirty years later there were more than two hundred thousand companies registered in country of slightly more than two million inhabitants (Statistical Office Republic of Slovenia, 2019a). In the first stages of establishment, companies have been involved in privatization, organic growth, new (western) markets acquisition and leveraging (Kordež, 2015). Today, after reaching certain size, growth rate or favourable capital structure, companies are increasingly seeking strategic partnerships or changing the ownership structure by long-term owners entering into retirement and selling their equity stakes. Similar succession issues are common also for comparable economies in Central Europe (Schiefer, Überwimmer, Füreder, & Costa, 2019).

Nevertheless, many family-owned businesses, and similarly micro, small and mid-sized companies (SMEs) that represent 99.8% of companies in Slovenia (Statistical Office Republic of Slovenia, 2019b), so far had no experience in acquisitions or disposals as in many cases owners have retained a 100% ownership stake throughout companies' existence. Consequently, it is not expected that the management of SMEs or their owners are adequately aware of procedures in such sales processes and the skills for their efficient and successful execution. A lack of knowledge, experience or lack of rationality could lead the sellers to end up in a subordinate position compared to the buy-side. Theory suggest that such gap could be bridged by engagement of the sell-side financial advisor that contributes with M&A process know-how and advisory on transaction structure that improves bidder's competition and overall objectivity by organisation of a structured sale process.

The thesis attempts to analyse the impact financial advisors had in Slovenian M&A transactions, where their expected added value is derived from the assumption of structuring the transaction as structured sale processes. Further I wanted to analyse whether financial advisors add value in the aforementioned situation and what is the impact of transaction characteristics.

Purpose, goal and underlying hypothesis

The purpose of the thesis is to present the ways how companies are acquired and merged, to draw attention to potential pitfalls for owners of small and medium-sized companies that are before a takeover process, where usually the acquirer is larger and more experienced strategic or financial investor. At the same time, the purpose is to present a theoretical framework of the process that ensures maximization of the value of the company for the owner and the role of financial advisor in it.

The aim is to provide empirical support for the hypotheses that also in the Slovenian economy the engagement of financial advisors in the sale of the company's equity stakes

increases the acquisition value at which the transaction is carried out. By increasing the value, acquirers tend to reduce own positive synergistic effects and leave part of expected upside to the sellers in the process.

I assumed that due to unfamiliarity, business owners do not engage financial advisors in the sale of equity stake to a sufficient extent. From that I developed an underlying main hypothesis of the thesis:

“The transactions where sell-side financial advisors have been retained reached higher valuations from transactions without engagement of sell-side financial advisors.”

The main hypothesis has been tested with the value-added analysis of transactions with and without financial advisors acting on the sell-side, with obtained results segmentation identifying largest valuation contribution by each category.

Outline of the content

The thesis starts with theoretical background on mergers and acquisitions (M&A), description of relation between small and medium-sized companies as targets and financial investors as acquirers, structured sale process elements and the role sell-side financial advisors play in such a process and what is their purpose. Next, the empirical analysis follows with detailed hypotheses presentation, presentation of the sample and description of necessary qualitative adjustments undertaken, together with explanation of methodology used for obtaining the empirical findings. The results section is divided into three sub-sections, first presenting obtained valuation multiples across different segments of transactions' characteristics, namely inclusion of sell-side financial advisor, time period, profitability, indebtedness and target company's business sector, followed by the presentation of total outcome acquired targets faced when sell-side financial advisor was engaged vs. when it was not, lastly the characteristics were tested with regression models to show their explanatory power on the valuation multiples. The paper finishes with discussion indicating contributions, implications as well as limitations and further research proposition.

1 THEORETICAL BACKGROUND

Mergers and acquisitions (M&A) represent one way for companies to grow inorganically. I firstly elaborate the terms, different types, key stakeholders together with their roles and other important aspects important for our empirical analysis.

1.1 Mergers vs. acquisitions

There are several different classifications of M&A. To understand them correctly, first we need to distinguish between terms acquisitions and mergers (Lahovnik, 2013):

- (1) Acquisitions are transactions where the acquirer (a company acquiring another company) purchases a stake in the target (a company that is acquired by another company). In order to classify the transaction as a merger the stake acquired has to reach certain threshold that grants the acquirer a controlling stake in the voting power. Usually, such threshold is set at one-third or one-fourth of the equity stake in the target.

(2) Mergers are transactions where two or more companies combine into one and the companies merging cease to exist as independent entities. Based on Slovenian Companies Act (Companies Act-1, Official Gazette of RS, Nos. 65/09 - official consolidated text, 33/11 , 91/11 , 32/12 , 57/12 , 44/13 - odl. US, 82/13 , 55/15 , 15/17 and 22/19 - ZPosS, 2006) two or more companies can be merged in the following way:

- i) Merger by absorption, where all of the assets and liabilities of the merging companies (the transferors) are transferred onto another existing company (the transferee). The transferors cease to exist after the transaction.
- ii) Merger by formation of a new company, where all of the assets and liabilities of the merging companies are transferred onto a newly formed company (the transferee). The transferors cease to exist after the transaction.

In both cases initial owners of the transferors are compensated by either a share of the existing or newly issued capital in the transferee (existing or newly formed companies that are legal successors). Alternatively based on Slovene legislation also a cash payment of up to one-tenth of the nominal value of newly issued capital can be offered to the initial owners of the transferors (the rest has to be in share capital).

In case of acquisition, target's initial owners receive a cash compensation for their equity stakes, while in case of mergers the compensation for the transferor owners is equity stake in the successor company. If the compensation is a mixture of both, such offer is characterised as cash and equity consideration.

Despite both merger and acquisition terms are commonly used quite interchangeably, there is a lot more dissimilarities between them, rather than just the matter of selecting the payment option for the same outcome. By definition it is different for the seller if he or she receives cash vs. equity stake in the company, both in terms of expected return and risks associated with them. Also, there can be a difference in size of the compensation.

When the acquirer presents a take-over offer to the selling shareholders, in a cash consideration he or she outlines the desired acquisition stake (take-over success threshold) and acquisition price per share (take-over price). In this case the acquirer bears all the risk that synergies expected from the transaction will not materialise, also it is entitled to all synergies expected from the deal. On the contrary in equity consideration acquirer will not outline the acquisition price per share, but rather the equity ratio, i.e. how many acquirer's (new) shares will be offered per one share of the target. If the ratio is calculated converting the acquisition price with synergies expectations embedded into it, it could lead to a better outcome for the sellers, as they will on top of the acquisition price obtain also part of the transaction synergies as the new shareholders of post-transaction entity. It is also of the essence, if equity ratio outlines the number of issued acquirer shares to be given to the seller or the value of acquirer shares issued. Value of acquirer shares has similar structure to the cash consideration, i.e. the acquisition price is known, and acquirer bears all the risk before the closing of the transaction – if acquirer share price drops before the merger, they will have to issue more shares and the equity stake of target's shareholders in post-transaction entity will be higher. In contrast, the number of acquirer shares issued could give different pricing depending on the time of the hand-over, thus the risk is born by the seller. Considering all

these aspects one could ask “who is acquiring who in the equity consideration?” It may become trickier determining who the acquirer and the target are, together with the subject of the valuation, especially if merged companies are of somewhat similar size (Rappaport & Sirower, 1999).

With M&A activity in full swing in 1980s in USA it is interesting noticing that large part of the transactions were cash considerations, i.e. in 1988 at the peak of the cycle there were only 2% of large deals paid for in equity. In the following ten years, this has changed significantly with ca. 50% of deals financed with equity in 1998 (Rappaport & Sirower, 1999). Similarly, based on database used in empirical part describing Slovenian environment between 2000 and 2019 with disclosed considerations there only two deals financed with equity (1.9%) and one deal with mixed equity and cash consideration (0.9%). Such shift from cash to equity financed deals does not seem applicable for Slovenia in the examined period (Merger Market, 2020a). Probably the situation in Slovenia could to a large extent be explained by less developed domestic financial markets, small size of the economy and companies. For more on the database sample please see section 2.2.

Alternatively, instead of acquiring a target the acquirer can purchase part or all of target's assets. In this case such transaction is characterised as acquisition by asset purchase (Lahovnik, 2013). Although it is common for companies to sell part of their assets to another company, it is less common for them to sell all their assets to one buyer and in practice liquidate its operations. In the empirical analysis I faced limited transactions that I could characterise as solely asset purchases, however there were instances where acquisition of an entity was accompanied by additional asset purchase (e.g. Savatech d.o.o. transaction in 2012) (Merger Market, 2020a). For more on this please see section 2.3.

1.2 Types of mergers and acquisitions by acquirer – target relationship

One can also examine mergers and acquisitions by type of relationship between acquirer and target. In that way I define the following activities (Lahovnik, 2013):

- (1) Horizontal M&A activity, when companies engaged are in the same sector and are competitors in part or all the activities. The rationale for merger arrives from exploitation of economies of scale, usually in areas of production, procurement, marketing, market share acquisition, etc. Synergies from such mergers can impact all functions in the company from research and development, support functions, human resources, administration etc. If companies are significant in size, the approval from competent regulatory bodies will be crucial and there is a risk that the transaction will not be permitted to materialise.
- (2) Vertical M&A activity, when companies engaged are connected in the value chain, either within or outside the same sector. Merger happens between two direct links in the value chain or in less obvious indirect connection (skipping some links in the chain), however if the target is in the same position as acquirer, it will be categorized as horizontal merger. Usually, one company is already cooperating with another either as a supplier, buyer, producer etc. The rationale arrives from possibilities in product diversification and economies of scope, improvement of market position by securing the know-how, access to distribution channels, market information, exclusive production and even disabling

other competitors from operating under favourable terms. In Slovenia such mergers were least common in the period from 1990s and 2010s. Instead of equity connections, companies were more active in formation of strategic partnerships, together with less importance of vertical integration due to informational and technical advancement that enabled new innovative business models. Companies tend to outsource activities that are basic and do not add much added value to other global subcontractor, whilst focusing on core strategically important activities.

- (3) Concentric M&A activity, when companies are connected with the fundamental technology, markets or processes. M&A happens in order to jointly develop the market for mutual benefits, to develop needed technology or to be able to offer new array of diversification in product range. Rationale lays in cost reduction and new revenues arising from such connection. Companies can have products based on the same technologies, however they are not substitutes but rather complementary products, meaning they go hand in hand (e.g. mobile phones and operating systems). They are a way of reducing risk in leveraging innovation, available technology, market knowledge and joint know-how to tackle segments that were inaccessible to them before (Luenendonk, 2015). Such transactions included Google's acquisition of Motorola Mobility in 2011, Cisco's acquisition of NDS in 2011, Microsoft's acquisition of Skype in 2012 etc.
- (4) Conglomerate M&A activity, when companies engaged are not in the same sector, also the acquirer does not have any technological or production related connections with the target. Rationale for transaction lays in reduction of risks for the acquirer, by investing in a new sector a diversification of cash flows is reached and returns become more stable. Thus, cost of equity of the acquirer ought to decrease, pushing its value higher. On the other hand, there are synergies from unified administration, group level support functions and often stronger financial position of the acquirer. Given the lack of know-how in new fields, there is also a question of efficiency, as it might have been higher in case of horizontal, vertical or even concentric merger. Conglomerates represent a corporate entity for risk diversification and are particularly suitable for individual or family owners where almost all family wealth is bound in them and needs to be diversified. They are less preferred by external smaller shareholders, as they can even better diversify their portfolios on capital markets.

In the scope of the thesis, I will focus on both mergers and acquisitions, regardless of cash or equity financing and all types of M&A activity based on acquirer – target relationship.

1.3 Small and medium-sized family companies in acquisition by financial investors

Beforementioned M&A activity to large extent applies to strategic investors, namely companies that are target's competitors, suppliers/buyers, operate in similar technological field or are connected with them for some externally unknown, usually diversification reasons. There is also one type of investors that is engaged in all M&A activities regardless of the type. These are so called financial investors, either private equity funds, venture capital funds or growth equity funds. In the scope of the thesis, I will focus primarily on private equity funds (PE) that acquire majority stakes in companies, hold them for several years (e.g.

up to ten), meanwhile reorganise them, improve efficiency, profitability and together with financial leverage engaged at the acquisition, could make large equity returns when reselling them later on. This type of an investor is perceived as most financially knowledgeable, able of acquiring necessary debt financing for deals and possess vast experience in mergers and acquisitions, due to acquisitions or sales of the portfolio companies on a regular basis (Zeisberger, Prah, & White, 2017).

It is clear there are some gaps between financial investors that would engage in acquisition of a small or medium sized enterprise (SME), where the latter might not have experienced M&A activity prior the sale of themselves. In a study involving Australian family businesses (Seet, Graves, Hadji, Schnackenberg, & Gustafson, 2010), of which most were SMEs, scholars analysed a pending problem of baby-boomers retiring, which will inflict sales or closures of many family businesses, creating an opportunity for PE funds to provide the needed liquidity in family business ownership restructuring deals. The study provided evidence of finance gaps, knowledge gaps and empathy gaps between owners of small or medium sized family-owned enterprises (SMFEs), their professional advisors and PE funds as investors:

- (1) Financing gap: SMFEs operate differently than commercialized non-family businesses when it comes to acquiring external financing sources. They tend to follow a pecking order, getting financial investors' equity financing only in last result scenarios and rather finance their operations from subsidies, family and friends' debt and retained earnings (Myers & Majluf, 1984; Poutziouris, 2001). Thus, they operate with less financial means than possible, which leads to a financing gap between them and rational businesses. The scholars found that the financing gap was dependent on the size of the PE fund, if funds were large, it was less probable, they would invest into SMFEs. Main reasons being target's inadequate size and lower level of professionalism for family-run businesses which would increase transaction costs (more expensive due diligence). Similarly, SMFEs saw reluctance for PE involvement and also the advisors hired by SMFEs proved to increase transaction costs, due to their lack of M&A experience (Seet, Graves, Hadji, Schnackenberg, & Gustafson, 2010).
- (2) Knowledge gap: there is general scarcity of understanding of PE industry by SMFEs, both from PE activities, financing structures used and their investment criteria. The gap develops even further when SMFEs interact with PE funds and lose confidence in sharing financing details with PEs, or external parties performing due diligence. The research found knowledge gap is more present with smaller SMFEs, while larger companies and the ones more active within business associations are more aware of PE as a financing option and of PE process, however their knowledge remains limited. Often SMFEs did not know what their companies were worth. Similarly, advisors to family companies lacked experience dealing with PE deals and lacked knowledge on investment process, their knowledge was correlated with the size of the advisory firm. Also, PE funds lacked the knowledge of family business dynamics, which was negatively correlated with size of the business (Seet, Graves, Hadji, Schnackenberg, & Gustafson, 2010).
- (3) Empathy gap: An unlikeness from family business owners towards finance institutions, especially PE funds has been found in some studies (Upton & Petty, 2000; Gallo &

Vilaseca, 1996). Research from Seet et al. (2010) found there are different goals pursued by each party, while business owners tend to follow their own, often hands-on approaches and pursue more long-term goals, PE funds were looking to maximise companies' potential as quickly as possible. SMFEs were also less transparent with PEs, that had return on investment constrains in mind and needed to control the development. With every argument, the empathy gap increases. Professional advisors to family business owners were reluctant of losing clients, they shared the lack of trust in PEs. As scholars have found, empathy gap is strongly connected with the knowledge gap. If each party is more knowledgeable of one another and their objectives, the empathy gap decreases.

As suggested by the research, one way of closing these gaps would be to engage professional advisors that are aware of and can help on dealing with complex transactions. On the contrary engagement of professional advisors not knowledgeable of M&A transactions even increases these gaps (Seet, Graves, Hadji, Schnackenberg, & Gustafson, 2010)!

Furthermore, in line with the existence of before mentioned gaps, the premiums paid for family businesses tend to be lower than for non-family firms. The reason lays in the way outside investors look at family involvement at the firm (Miller, Le Breton-Miller, & Scholnick, 2008). Counterintuitively many studies suggest family firms tend to outperform non-family ones in the long run (Anderson & Reeb, 2003; Sharma, 2004). This happens due to special care family puts into managing and steering the company – called stewardship or by stewardship perspective – either family looks after employees, customers or is more cautious, more engaged and puts extra effort in running the company for future generations. Alternatively, family run companies can be categorised as less ambitious, less innovative, and less efficient, they can even be run by less competent future generation family members that make organisation non-rational, thus they could be seen as stagnating or seen by stagnation perspective (Miller, Le Breton-Miller, & Scholnick, 2008). As scholars have discovered (Granata & Chirico, 2010), investors do not look at family companies with stewardship perspective but rather with stagnation perspective, valuing them at lower valuations than non-family run peers, that is at 16% lower EV/EBITDA¹ multiple on average across the sample. Also, investors did not see any significant value in retaining family members in the company post-acquisition.

Similar study was published four years later (Ahlers, Hack, & Kellermans, 2014), which challenged the aforementioned results. Instead of valuing the premiums using multiples, it used real options. Real options could best be described as “the right to make a particular business decision, such as capital investment, after new information may be learned” (Berk & De Marzo, 2017, p. 826). Contrary to financial options, real options are not traded in competitive markets, nor are their underlying assets (e.g. underlying asset could be investment into research or development) (Berk & De Marzo, 2017). The new study depicted valuation of family businesses as the result of three sets of real options: (1) real options connected with realisation of firm potential that could not be realised before family leaves the firm, (2) real options connected with loss of economic value under new ownership because of family ownership departure, and (3) real options from mitigation measures, i.e.

¹ EV/EBITDA – EV relates to enterprise value i.e. value of the company, calculated as equity value plus net debt; EBITDA relates to earnings before interest, tax, depreciation and amortisation – otherwise widely used metric that is considered as a good proxy for cash flow of a company.

the degree of new owner being able to secure positive factors of family ownership also after the acquisition. The valuation discount in this case would be offered for family firms that have (1) < (2), meaning the real options from new business realisations are lower from loss of economic value granted by inclusion of family in ownership. In other words, PE funds will value higher businesses that are less negatively impacted if family leaves the company, on the contrary valuation discount will be applied to companies where strong family involvement is needed and/or acquirer fails to recognize real options from new business realisation without family ownership (Ahlers, Hack, & Kellermans, 2014).

Additional case resulting in a sale of a company at a discount appears when owners that are also managers of the company (owner-managers) have high empathy towards the company. Research based on an extensive sample of Swiss SMEs (Kammerlander, 2016) showed existence of emotional-pricing component that led to willingness to apply discount to valuation of a company they were selling. This component was based on (1) factors connected with the familiarity between the seller and the acquirer, (2) perceived company performance in the future and (3) the owner-manager's managerial tenure within the firm. Illustratively, as the sellers decided to sell the company to more familiar acquirer (e.g. sale to family members instead of sale to another company), or they had concerns about company's future performance, together with their reluctance of putting the firm's future at risk, lower was discount they accepted. Also, there was positive correlation between the length of owner-manager's tenure at the firm and the lower valuation they accepted. Arguably such events occur due to seller's fear of non-financial loss connected with their exit from the firm. Therefore, by decreasing the price expectations they ensure enough contenders to better steer future performance and ensure certain role also for themselves as past owners (e.g. intangible role enabling future influence and access to company information post-sale).

Interestingly lower valuation thus, not only results from the adverse company perception by the acquirer (Granata & Chirico, 2010) but also from the emotional pricing discount accepted by the seller. While important part of price determination falls on negotiation, research showed that large part can rather be attributed to non-economic emotional pricing component. Additionally, it shows the transaction price maximisation is not the top priority for the owner-manager entrepreneurs, which causes the irrationality and loss of value on their side (Kammerlander, 2016).

Moreover, it is not only the perception of financial investor nor the seller's perception of the target determining the transaction outcome, but also bargaining power between acquirer and the sellers. The bargaining power is a result of three main aspects (Ahlers, Hack, Kellermans, & Wright, 2016): (1) bidder competition in the process, (2) PE expertise advantage and (3) seller's time pressure. Higher bidder competition in the process leads to stronger perceived bargaining position of the seller, who will also leave less privileges to bidders in negotiation, if their number and quality is abundant (Fisher & Ury, 1981). Similarly, the PE funds tend to be more experienced and familiar with transaction processes, which grants them higher bargaining position in negotiations (Scholes, Westhead, & Burrows, 2008). However, not all forms of expertise are equally beneficial. As scholars have found (Ahlers, Hack, Kellermans, & Wright, 2016) only size specialisation empowers PEs in negotiation, mainly because it enables PEs to have a good overview of similar sized targets that are substitute targets for a particular transaction regardless of the sector. Interestingly

this applies for PEs of all sizes (either small or large), as long as they build expertise in their size fields, which gives them the knowledge of key risk factors and value creation opportunities, together with faster due diligence execution. Lastly, in case sellers are in time pressure to rush the sale, the bargaining position of PE acquirers will also be higher (Ahlers, Hack, Kellermanns, & Wright, 2016).

Furthermore, PE's bargaining power tends to be even higher when the sellers are family businesses. Type of the seller, especially between family business and non-family business is important, as it affects two out of three aforementioned aspects. When family business acts as a seller it has higher expertise gap with PE, which PE can act upon. Additionally, it was shown that family businesses as sellers are negatively impacted by time pressure, which they lack facing and thus give more time to PEs for deal execution, which in turn improves bargaining position of the latter. In regards to aspect of bidder competition, it remains somewhat unchanged regardless of family or non-family type of sellers (Michel, Ahlers, Hack, & Kellermanns, 2018). The effect is amplified in involvement of more complex family business teams. Research (Michel, Ahlers, Hack, & Kellermanns, 2018) suggests that more team complexity in family businesses decreases bargaining power on the sell-side in respect to competitive process, as there are more distractions, internal conflicts and opinion exchanges in family's management team (Ensley, Pearson, & Amason, 2002). Not surprisingly, this also enables PE expertise advantage to come more to the fore, while seller's time pressure remains unaffected. Finally, the difference in PE funds' bargaining power when negotiating with family business or non-family business can to large extent be attributed to family's socioemotional wealth considerations that make family business vulnerable to PE's investing at lower premium (Michel, Ahlers, Hack, & Kellermanns, 2018). Thus, it is of the essence for family business owners to be aware of their bargaining power coming from bidder competition in the process and no rush sale pressures (while also not extensively extending transaction timeline, which can be of preference by PEs), and on the contrary be aware of and mitigate potential acquirer's expertise bargaining advantages.

1.4 Structured sale process as an assurance for enterprise value maximisation

In M&A processes where the subject of acquisition is the whole company, or at least the majority stake, the value of the transaction is usually reported as enterprise value (Merger Market, 2020a). Enterprise value is the value of business regardless of its financing structure (i.e. sources of funds), in other words in is: »[t]he total market value of a firm's equity and debt, less the value of its cash and marketable securities.« (Berk & De Marzo, 2017, p. 1117). Usually advisors in M&A transactions strive for maximisation of enterprise value as this also drives the seller's equity value upwards (i.e. having higher enterprise value, whilst retaining the same value of net debt, increases equity value). Of course, there are also other criteria rather than price considered, especially when sellers are state agencies or owned sellers. Generally, they will consider acquirer's reputation, also nationality, scale of operations, target's beneficial synergies (i.e. new technology, know-how), future employment terms and levels etc. (Clark, 2005a). However, as all additional factors nevertheless come into play when deciding on whom to sell the equity stake, it is the job of M&A advisors to, among facilitating favourable outcome of other elements of the offer, mainly try to maximise transaction value as an objective measure.

Once again, in studies described in the previous segment there were many disadvantages of the sellers of the company – from financing, knowledge and empathy gap (Seet, Graves, Hadji, Schnackenberg, & Gustafson, 2010), demeaning way outside investors look at family companies that is with stagnation perspective (Miller, Le Breton-Miller, & Scholnick, 2008; Granata & Chirico, 2010), valuation discount application when family involvement is closely tied with business performance (Ahlers, Hack, & Kellermanns, 2014; Ahlers, Hack, Kellermanns, & Wright, 2016), when past owners have high empathy towards target company willing to sell it at a discount (Kammerlander, 2016; Granata & Chirico, 2010), to lower bargaining power when dealing with financial investors (Michel, Ahlers, Hack, & Kellermanns, 2018) and last but no least immense lack of rationality (Kammerlander, 2016). As explained earlier, to avoid equity loss of the sellers, it is important to mitigate their disadvantages while at the same time increasing the level of their rational behaviour (Clark, 2005a).

What improves rationality and drives the value upwards? In practice this is done by a structured sale process (Clark, 2005a). It has been shown that success of M&A process varies based on several factors such as (1) country specific challenges (i.e. country specific risk, infrastructure, legal system, market size, capital markets development, accounting rules, natural resources, labour costs and culture); (2) industry specific characteristics (i.e. technological intensity, advertising needs, sales organisation) and (3) company specific structure and strategy (competences and resources available, past experience etc.). Nevertheless, the successful M&A process should aim at satisfying strategic objectives of the company and create value post acquisition (Caiazza & Volpe, 2015). Structured sale process acts as a template subject to situation specific tailoring, it may be the best solution in some scenarios, however might be sub-optimal choice for other occasions. In practice it is important to be aware of its elements and the alternatives so the structure that maximise (seller's) interests can be applied.

When deciding on selling a majority stake in a company² owners have several options: either they sell the stake in (1) direct negotiations or they organise a (2) sale auction, which can take form of (2i) single-phase auction, (2ii) two-phase auction or (2iii) sealed bids auction. Regardless of the form, the sale must be completed in a way to show that the best value was obtained, the process was not corrupt and that the deal was signed with the party with the best offer. Each form has its specifics and not one is universally applicable for all transactions. There are, however, several characteristics typical for each form, each with advantages and disadvantages (Clark, 2005a):

- (1) Direct negotiations: in this method usually the owners or management thinks of potential acquirers and then the managing director or chairman invites limited number of them to discussions. Usually, potential acquirers come from the ranks of their competitors, suppliers, customers. Then confidential discussions begin, due diligence activity is conducted at some time during discussion agreed by both parties. The advantage is there is less risk of information leakage, as each party tends to benefit from retaining the confidentiality, also there is less parties involved and each is more liable for own actions. On the other hand, such process does not maximise the competition, thus the best value

² Assuming that company is not listed on the stock exchange, or in case listed, the stake on sale is too significant for normal daily trading volumes of that stock and would cause price disturbance or even lack of market liquidity to execute such sale.

is unlikely to be retrieved. Even more so, the acquirer tends to be motivated to offer low price, as it is the only party participating and can always correct it. Such negotiations usually do not follow seller's timeline and can quickly drag for a long time, and eventually not even materialise as the negotiation advantage is by default on the buy-side.

- (2) Auctions: in principle this method tries to create competitive bidder environment by involving larger number of participants. Usually, they are well pre-defined in process documentation and inflict participants to follow the rules. In that way processes are objective and transparent and follow the interests of the seller or target. There tend to be a pre-defined timeline and actions each participant has to conduct to be qualified and considered. Based on the number of different phases in an auction there are 3 common types of auctions:
- i) Single-phase auction: in this process bidders are from the outset invited to conduct due diligence and submit a binding offer. Upon reviewing the received binding offers sellers decide whom to invite in the exclusive negotiation, which can result in signed sale and purchase agreement. Such processes bring the advantage over direct negotiations, as they bring-in more competitiveness amongst the bidders. They are suitable for transactions with rather short time availability. Major disadvantages are that target has to disclose many non-public information at the very beginning of the process, when there is lack of understanding which of the bidders is truly interested in submitting quality offer. It is also not practical from the operational perspective as due diligence coordination and preparation of the requested data by the target gets rather difficult and time consuming for more than four or five bidders. Also, maximisation of price is not necessarily obtained, as the sellers for the aforementioned reasons try to limit the number of participants in the process and therefore potentially not include some candidates that could offer outlier valuations.
 - ii) Two-phase auction: in contrast to the single-phase auction, this process starts with the preliminary screening of the bidders that are approached with short outline of the opportunity with basic information (e.g. Teaser document) that acts as an invitation for bidders to join the process. In case of interest, they need to sign confidentiality agreements that prohibit them to disclose non-public information received from the target. Such information is usually provided in an extensive document (e.g. Information Memorandum) which presents the opportunity in more detail combining public and non-public data. In the next step interested investors submit an indicative offer with indication of their price, which is the basis for their shortlisting and invitation to the bidding phase of the process. At this point the process unravels similarly as single-phase auction where due diligence is conducted by shortlisted bidders (e.g. four to five participants) who are invited to submit a binding offer. The best bidder is then selected for exclusive negotiations. Two-phase auctions are the most popular in practice as they maximise the competition amongst bidders that leads to maximisation of offered price. By targeting large audience, it also improves chances of attracting potential outliers with highest valuations. On the other hand, such processes could be costly due to more or less needed engagement of professional advisors that provide know-how and resource support and could also be

lengthy, for their duration typically takes from nine to twelve months. Giving the reach out to many parties, the full confidentiality could not be sustained, however the confidentiality agreements preserve it at a limited level.

- iii) Sealed bids auction: this process envisages submission of offers with the price in sealed envelopes that are later all opened at the same time in front of public or bidder representatives. In that way the auction winner is immediately known to all parties. Such process is suitable for transactions with relatively short time span, where there are many bidders and expected offered prices deviations are not significant. Also, it is used in processes where risk of post-bid corruption is higher, as the seller can easily obtain and document the submitted bids. In a more confidential process, it is less preferred as some bidders refrain to be disclosed or there are other elements rather than price that are of higher importance to the seller. Nevertheless, elements of such auctions can be put in place also in the types of auctions described beforehand.

Structured sale process consists of many carefully determined steps, developed through practice, which are commonly applied by M&A advisors in transactions. Given its broad recognition and most common usage, I will focus on standard two-phase auction. In practice this process serves as a template which is adjusted for transaction specific circumstances: from time availability, industry of the target, owners of the target (e.g. government vs. private owners), who are potentially interested parties etc. (Clark, 2005a).

General steps in structured two-phase process from sell-side perspective include (Clark, 2005a; Clark, 2005b; Samojlik, 2005):

- (1) Strategy development and preliminary screening
- (2) Bidders receive information package containing both public and some non-public data
- (3) Expression of interest with indicative purchase price
- (4) Shortlisting of small number of bidders (e.g. 3-5)
- (5) Due diligence conducted by the bidders
- (6) Final binding bids
- (7) Exclusivity for negotiations with preferred bidder
- (8) Signing of the sale and purchase agreement when consensus is reached
- (9) Closing of the transaction when all regulatory approvals and condition precedents outlined in sale and purchase agreement are resolved

There are some differences when looking from the acquisition perspective. In that case the goal is to diverge from structured sale process and rather engage in one-on-one negotiations with less bidder competition and bargaining advantage of the sell-side. The acquirers tend to conduct the following steps (Corporate Finance Institute, 2017):

- (1) Development of acquisition strategy (determining the goals of acquisition)
- (2) Setting the M&A search criteria based on metrics (e.g. financial KPI, geography, segment coverage)
- (3) Searching for potential acquisition targets
- (4) Acquisition planning (initiating contact and gathering intel)
- (5) Beginning of acquisition planning
- (6) Valuation analysis
- (7) Negotiations with target's owners

- (8) M&A due diligence
- (9) Sale and purchase agreement
- (10) Financing strategy execution
- (11) Closing of the acquisition
- (12) Integration of target to the acquirer

However, in the scope of this thesis the focus is on standard two-phase auction as seen from the sell-side.

1.5 Role of financial advisors in structured sale-process

1.5.1 Financial advisors in M&A processes

As mentioned, to settle the existing gaps in transaction between SMFE as a seller and PE as the acquirer, engagement of professional advisor is recommended, as long the advisor possess the qualities which decrease such gaps (Seet, Graves, Hadji, Schnackenberg, & Gustafson, 2010). Usually, the advisors engaged in mergers and acquisitions, also seen in the analysed sample in my case (Merger Market, 2020a), are: investment banks (both as lenders and M&A advisors), boutique M&A advisors, accountancy firms, brokerage advisors, public relations advisors, legal advisors, tax advisors, other technical / expert advisors etc.

In the scope of this paper focus is on M&A advisors, which will in general be categorised as parties that “utilize their information gathering expertise to ascertain the reservation price of the merger counterparty, the potential for synergistic gains, as well as the risks of the transaction.” (Allen, Jagtiani, Peristiani, & Saunders, 2004, p. 198). For avoidance of doubt, I will acknowledge an M&A advisor (or financial advisor) as the party that overlooks the M&A process, advises either on buy- or sell-side in the process and is engaged in coordination with the target and acquirer (to the level and relationship direction connected with its role) and potential other advisors mentioned above.

Both commercial and investment banks engage in M&A transactions in two prevailing ways, as lenders and/or advisors. Bank can act solely in either function, but it is also not uncommon that both functions are fulfilled by one bank. In that case potential conflict of interest might arise, which has to be mitigated to serve client’s best interest. On the other hand, there are also positive factors from bank fulfilling both roles, resulting from the existing lending or client relationship that led to better understanding of client’s business and future prospects. It was shown that in case the role of financial advisor in M&A requires acquisition of information, commercial banks with the pre-existing lending relationship proved to increase target’s value and thus delivered advisory advantage to the target over the one provided by solely advisory non-banking competitors (Allen, Jagtiani, Peristiani, & Saunders, 2004).

However, as some scholars point out (Song, Wri, & Zhou, 2013) in the beginning of 2000s and also past financial crisis of 2008 there was a rising trend of retaining independent financial advisors in M&A transactions. In USA market between 1995 and 2006 there was around of a quarter of M&A transactions where engagement of such independent advisors also called “boutique” advisors took place. Usually they possess certain sector specialisation, are more independent, deal with less conflict of interests from corporate relationship with

the counterparties, and are overall smaller than banks. The research showed that boutique advisors were mostly engaged by sell-side (thirty percent of cases), followed by buy-side (twenty-two percent of cases). In particular they were retained when deal values were smaller, there was a hostile take-over or there was an equity consideration payment instead of cash consideration. Additionally, they demonstrated high value when co-engaged in complex transactions where their sector specialisation proved useful by complementing the advisory of full-service bank advisors. Also, the acquirers that engaged them on average paid lower acquisition premiums, while on the same time the transaction timelines were extended, due to boutique advisors spending more time on target's due diligence and negotiation.

Additional type of advisors that are usually engaged in M&A process are accountants. They either engage as due diligence advisor, tax advisor, accounting advisor etc., however in some cases clients hire them also as M&A advisors (Merger Market, 2020a). Because accountancy firms usually also conduct audits for clients, it is important to stress out that both advisory and auditing functions cannot be performed in parallel for a client due to potential conflict of interest. In case this would occur, necessary steps would have to be taken to mitigate such conflict, either by separating the teams each responsible for their own tasks, not being aware of each other's business. On the other hand, advisory fees generated by advisory departments can have a negative impact on the quality of audit done for the same client. If the advisory part proves to be more profitable for the accountancy, it is likely that audit department will try to appease the client rather than enter into a conflict. Therefore, there are many appeals to limit the scope of work of accountancy firms, especially the largest 4 global players (Big 4), performed for one client. Even more so, some countries' regulatory authorities demand that advisory and auditing part are split and operationally independent (Hill, 2019).

Despite common connection of accountancies with audit services, research (Bilinski & Yim, 2019) documents that accountants are able to leverage their experience, gained through auditing clients in certain industries, also in transaction advisory. With industry specific experience from auditing of companies in similar field, the knowledge obtained is not proprietary and can be applied also in advisory, facilitating acquirers' target valuation not to be upward excessive. The competitive strength provided from accountants comes from reduction of valuation uncertainties. It is evident that certain industry knowledge-spillovers can occur, especially when accountancies have the same people working in their assurance and M&A advisory departments, or when they engage colleagues from auditing departments to help M&A advisors on large projects (Bilinski & Yim, 2019, p. 42).

1.5.2 Role of sell-side financial advisors in M&A process

Usually, the work of financial advisors starts even before the decision on sale of equity has been made and usually ends only after deal has been closed. The activity can be broken down in the consequent phases (Samojlik, 2005; Bobik, 2005):

- (1) Mandate acquisition: through network of relationships and monitoring of activity in the sector or geography the financial advisor's senior personnel establishes a sense for opportunity with recognition of potential strategic development and equity movement interests in the future. Similarly, there could be company specific circumstances under which advisors would be invited to provide the proposal for advisory services. At this point advisor usually conducts a company and market analysis to get a picture on the

environment in which it works, determining the size of the market, competition, past evolution, future trends, together with main regulatory and legal framework that needs to be considered. Usually, the engagement would start with meeting between financial advisors and applicable companies that are ready for acquisitions or are potential acquisition targets. If the future development prospects are met between the company, its owners and financial advisor, the next step would be the signing of the mandate agreement, which would assign the task of selling the company to the financial advisor. This step takes approximately one to two months with the main driver being senior financial advisor's personnel, either Directors (4th level position), Vice Presidents (3th level position) with the help of Associates (2nd level position).

- (2) Preparation phase: financial advisor starts organising the process and its structure. Initially the work is organised in work streams with set responsibilities between the target, financial advisor and other advisory parties and envisaged time period for their execution. If external advisors are not yet selected, financial advisor in the transaction can also assist the selection by recommending and running a short tender process for legal advisors, accountants or other specialist advisors. Next step is to review the company based on secondary sources and internal data gathering in a process called initial due diligence, which can change the initial target's perception by the advisor who can then help tailor the core points of interest by the market. Based on findings a strictly confidential valuation model is build and in parallel potential investor list is constructed with rationale for transaction by each investor. Additionally, marketing documentation such as teasers, data packs or information memorandums are prepared that will be used in the next phase. Together with marketing documentation assembly, due diligence data rooms would be set up with clear and concise information for efficient due diligence process later on. In case beneficial, also a more detailed and official vendor due diligence can be conducted in this phase, which would be performed based on sell-side initiative by external party (e.g. legal advisors, accountants etc.). The vendor due diligence report would accompany the confidential marketing documentation in the approach phase. The preparation takes approximately two months, the process drivers are financial advisor's mid- or junior level employees, either Vice Presidents or Associates with the help of Analysts (1st level position).
- (3) Approach phase: investors from the list are contacted with teasers and short summary of the envisaged process and scope of the transaction. Subject of need the opportunity is presented to them in calls, meetings etc.. Such informative sessions work as two-way communication that not only presents the target in the best possible way but also serve financial advisor to determine the level of interest by each acquirer and try to detect critical points in the asset that will likely be addressed in due diligence, or negotiation phase of the process later on. At all times financial advisors have to preserve the confidentiality of sensitive information and competitive process. In a standard structure of two-phase sale process all the confidential information is disclosed only after bidders enter into confidentiality agreement (e.g. NDA) with the sell-side. Also, the first set of confidential data is pre-selected and presented through beforementioned information package, information memorandum or vendor due diligence. The second due diligence, this time bidder-initiated, would come only after collection of indicative offers. Financial advisor would coordinate data gathering from the target, questions and answers sessions,

and reviewing of answers by the target. Financial advisor should always have a helicopter view on the process and provide advice in transaction structuring and comment any changes that could have an impact on valuation, financing, competitive process and highlight positive or negative implications from past experience. The approach phase again takes approximately two months, the process drivers are financial advisor's senior to mid-level employees either Vice Presidents or Associates under steering by Directors.

- (4) Negotiation phase: financial advisor acts as facilitator to drive deal to successful signing. Assist is provided in negotiating a deal by setting the negotiation strategy and tactics (i.e. decisions on timing, physical and administrative assistance, parallel or exclusive negotiations etc.), as well as creating options and clarifying their financial impact in the negotiated agreement. Financial advisor is also proactive in providing ideas on other sensitive elements such as resolution of method of payment, calculation of price consideration, treatment and relevance of contingencies with financial impact, structure of post-acquisition operations such as the management incentive etc. Mainly the goal is to help bridge the knowledge gap that seller potentially has. Last but not least the financial advisor's role includes management of expectations of the acquirer as well as the ones of the client. To strengthen the mutual interest and understanding of material topics, assist can be provided also in negotiating the letter of intent (LoI) or term sheet (TS) prior the share and purchase agreement (SPA) is being dealt with. Negotiations last approximately one month to complete, dependable on the complexity of the transaction. Process drivers are senior employees such as Directors with support from Vice Presidents and Associates.
- (5) Closing phase: The closing phase is usually the least controlled by the engaged parties in the process, as it mainly relates to the provision of approvals by the competent regulatory bodies, and can only to a limited degree be controlled by both acquirer and selling parties (e.g. in fulfilment of conditions precedents outlined in the share purchase agreement). Financial advisor nevertheless plays a crucial role by providing (on a need base) the copies of due diligence records, including the history of information exchange that can be requested by either of the involved parties, especially in case of legal complications or process related lawsuits later on. The duration is highly dependent on the local legislation, market concentration, industry, size of the target etc., usually it lasts more than two months. In closing phase, the majority of activity is done by transaction legal advisors that submit all legislative documentation and can be supported by financial advisor's junior employees such as Associates and Analysts that support and coordinate the specialists and information requests. Usually, the majority of financial advisor's revenue comes in form of success fee paid by the client after the transaction is closed, i.e. there has been the exchange of payment and shares.

2 EMPIRICAL ANALYSIS

In the following segment I am presenting the research question, hypotheses, outline of the analysis, empirical results and their discussion.

2.1 Research question and hypotheses presentation

As mentioned, the underlying research question of the thesis is the following:

“The transactions where sell-side financial advisors have been retained reached higher relative valuation multiples from transactions without engagement of sell-side financial advisors.”

In respect to hypothesis 0 (H_0) and hypothesis 1 (H_1) I formed hypotheses, looking at the subject from the following valuation multiples:

(1) EV / EBITDA: “The transactions where sell-side financial advisors have been retained reached higher EV / EBITDA multiples from transactions without engagement of sell-side financial advisors,” expressed statistically:

i) $H_0: \frac{EV}{EBITDA} \text{ with sell-side advisor} \leq \frac{EV}{EBITDA} \text{ no sell-side advisor}$

ii) $H_1: \frac{EV}{EBITDA} \text{ with sell-side advisor} > \frac{EV}{EBITDA} \text{ no sell-side advisor}$

(2) EV / EBIT: “The transactions where sell-side financial advisors have been retained reached higher EV / EBIT multiples from transactions without engagement of sell-side financial advisors,” expressed statistically:

i) $H_0: \frac{EV}{EBIT} \text{ with sell-side advisor} \leq \frac{EV}{EBIT} \text{ no sell-side advisor}$

ii) $H_1: \frac{EV}{EBIT} \text{ with sell-side advisor} > \frac{EV}{EBIT} \text{ no sell-side advisor}$

(3) EV / Revenues: “The transactions where sell-side financial advisors have been retained reached higher EV / Revenues multiples from transactions without engagement of sell-side financial advisors,” expressed statistically:

i) $H_0: \frac{EV}{Revenues} \text{ with sell-side advisor} \leq \frac{EV}{Revenues} \text{ no sell-side advisor}$

ii) $H_1: \frac{EV}{Revenues} \text{ with sell-side advisor} > \frac{EV}{Revenues} \text{ no sell-side advisor}$

Additionally, the aim is to segment transactions as per independent transaction variables in the observed sample and later on with the regression model show whether such variables have statistically important significance on the acquisition multiples. Such variables are:

(1) Profitability of the target

i) Represented by EBITDA margin (i.e. EBITDA / Operating revenues)

(2) Time of the transaction

i) Represented by year of the transaction

(3) Indebtedness of the target

i) Represented by indebtedness class, an own calculated measure that allocates the target based on its financial indebtedness relative to its operating result (i.e. net financial debt / EBITDA)

(4) Business sector of the target

i) Represented by dominant sector the target is active in

2.2 Presentation of the sample and transactions included in the analysis

The sample is sourced from MergerMarket database (www.mergermarket.com) and includes all transactions that were reported to the platform and have signed date between 1st January 2000 and 31st December 2019 and included targets predominantly based in Slovenia.

2.2.1 Definition of the sample and excluded transaction

In total there were 240 reported transactions in the sample. In accordance with the methodology, I filtered the sample and excluded (Merger Market, 2020a):

- (1) Transactions without reported consideration on the platform (112).
- (2) Transactions in the financial institutions segment (13). As the sector has different financial statement item composition, the applicability of the same relative valuation multiples described in the methodology could be misleading and not applicable (e.g. a financial institution performance is largely connected with financial income and expenses that take into account also the risks taken, thus earnings before interest and tax (EBIT), earnings before interest, tax, depreciation and amortisation (EBITDA) might not have the same informative value as in real sector. Also difference between equity value (EqV) and enterprise value (EV) in financial sector could be vast as debt is treated as an asset and there are significantly larger amounts of debt on the balance sheet than in the real sector, which make EV metric less applicable.
- (3) Transactions where based on the qualitative assessment the transaction outcome has already become apparent and they did not materialise³ (5), namely:
 - i) Nova TV and Pro Plus, 2017 (Nova TV d.d., 2017)
 - ii) Gorenje Surovina, 2015 (Gorenje Group, 2016a)
 - iii) Časopisno založniško podjetje Večer, 2013 (STA, 2013)
 - iv) Pivovarna Laško, 2011 (P.J., 2011)
 - v) Pivovarna Union, 2002 (Merger Market, 2020a)
- (4) Transactions where data for financial statement analysis could not be retrieved (2):
 - i) Studio Moderna Holdings, 2011
 - ii) Petišovci Project Slovenia, 2010
- (5) Transactions where target was a start-up company, deal was predominantly structured as an asset sale and the valuation multiple showed similarly high multiples not supported by acquired company's business performance (4) (Bisnode, 2020):
 - i) MGC Derma d.o.o., 2018; calculated EV / EBITDA implied multiple of -14.6x, while the company reported Net sales of EUR 0.5mn and EBITDA of EUR -0.6mn.
 - ii) Farmakem, d. o. o., 2018; calculated EV / EBITDA implied multiple of 1,142.3x, while the company reported Net sales of EUR 0.0mn and EBITDA of EUR 0.0mn.
 - iii) Istrabenz hoteli Portorož, 2008, showed negative EBITDA margin of -72,63%, which was due to asset deal structure, where the target had close to none operating performance as the subject of transaction was a hotel in refurbishing. Calculated EV

³ Based on the known outcomes as of 1.1.2020

/ EBITDA implied multiple of -86.0x, while the company reported Net sales of EUR 0.0mn and EBITDA of EUR -0.5mn.

iv) Prodent International, 2007; calculated EV / EBITDA implied multiple of 145.4x, while the company reported Net sales of EUR 3.9mn and EBITDA of EUR 0.3mn.

Operating sample included 104 transactions (Table 1).

Table 1: M&A transactions included in the operating sample (table continues 1/3)

Announced Date	Target Company	Bidder Company
27.11.2019	Filc d.o.o.	Freudenberg Performance Materials Apparel SE & Co. KG
7.11.2019	Vipap Videm Krško dd	International Project & Invest. Dev. Corp.; PORTIVA Private Equity a.s.
11.10.2019	Casino' Riviera d.d.	Novomatic AG Holding
1.07.2019	Unistar LC doo, Ljubljana	Actual IT d.d
10.05.2019	Intereuropa d.d.	Posta Slovenije d.o.o.
5.04.2019	MTC Fontana d.o.o.	Diagnosticni Center Bled d.o.o
1.03.2019	NIL d.o.o.	Conscia Holding A/S
21.02.2019	Hoteli Bernardin d.d.	Sava d.d.
29.11.2018	Sanolabor d.d.	SALUS, Ljubljana, d. d.
5.10.2018	Marina Portoroz d.d.	Mr Klaric; Marina Glen
29.05.2018	Gorenje, d.d.	Hisense Electric Co., Ltd.
23.05.2018	Sanolabor d.d.	SALUS, Ljubljana, d. d.
17.04.2018	Big Bang, d.o.o.	Bidigital Investment
9.03.2018	Mestni Plinovodi d.o.o	Adriaplin d.o.o.
2.12.2017	Lesna TIP	Yildiz Entegre Agac Sanayi ve Ticaret
21.12.2016	Aerodrom Maribor d.o.o.	SHS Aviation d.o.o.
20.12.2016	Gold Club d.o.o.	Win Systems Solutions S.L
6.12.2016	Kansai Helios Coatings GmbH	Kansai Paint Co., Ltd.
17.10.2016	ETI Elektroelement d.d.	Andlinger & Company, Inc.
14.10.2016	Cimos d.d.	TCH Cogeme
14.09.2016	Intersport ISI	Enterprise Investors Sp. z o.o.
8.08.2016	Marifarm d.o.o.	Arterium Corporation
1.08.2016	Kovinoplastika Loz	KJK Management S.A.
25.07.2016	Paloma, higienski papirji, d.d.	Eco-Invest, a.s. (Grgič, 2016)
30.06.2016	Publicus, d.o.o.; EKOGOR d.o.o.	HIS gradbenistvo in inženiring d.o.o.
22.06.2016	GEN-I, d.o.o.	GEN Energija d.o.o. (Sovdat, 2018)
31.05.2016	CPG, d.d.	Kolektor Koling d.o.o.
15.12.2015	Trimo d.d.	Innova Capital Sp z o.o.
27.11.2015	Paloma, higienski papirji, d.d.	Abris Capital Partners
24.11.2015	Avrigo d.o.o.	Adventura prevozi d.o.o.
1.10.2015	Mladinska knjiga Založba d.d. (logistics division)	Posta Slovenije d.o.o.
15.09.2015	Alpetour - Potovalna agencija d.d.	Arriva Dolenjska in Primorska
29.07.2015	Perutnina Ptuj d.d.	Slovenian Steel Group, d.d.
8.06.2015	Amis d.o.o	Telekom Austria AG

(table continues)

Table 2: M&A transactions included in the operating sample (table continues 2/3)

Announced Date	Target Company	Bidder Company
3.06.2015	Delo, d.d.	FMR Financiranje in upravljanje naložb, d.d.
21.04.2015	Zito, d.d.	Podravka d.d.
13.04.2015	Pivovarna Lasko d.d.	Heineken N.V.
12.02.2015	Actual IT d.d.	DBA Lab SpA
23.12.2014	Vitiva d.d.	Frutarom Industries, Ltd.
19.12.2014	Radenska d.d. Radenci	P & P Group d.o.o.; Kofola d.o.o.
17.10.2014	Tusmobil d.o.o.	Telemach d.o.o.
5.09.2014	Aerodrom Ljubljana, d.o.o.	Fraport AG
20.06.2014	Letrika d.d.	MAHLE GmbH
24.04.2014	McDonald's Slovenija d.o.o.	Mr Knezevic (Private Investor)
23.04.2014	Traffic Design d.o.o.	Q-Free ASA
10.04.2014	Mladinska knjiga Založba d.d.	Ucila International
30.01.2014	Fotona d.o.o.	The Gores Group LLC; Technology4Medicine, LLC
28.11.2013	Rimske Terme d.o.o.	Terme Resort d.o.o.
6.11.2013	Nacionalna Financna Družba d.o.o.	Neta Yatirim; Elements Capital Partners
16.10.2013	Helios d.d.	Ring International Holding AG
14.06.2013	Poslovni sistem Mercator dd	Agrokor d.d.
10.06.2013	Elektro Turnsek d.o.o., Celje	Telemach Bosnia d.o.o.
22.05.2013	Ljubljanske mlekarne d.d.	Dukat mliječna industrija d.d.
30.10.2012	Ljubljanske mlekarne d.d.	Groupe Lactalis S.A.
26.10.2012	JUTEKS d.d.	Beaulieu International Group N.V.
25.10.2012	Savatech d.o.o.	CGS a.s.
19.03.2012	ETOL d.d.	Frutarom Industries, Ltd.
17.01.2012	ETOL d.d.	Frutarom Industries, Ltd.
1.12.2011	Plama-pur d.d.	Fond Zajednickog Ulaganja Moneta dd; Agrogorica d.d.
23.09.2011	Instalacija d.o.o.	Petrol d.d. Ljubljana (STA, 2012)
29.08.2011	Mura in partnerji, d.o.o.	Aha Moda d.o.o.
26.07.2011	Fructal zivilska industrija d.d.	Nectar d.o.o.
28.07.2010	Lesnina d.d.	XXXLutz KG
16.07.2010	Turizem KRAS dd	Batagel & Co doo
1.07.2010	Droga Kolinska dd	Atlantic Grupa d.d.
20.11.2009	Interenergo dd	Karntner Elektrizitats Aktiengesellschaft
6.05.2009	Telemach d.o.o.	Mid Europa Partners LLP
3.12.2008	Lesnina d.d.	Siringa
4.11.2008	Terme Catez d.d.	Bidco for Terme Catez

(table continues)

Table 3: M&A transactions included in the operating sample (table continues 3/3)

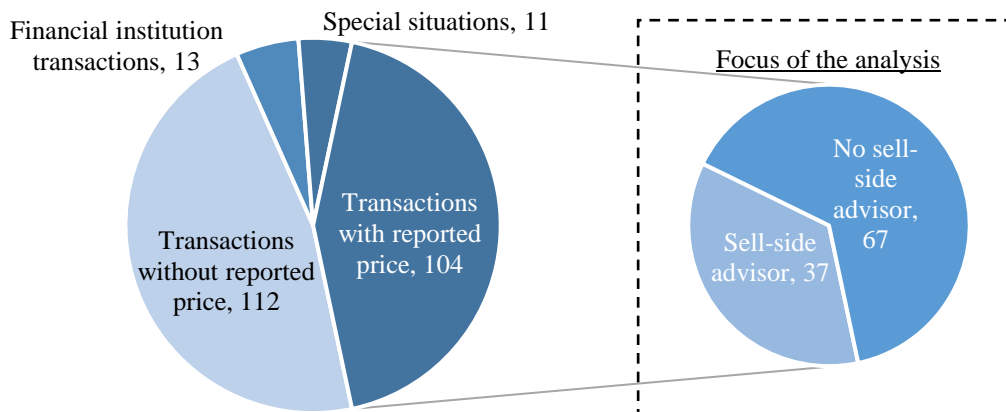
Announced Date	Target Company	Bidder Company
10.09.2008	Donit Tesnit, d.o.o.	Donfin
20.08.2008	Pejo Sampionka d o o	Beohemija Inhem d.o.o
19.08.2008	Lesnina d.d.	Glen; Siringa; Publikum Trezor
20.06.2008	Ljubljanska borza, d. d.	Wiener Boerse AG
29.04.2008	Tosama d.d.	Sana Investicije d o o
18.04.2008	Etra 33 d d	Sarini
12.02.2008	Pivovarna Lasko d.d.	BIDCO for Pivovarna Lasko
13.11.2007	Iskraemeco, d.d.	El Sewedy Electrometer; Elsewedy Electric
9.10.2007	Istrabenz dd	Petrol d.d. Ljubljana
13.06.2007	Interseek Ltd	Telekom Slovenije dd
7.06.2007	Ljubljanski kabel	Telemach d.o.o.
6.06.2007	NAMA DD	KD Group
7.03.2007	KEKO-Varicon d.o.o	MSIN d.o.o.
1.03.2007	Slovenian Steel Group, d.d.	IMH (Industrial Metallurgical Holding, formerly KOKS Group)
30.06.2006	Prva TV d.o.o.	Modern Times Group MTG AB
13.06.2006	Amis d.o.o	Iris Capital Management; KBC Private Equity NV
6.11.2005	Elektroncek Group	Aristocrat Leisure Limited
3.10.2005	Saturnus Embalaza DD	Silgan Metal Packaging
4.08.2005	Periteks	Salesianer Miettex GmbH
11.02.2005	Pivovarna Union d.d.	Pivovarna Lasko d.d.
31.01.2005	Droga Kolinska dd	Droga Portoroz Zivilska industrija, d. d; Istrabenz dd; Kolinska d.d
22.12.2004	Telemach širokopasovne komunikacije d.o.o.	UnitedGlobalCom Inc
21.12.2004	Eurosped 2001 Mednarodna Spedicija d.o.o. (Eurosped)	DFDS Transport Group AS
30.06.2004	Zdravilisce Radenci	Sava d.d.
30.06.2004	OMV Istrabenz Holding	OMV AG
14.06.2004	Color, d.d.	Helios d.d.
6.02.2004	Terme 3000	Sava d.d.
22.09.2003	Zivila Kranj	Poslovni sistem Mercator dd
16.07.2003	Mesnine dezele Kranjske (82%)	Kras
29.08.2002	Lek d.d.	Novartis AG
4.03.2002	Cementarna Trbovlje d.d.	Lafarge S.A.
14.01.2002	Valkarton	Belisce d.d.
19.11.2001	Pivovarna Union d.d.	Anheuser-Busch InBev NV
27.02.2001	si.mobil	Mobilkom Austria AG
7.09.2000	Radenska d.d. Radenci	Pivovarna Lasko d.d.

Merger Market (2020a).

Out of 104 transactions in the operating sample there were 37 transactions with engagement of sell-side advisor (reported as either financial advisor to the target or to the seller, as in practice sell-side advisor is engaged by either seller and/or the target company), whilst financial advisor was not engaged in 67 instances (Figure 1).

All transactions in the operating sample reported transaction consideration, which is in many cases a proprietary information. Additionally, I was able to obtain companies' financials that enabled own calculation of the multiples.

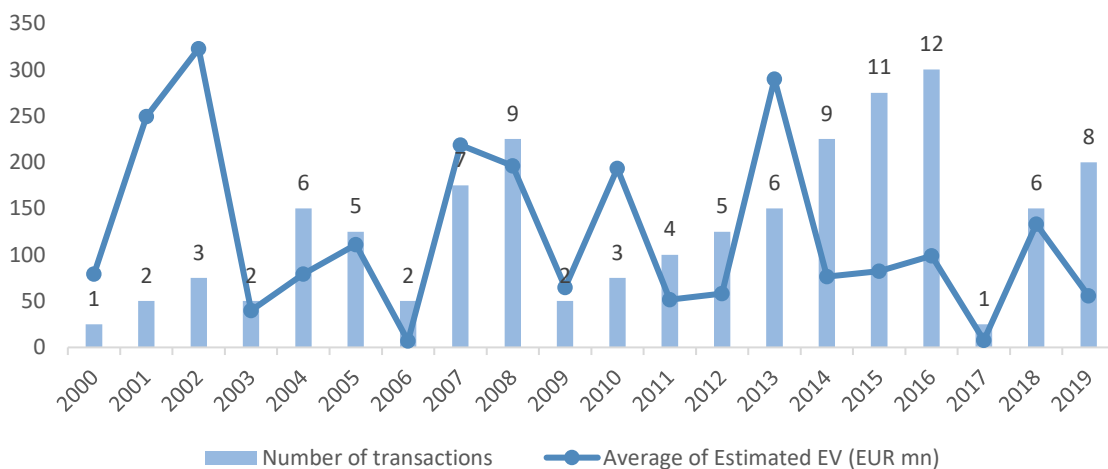
Figure 1: Operational sample composition



Source: Own work.

The operating sample includes transactions unequally dispersed through the years. The large number of transactions come from 2016 (12), 2015 (11) and 2008 (10). The lowest M&A activity in the sample appeared in 2000 and 2017 with only 1 transaction considered. In terms of average transaction consideration, the highest EV is reported in 2002, followed by 2013 and 2001. The smallest transactions were recorded in 2006 and 2017. Total value of transactions was EUR 12,943mn, giving an average transaction value of EUR 124.5mn. I have arranged the transactions similar as Mager et al. (2017) did for German sample of transactions, distributing them annually and by size, obtaining the following distribution:

Figure 2: Operating sample's number of transactions and average value per year



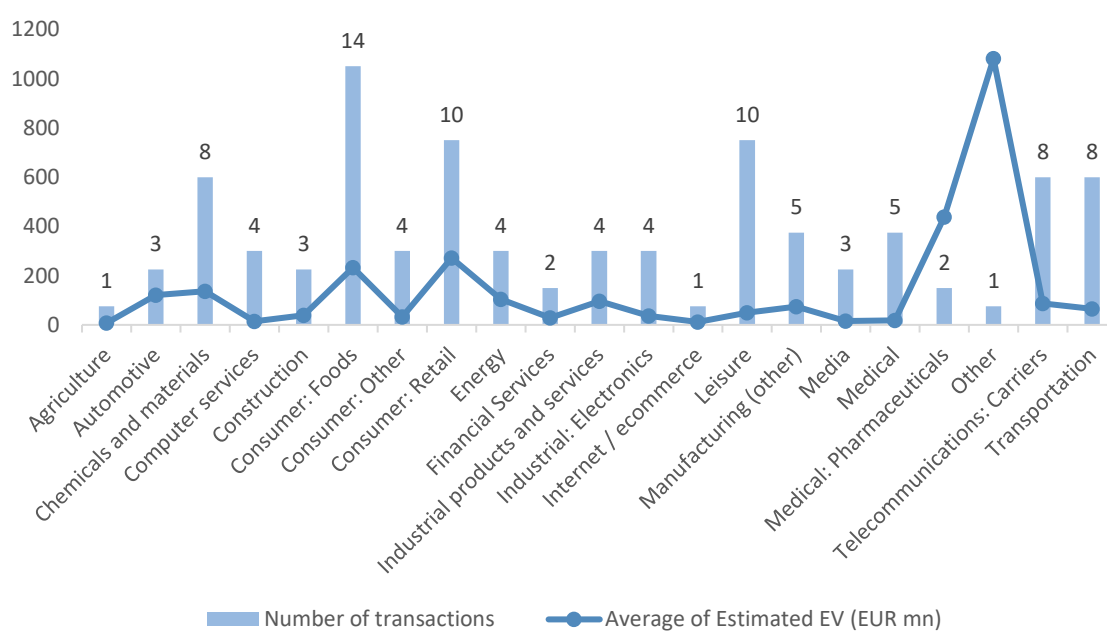
Adapted from Merger Market (2020a).

In segmentation of transactions by their sector, I performed a qualitative check and corrected any potential misallocation with the goal to cluster the peers that operate in similar sectors and/or are competing with each other. The reclassification was applied for the following:

- (1) Sanolabor, 2018, from sector “Services (other)” into “Medical”
- (2) Mestni Plinovodi, 2018, from “Utilities (other)” into “Energy”
- (3) Gold Club, 2016, from “Consumer: Other” into “Leisure”
- (4) McDonald’s Slovenija, 2014, from “Leisure” into “Consumer: Retail”
- (5) Traffic Design, 2014, from “Computer software” into “Computer services”
- (6) Etol, 2012, from “Consumer: Other” into “Chemicals and materials”
- (7) Interenergo, 2009, from “Services (other)” into “Energy”
- (8) Pivovarna Laško, 2008 & 2015, from “Consumer: Other” into “Consumer: Foods”
- (9) Pejo Šampionka, 2008, from “Consumer: Other” into “Chemicals and materials”
- (10) Iskraemeco, 2007, from “Industrial automation” into “Industrial: Electronics”
- (11) Pivovarna Union, 2001 & 2005, from “Consumer: Other” into “Consumer: Foods”
- (12) Periteks, 2005, from “Services (other)” into “Consumer: Other”
- (13) Radenska, 2000 & 2014, from “Leisure” and “Consumer: Other” into “Consumer: Foods”

Allocation by sector showed that most transactions in the operating sample come from consumer goods sector in the segment of food (14), followed by leisure (11) and retail (10). Also, significant number of transactions were in chemicals and materials industry (8), telecommunications (8) and transportation (8). The largest average transaction value was in sector “Other”, which includes a sale of a conglomerate company active in various fields. The sector with second largest average value was pharmaceuticals with 2 transactions. All the rest sectors reported average transaction values between EUR 7.5mn and EUR 271.6mn.

Figure 3: Operating sample’s number of transactions and average value per sector



Adapted from Merger Market (2020a).

2.2.2 Analysis of transactions values and necessary corrections of the sample

Based on Merger Market database reporting policy, deals with known consideration are reported in a way that deal value assumes the sum of price paid for the equity stake together with the value of target's net debt when equity stake is less than fifty percent (as long as the target is not a financial institution). The deal value also includes any potential earn-out or future payment agreement if happening in two years post deal announcement. Net debt is calculated as a sum of short- and long-term debt minus cash that were reported to the platform (Merger Market, 2020b).

The sample included reported financials, which were submitted based on media reporting or deal announcements. In many instances the numbers were rounded or there was a shortage of them. Hence, I needed to obtain the assurance of correctness and adequacy of data for the analysis through public and official records. I sourced the data from targets' and bidders' annual reports, Slovene Business Registry (Ajpes) and Bisnode's GVIN, a financial database on Slovene companies.

When cross-checking the inputs, the goal was primarily to assure the correctness of the figures on the platform, as such figures assumedly take into account any potential transaction specifics, from asset sale or company sale, sole entity or consolidated group consideration etc. For transaction scope determination I tried to best replicate deal description that provided initial clarity on the deal. If scope could not be easily defined, I compared the reported data figures and tried to add the missing figures from aforementioned sources. In case the reported figures assumed consolidated group, the group's official financials were considered etc. If reporting was insufficient, I assumed the scope included consolidated company and took consolidated financials. When it comes to the year of financials, Merger Market database includes deal value based on the current actual year and calculates multiples using financials of one and two year back (the financials for business year in which the transaction was signed are at the time of announcement usually not yet available). In data assurance exercise I focused on one year back. The examination gave fruitful results, however in some cases the financial figures were not available in the source databases and I had to approximate them. This happened in the following cases, where approximations were used on financials of close years:

- (1) Lesna TIP, 2017: the company was in bankruptcy with the last annual report available for 2015; 2015 financial figures were taken.
- (2) Gold Club, 2016: the company was split into Win Systems d.o.o. and Best Gold Bet d.o.o. (previous ownership); 2016 financials for Win System d.o.o. taken.
- (3) Intersport ISI, 2016: No 2015 consolidated financials available; 2016 consolidated figures taken.
- (4) Mladinska knjiga založba, 2015: net sales as of 2014, while EBIT, EBITDA, net income as of 2016 (the first full operational year under PS logistika d.o.o.), cash, short- and long-term financial liabilities are as of 2015 (only fourth quarter of 2015 under new ownership).
- (5) Savatech, 2012: 2011 financial figures taken for Savatech d.o.o. and Sava Medical in storitve d.o.o., as the transaction included both entities.

- (6) Droga Kolinska, 2005: Equity consideration merger between Droga d.d. and Kolinska d.d., net sales, EBIT, EBITDA and net income figures taken as of 2005 (post-merger), short- and long-term financial liabilities, cash items as of 2004 (pre-merger) taken.
- (7) Zdravilišče Radenci, 2004: net sales, EBIT, EBITDA and net income figures taken as of 2003, short- and long-term financial liabilities, cash items as of 2004.
- (8) Simobil, 2001: net sales, EBIT, EBITDA and net income and cash for 2000, short- and long-term financial liabilities for 2001.

Other descriptive attributes in the sample database that included relevant data included information on: bidder, bidder sector, bidder advisors, seller, seller sector, seller advisors, target, target sector, target advisors, deal description, deal announcement date, (deal value in EUR mn), deal type, equity stake consideration, and own calculated indicators, such as EBITDA margin, net financial debt, net financial debt/Revenue, as well as implied relative valuation multiples EV/EBITDA, EV/EBIT, EV/Revenue.

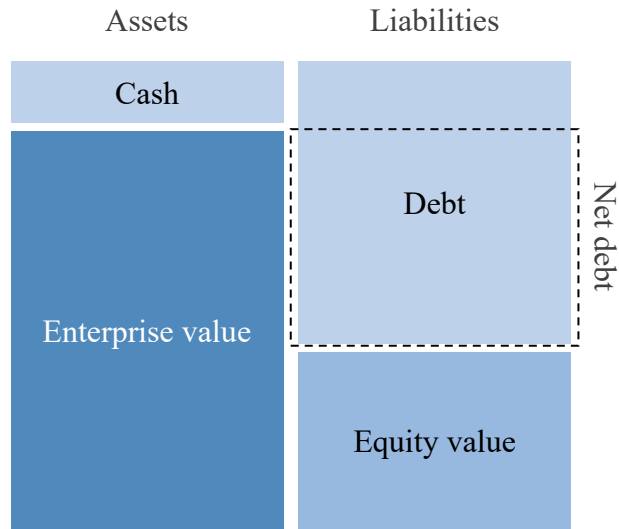
2.2.3 Enterprise value and equity value bridge

While Merger Market reported transaction consideration that provided insight into deal value, it was of the essence to clarify whether deal value was outlining the enterprise or equity value and whether it was showing the value for hundred per cent or just the stake of the transaction. Before elaborating the analysis of price determination further, it is important to distinguish between enterprise value, equity value and the bridge between them (Corporate Finance Institute, 2020):

- (1) Enterprise value (EV) is the value of the company or all company's operating assets less cash, regardless of the capital structure for financing such assets. It can be calculated by deducting cash items from the value of total assets, or by summing the equity value (EqV) and the net debt.
- (2) Net debt is the value of outstanding short-term and long-term debt (and debt like-items) less cash. It represents the value of outstanding debt the company would have in case it would use the cash on its balance sheet to offset it. When valuing a public company through EV – EqV bridge the net debt is usually not easily available (similar to a private company) as the company only reports its financials yearly, or quarterly.
- (3) Equity value, is the value of the company's equity or in other words value of all the shares. Unlike EV and net debt, Equity value is easiest obtainable for public companies as it is calculated as a product of price per share and the number of shares outstanding.

In many cases when valuing a company, especially a private one, one determines the EV through various valuation methods (e.g. discounted cash flow analysis, precedent transactions comparable analysis, trading companies' comparable analysis etc.) and then subtracts the calculated net debt and in that way arrives to EqV. For public companies the situation can be reverse, obtaining the EqV and by adding the Net debt getting the EV. This connection between both values resembles a bridge. In M&A it is an important negotiation topic as following the general pricing understanding of the definition of bridging element (net debt, non-core assets, non-controlling interests etc.) determines the value shareholders will obtain in exchange for their equity (Corporate Finance Institute, 2020).

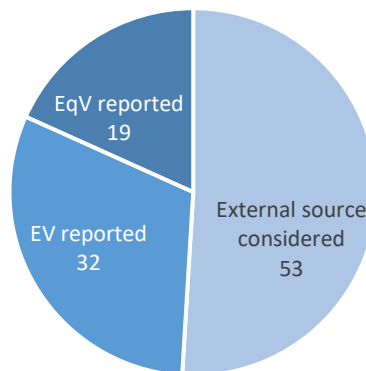
Figure 4: Enterprise value and Equity value bridge



Source: Own work.

As mentioned in the analysis I tried to determine what a deal price reported to the MergerMarket platform implied in real transaction price. A qualitative assessment was conducted, firstly going through Merger Market reported deal description in case more details on price have been disclosed. This happened in many occasions, e.g. a description showed offer's price per share and the acquiring number of shares, it suggested that deal value relates to either enterprise value, total equity value or equity value for transaction stake (% stake acquired). On the contrary in some cases there was no further indication and I investigated annual reports of the target, seller or acquirer to obtain the correct deal value. As seen in Figure 5 this exercise came into effect in 53 situations (ca. 51%). There were 32 deals (ca. 31%) where reported EV was assumed correct and 19 deals (ca. 18%) with EqV. Hence, the obtained results at the time of the analysis (2019 annual reports not yet available for majority of target companies) in my opinion show the correct transaction values, either obtained from public data or originating from a reliable source.

Figure 5: Sourced transaction size by source



Source: Own work.

In obtaining the data from external sources I focused on either target's, seller's or acquirer's annual report for the acquisition year or the year following the acquisition. The transaction breakdown was usually provided under additional explanations. In some cases, deal value disclosure was made in section elaborating the goodwill calculation where transaction net asset value calculation was revealed. If unavailable, I analysed cash flow statements, or in some cases obtained the value in combination of KDD (Slovenian Central Securities Clearing Corporation) and media reporting. KDD collects announcements of public takeover bids, while media reporting (in combination with KDD) confirmed or rejected the success of such bids. Additionally, some deal values were calculated using changes in ownership structure that gave the correct acquisition stake with the known price per share bid etc.

There were also across foreign exchange rate effects. Since Slovenia uses EUR as a currency only since 1st January, 2007, I had to recalculate the values for transactions prior that date. As reference rates official ECB rates were taken, where end of year rate was taken for balance sheet items and year average rate was taken for income statement items.

2.3 Methodology of analysing the value of financial advisors

2.3.1 Relative valuation multiples

As aforementioned I used a unique set of data on past transactions which is the source for the analysis given the absence of market trading quotes for private companies. I am relying on relative multiples as measures of value. Especially focusing on:

- (1) EV/EBITDA
- (2) EV/EBIT
- (3) EV/Revenues

Relative comparables based valuation offers way of valuing a company by comparing it to other companies in similar business and scale it by an appropriate value to firm performance metric (a valuation multiple) to take into account financial differences between them. To obtain the accurate results, compared peers have to be as similar as possible as “we estimate the value of the firm based on the value of other, comparable firms or investments that we expect to generate very similar cash flows in the future.” If a company performs better than the peers, this will be indicated in higher performance metric and will translate into higher valuation (Berk & De Marzo, 2017, p. 326).

The strength of such method is that enables quick and transparent valuation that is clear of subjective assumptions. Given its broad application in the practise, it is also believed that the ranges obtained through application of different performance metrics will grant somewhat reliable prices (unless there are significant company specific factors that drive the price in either direction). Using EV as the value indicator is beneficial as it is not affected by different amount of leverage peers undertake. EBIT (earnings before interest and tax) is a common performance metric, used as a proxy for generated operating cash flow, disregarding the effect of debt and tax expenses by the company. In case firm's capital needs vary significantly year over year, more applicable metric might be EBITDA (earnings before interest, tax, depreciation and amortisation) as it shows profitability neutral of yearly accounting-based assets depreciation. EBITDA based multiple is higher for high growth and

low capital requirement companies. If peer group is expected to maintain similar margins in the future also revenues might be an applicable metric (Berk & De Marzo, 2017).

One of weaknesses of such valuation method is impossibility of taking into account the firm specific advantages and differences that justify one company's higher or lower value (e.g. one company has a seasoned management that will lead the transition, other has an important new technology patent or is best positioned to access undeveloped market etc.). Usually by applying different firm performance metrics we obtain slightly different results that are mostly due to variability in company's and peer companies' growth rates in the future, profitability, risk or even different accounting standards application (not the case in my sample where all entities follow somewhat similar accounting standards eligible in Slovenia). Additionally, relative valuation gives us a value compared to the peers, however it does not give indication whether the whole industry is mispriced (Berk & De Marzo, 2017). In my case valuation multiples were applied across various sectors and years, hence I expected such deviances to even out and provide me with a useful measure.

2.3.2 Qualitative and quantitative methods

A combination of qualitative and quantitative research methods has been applied to ensure most reliable and properly assessed results.

Qualitative methods included the database assembly, where each transaction has been individually assessed and corrected if reported acquisition values or financial data deemed not to be in line with realistic picture. The majority of corrections included proper deal value attribution to either EV or EqV, accounting also for proper consideration stake. Furthermore, I made corrections for transaction characteristics other than value, namely correctly allocating target companies in the respective sectors that deemed dominant.

Quantitative methods included the calculation of EV – EqV bridge by calculation of net financial debt, calculation of respective relative valuation multiples (EV/EBITDA, EV/EBIT, EV/Revenue) and statistical summarisation of transaction characteristics segments (financial advisors' inclusiveness, profitability, time period, indebtedness and sector). The value financial advisors brought was calculated in absolute and relative terms, where an aggregate was calculated and sample's average performance indicators were used to present valuation multiples also relatively. Finally, the results had to be tested quantitatively using linear regression analysis that included also model testing for variance (ANOVA), sampling independence multicollinearity, autocorrelation and heteroscedasticity.

The obtained results gave us both absolute and relative insights into values through valuation multiples. Regression analysis gave us information on direction of relation between transaction characteristics and valuation multiples, together with significance and size of their predictive power.

Finally, and most importantly I determined the impact of financial advisor's engagement based on the method used by Granata et al. (2010), where the financial advisor's non-engagement resulted in discount or premium calculated as follows:

$$\begin{aligned}
 & \text{Financial advisor's engagement premium (\%)}^4 \\
 & = (\text{Financial advisor's engagement multiple} \\
 & / \text{Financial advisor's non engagement multiple}) - 1 \qquad (3)
 \end{aligned}$$

2.4 Impact by transaction characteristics

I observed the operating sample from various transaction characteristics, trying to assess what were the multiples applied to performance measures for historical transactions. I considered inclusiveness of financial advisor, target's profitability, time period, target's indebtedness and target's business sector.

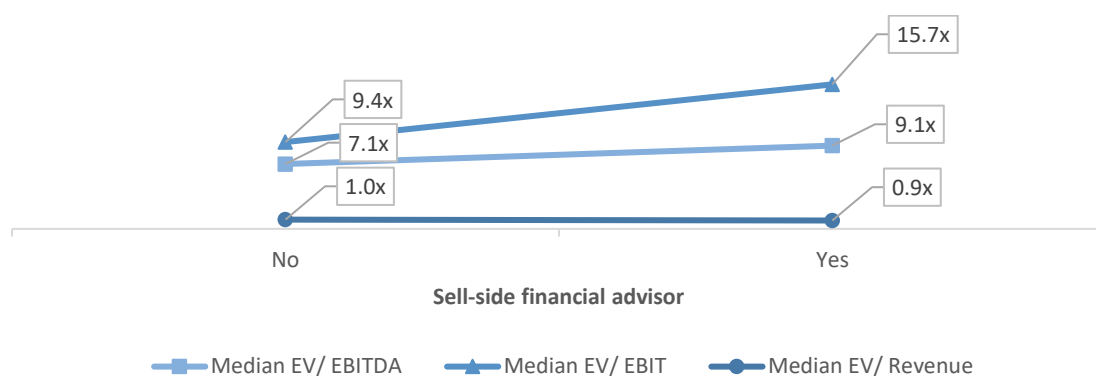
2.4.1 Segmentation by financial advisors' inclusiveness

I segmented the operating sample by transactions which did not retain sell-side financial advisor (*without sell-side financial advisor*) and transactions where financial advisor has been retained either by target company or the seller (*with sell-side financial advisor*).

In accordance with my expectations, in the majority of transactions financial advisor was not retained (64.4%). Also, as expected, the median of valuation multiples showed higher values for transactions with sell-side financial advisors. Especially significant difference was in median EV/EBIT, namely 6.6x higher in favour of *with sell-side financial advisor*. Similarly, median EV/EBITDA multiple for such transactions was 2.0x higher. Somewhat unexpected, was 0.1x higher median EV/Revenue when sell-side financial advisor had not been retained. This could be explained, as companies in category *without sell-side financial advisor* were on average less profitable with average EBITDA margin of 9.8% (vs. 16.7% *with sell-side financial advisor*), also were they smaller in size with average revenue of EUR 91.3mn (vs. 239.9mn *with sell-side financial advisor*). Hence, higher profitability with inclusion of financial advisor to the sell-side would grant even higher EV for EV/EBITDA and EV/EBIT, while if we divide slightly lower revenue on the constant profitability measure (e.g. the same EBITDA) over EV, the multiple would be lower vs. in case *without sell-side financial advisor*.

⁴ Negative financial advisor's engagement premium would indicate financial advisor's engagement grants a discount.

Figure 6: Operating sample's multiples by financial advisor's inclusiveness



Source: Own work.

2.4.2 Segmentation by target's profitability

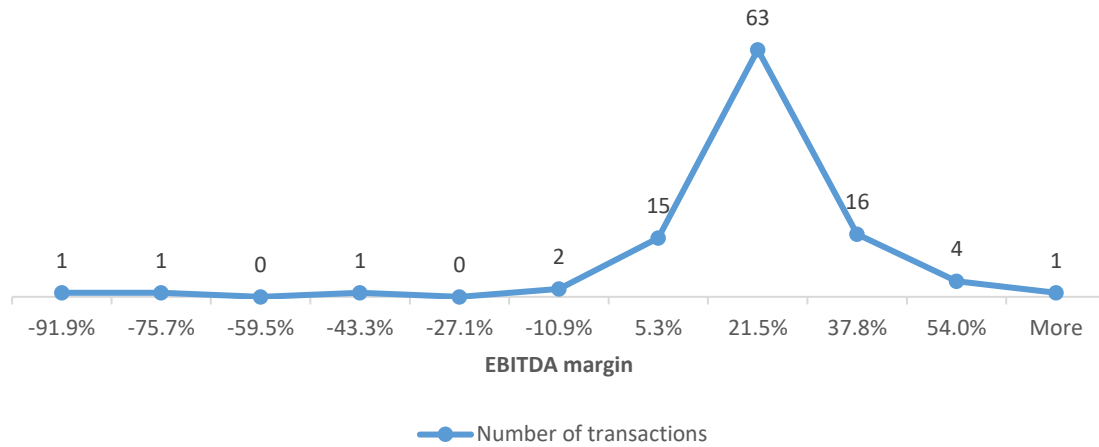
I have divided transactions into five profitability classes based on target's EBITDA margin. EBITDA margin is a profitability measure showing taking into account earnings before interest, tax, depreciation and amortisation divided by company's revenue. As EBITDA is sometimes used as a rough proxy for cash flow, similarly EBITDA margin can give us a taste of profitability in relative terms. In contrast to the gross margin, it includes also selling, general and administrative costs and is thus more informative and could be applied in broader array of industries.

Thus, the following classes were formed: *Negative profitability* class where EBITDA margin was below 0.0%, *Low profitability* for transactions for margins between 0.0% and 10.0%, *Medium profitability* for margins from 10.0% to 20.0%, *High profitability* for margins between 20.0% and 40.0% and *Very high profitability* for margins below 40.0%. Whilst negative companies are similar in bad performance, companies with extremely high EBITDA margin are usually scalable companies with lower marginal costs for additional new customer and/or companies operating an asset or activity under concession. In the operating sample, transactions in negative spectre were from different industries and had in common bad operating performance that resulted in a sale of a company, there were many asset heavy companies, infrastructure and media companies. Targets in low profitability class were also from various sectors operating as either wholesalers, retailers, some industrial companies or other consumer goods producers. In medium profitability class there were slightly better performing companies, from similar sectors together with IT infrastructure companies, pharmaceutical and medical companies. In higher profitability class were certain industrial companies, some infrastructure and leisure companies from concession operating companies (ports, casinos, aviation) to travel agencies and IT companies. In very high profitability class, there were alternative network companies, financial brokerage and infrastructure companies.

Profitability of target companies showed variability. The operating sample's mean EBITDA margin was 12.3% and median 11.5%. In the majority of transactions (36.5% cases) EBITDA margin was between 0.0% and 10.0%, followed by (33.7% cases) EBITDA margin between 10.0% and 20.0%.

The profitability distribution is negatively skewed (-2.2), has a positive kurtosis (11.6) and standard deviation of 19.6%. Profitability does not follow normal distribution but is rather asymmetric to lower bound values. The operating sample's profitability had the following distribution:

Figure 7: EBITDA margin distribution by transactions in operating sample

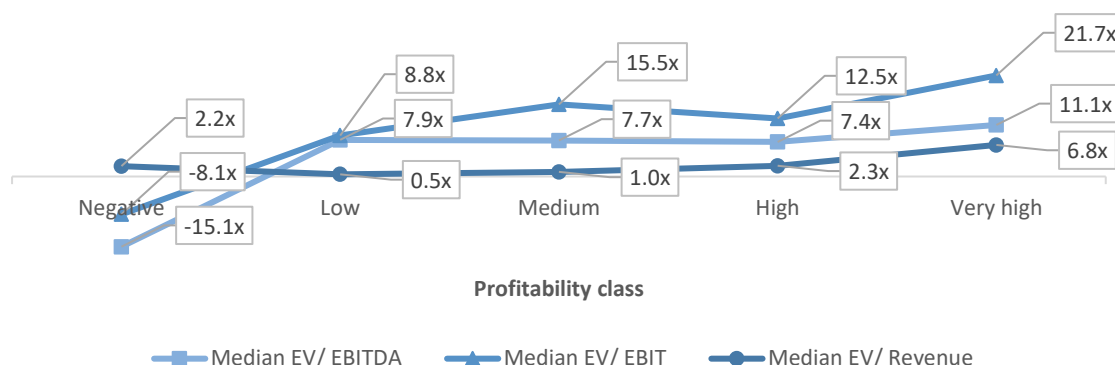


Source: Own work.

I anticipated that higher margin targets were sold at higher EV/EBITDA and EV/EBIT multiples, whilst EV/Revenue would show even higher rates of increase. The results proved to be somewhat in line with the expectations, deferring in the *Medium* and *High profitability* levels. For *Negative profitability* companies results showed high but negative EV/EBITDA and EV/EBIT multiples, which could infer that value was hiding in other elements rather than past year performance (e.g. could be in brand, assets, growth potential etc.). With *Low profitability* absolute multiples then decreased to 7.9x or 8.8x, respectively. Interestingly EV/EBITDA multiples decreased for *Medium* and *High profitability* levels, while EV/EBIT showed highest levels at *Medium profitability*. The most consistent with expectations was EV/Revenue whose multiples grew significantly in line with profitability growth, however were also higher with *Negative profitability* for the aforementioned reasons. As mentioned, if profitability is very high, difference between profitability measures (EBITDA, EBIT etc.) and revenue tends to be lower, whilst in negative performance the latter remains important indicator for value or size.

The multiples for each profitability class are presented below:

Figure 8: Operating sample's multiples by profitability class



Source: Own work.

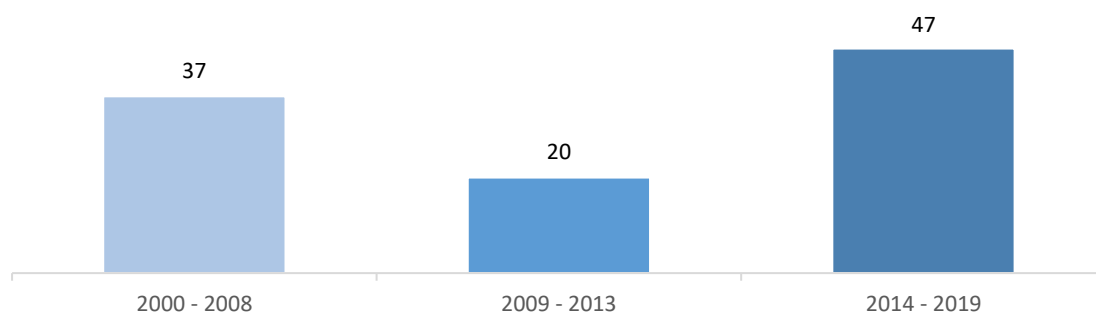
The results show that highest multiples are achieved if EBITDA margin is equal or above 40%, while EV/EBITDA multiples remain somewhat stable (and show even slight decrease) when profitability grew towards EBITDA margin of 40%. Companies with negative profitability have sticky EV/EBITDA and EV/Revenue multiples that are in absolute terms even larger than for most *Low to High profitability* classes. EV/EBIT multiple in absolute terms grows in line with increase of profitability.

2.4.3 Segmentation by time period

Given the investigated time period between 2000 and 2019, I divided transactions in three logical time periods based on the economic activity. The first period was between 2000 and 2008 (*Expansion*), when the Slovenian economy showed GDP's compounded annual growth rate of 4.3% (Republic of Slovenia Statistical Office, 2020) this was a period of economic boom. The second period started with credit crisis that first emerged in the second half of 2007 (Berk & De Marzo, 2017) and later turned into international banking crisis with collapse of Lehman Brothers in September 2008 (Williams, 2010) and later transited into global financial crisis. In Slovenia the consequences became apparent in 2009 companies' performance and lasted until 2013 (*Crisis*). This period showed economic downturn with negative compounded annual growth rate of -0.4% (Republic of Slovenia Statistical Office, 2020). The crisis was a W-shaped, with recovery shown only after 2013. The last period was economic recovery in the period of 2014 and 2019 (*Recovery*), when growth was parallel worldwide and Slovenian economy's GDP's compounded annual growth rate of 3.3%, before the start of covid-19 crisis in EU economy in the beginning of 2020 (Republic of Slovenia Statistical Office, 2020). Moreover, given the operating sample, combining transactions into three logical periods gave us sizeable enough classes that could grant more tangible and interpretable results.

Time period showed variability. The operating sample's median date was 31.05.2013. The majority of transactions (45.2% of cases) in the sample were from the most recent period of *Recovery* and the least were from the period of *Crisis* (19.2% of cases). More detailed segmentation based on time period shown below:

Figure 9: Number of transactions by time period in operating sample

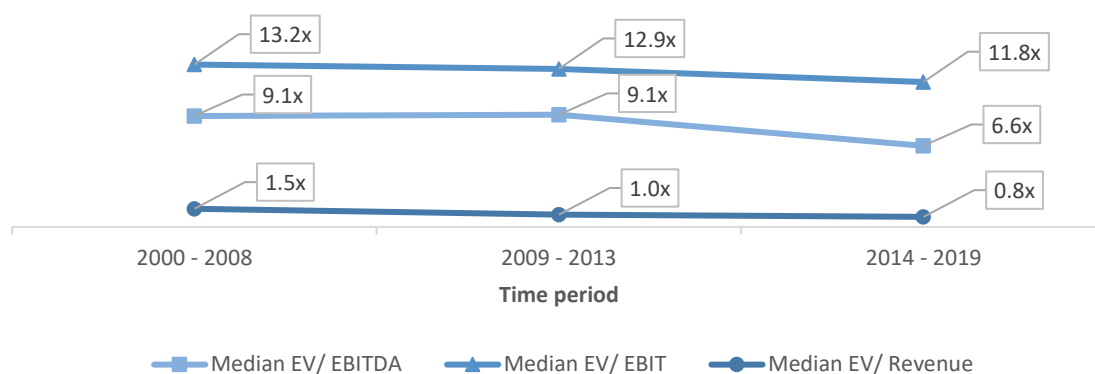


Source: Own work.

I expected that in times of economic growth, i.e. in periods between 2000 and 2008 and 2014 and 2019, valuation multiples would be higher. On the contrary, I anticipated that *Crisis* would grant lower valuation multiples. The results show that EV/EBITDA multiples were actually lower in times of increased economic activity, with highest multiples (although close in scale to period of *Expansion*) recorded in *Crisis*. Significantly lower multiples were achieved in the period of recovery. In terms of EV/EBIT and EV/Revenue multiples were highest at the time of expansion and gradually decreased at times of crisis and even further at time of *Recovery*.

It seems the investors went through an optimistic period from the outset of the millennium, paved with Slovenia's economic and political focus on EU integration by preparing for admission into the European Union (which occurred in 2004) and admission into European Monetary Union (Slovenia became a member of EMU, together with accepting EUR as official currency in 2007). Also, it seems that optimistic acquisition valuations continued during crisis, perhaps on the wave of newly established higher internationalised standards seen by (foreign) investors that did not decrease certain valuation multiples significantly (notwithstanding EV/Revenue multiple). In the period of recovery, seemingly investors became cautious on the negative and long-lasting performance during crisis, not willing to acquire at higher valuation multiples. Also, the recovery period's growth lasted shortly than initial expansion in the beginning of 2000s, hence the multiples might not have reached peak levels before the end of such economic period. Also, important is that during crises economic activity tends to decrease companies' performance and therefore initial multiple levels accounting only past year performance might be higher than they would be if using normalised performance based on several trailing years.

Figure 10: Operating sample's multiples by time period



Source: Own work.

2.4.4 Segmentation by target's indebtedness

I have divided transactions into five indebtedness classes based on target's Net financial debt/Revenue. By dividing financial debt with Revenue, I obtained relative indebtedness measure that gave us comprehensive values across total operating sample, which would not have same quality of logical explanation if I used other performance related measures that could be negative in size (e.g. EBIT or EBITDA) and would grant logically unexplainable values. Despite choosing NFD/Revenue indebtedness measure that is in practise less commonly used, it is still very informative and enabled analyses on more informative level than I could have achieved if I omitted transactions from the sample that would grant unexplainable indebtedness values from alternative options.

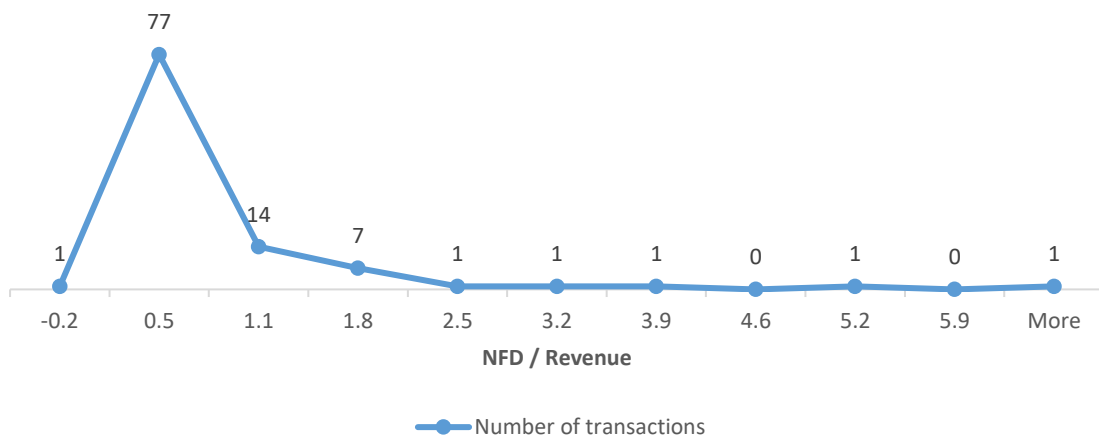
I allocated transactions into the following classes: *Very low indebtedness* where NFD/Revenue was below 5.0%, *Low indebtedness* for transactions between 5.0% and 15.0%, *Medium indebtedness* for transactions between 15.0% and 35.0%, *High indebtedness* for transactions between 35.0% and 100.0% as well as *Very high indebtedness* for transactions above 100.0% NFD/Revenue. *Very low indebtedness* class includes companies that had almost none debt, or had even more cash items on the balance sheet that was the sum of their debt. Given their similar conservative capital structure I put them in the same category. In total there were 24.0% of transaction in this class, having on average EUR 0.3mn of excess cash and on average EUR 126.8mn of revenue. Based on sectors, most companies in this class came from retail segment, followed by pharmaceutical and medical companies, as well as brokerage or similar (e.g. energy trading field) and industrial companies. *Low indebtedness* companies were 20.2% and had on average EUR 8.2mn of net debt on the balance sheet and on average EUR 70.5mn revenue. Sector wide most represented were consumer goods companies, telecommunications, media and technology companies, and also some industrial companies. *Medium indebtedness* class represented 23.1% of the operating sample, companies here were following a looser indebtedness policy and had on average EUR 44.2mn of net debt on the balance sheet and average revenue of EUR 189.0mn. Most represented sectors included industrial companies, consumer goods and leisure companies. In *high indebtedness* I put a wide NFD/Revenue range which corresponds to the nature of indebtedness, namely one could begin the period with moderate NFD/Revenue at 35% however, as economy faces distress companies decrease their

revenues and could elevate the ratio to significantly higher levels, which tend to all be above the still permissible rate to be recognised as creditworthy by financial institutions. In this class I had 21.2% of transactions that on average had EUR 10mn of net debt on EUR 235.9 average revenue. Sector wide almost all transactions were in consumer goods industry, where there were some conglomerates companies, representing sizeable groups in Slovenian economy. Also, there were a lot of lower performing industrial companies. In *very high indebtedness* class, there were companies which were put on sale mainly due to too high indebtedness levels. Companies here were either close to or in financial distress, had debtors trying to secure the residual values and healthy business cores by either splitting them apart or putting them into insolvency procedures. There were 11.5% of transactions in this category, on average having EUR 73.5mn of net debt and average revenue of EUR 51.7mn.

Target companies' indebtedness showed variability. The operating sample's mean NFD/Revenue was 45.8% and median 19.1%. The lowest relative indebted company had 23.1% excess cash over revenue, while most relatively indebted company had NFD/Revenue ratio of 660.1%.

Indebtedness distribution is positively skewed (4.5), has a positive kurtosis (23.1) and standard deviation of 95.0%. Indebtedness does not follow normal distribution but is rather asymmetric to upper bound values. NFD/Revenue of the operating sample had the following distribution:

Figure 11: NFD/Revenue distribution by transactions in operating sample



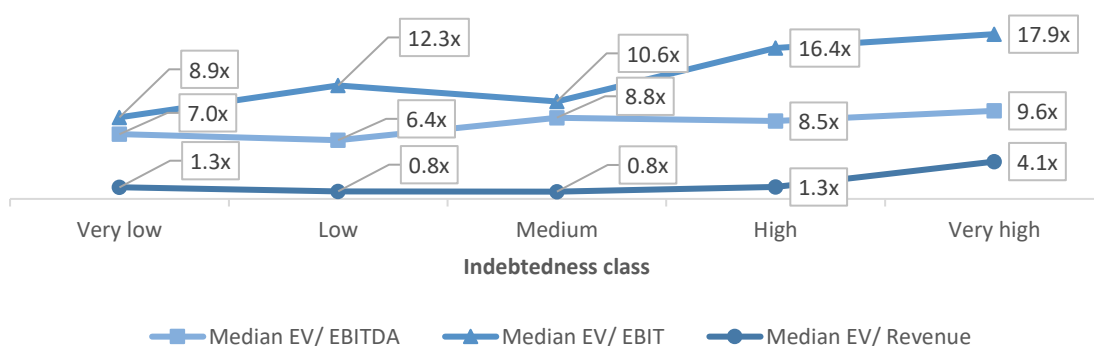
Source: Own work.

It was expected that higher indebtedness would grant lower multiples, unless the indebtedness level was excessive (i.e. *very high*), when usually companies' performance is lower and target's value derives from other valuables such as from assets, brands, real estate, financial assets etc. Also, I anticipated them to be lower at *very low* indebtedness levels, due to lack of debt financing sources in the capital structure, which is rarely optimal. The expectations were not confirmed by real examples. Looking across all examined multiples all showed highest values when indebtedness was highest. Indicating that companies with worst credit rating were sold at highest performance multiple. As mentioned in other multiple segmentations this could be due to decreased performance during such times which is not in line with normal levels typical for these companies in the past, however it could

also be due to other value drivers not linked to the performance. From Median EV/EBITDA perspective relative valuation was lowest for *low indebtedness* class, was slightly higher for *very low* class and grew further with higher indebtedness. Similar pattern occurred in Median EV/Revenue where lowest multiples were at *medium* and *low indebtedness*. Moreover, multiples in this category showed highest difference between highest and lowest values. The most interesting was Median EV/EBIT, which showed capital structure conservatism decreases multiples most significantly, while *low indebtedness* multiples are for 3.4 higher. Again, the *medium* level decreases them and levels above medium (i.e. *high* and *very high*) again proved beneficial in valuation.

I arranged the indebtedness into logical classes, which granted the following results:

Figure 12: Operating sample's multiples by indebtedness class



Source: Own work.

Despite the volatility of results, from valuation perspective it is clear that low indebtedness levels regardless of multiples category are not beneficial and that multiples grew with higher indebtedness. However, caution should remain in place for the aforementioned reason, which is lack of insight on reasons for high valuation and value drivers, as well as one-year prior performance compared to previous years to show whether it was negatively impacted by potential financial distressed situations caused by the same very reason.

2.4.5 Segmentation by target's business sector

When examining transaction by their dominant sectors I obtained 21 categories, which I further condensed into 6 categories, namely: *Industrial (I)*, *Telecommunications, media, technology (TMT)*, *Pharma and medical (PM)*, *Financial and conglomerates (FC)*, *Consumer goods, retail and tourism (CGRT)*, *Energy and infrastructure (EI)*. Condensed sector gives us more general categories that operate under similar dynamics and are usually representing segmentation of financial advisor's expertise focus, of course subject to great variability between advisory companies.

The *industrial (I)* segment includes companies from automotive, chemicals and materials and electronics manufacturers, together with companies coming from segment of transportation and other manufacturing. Companies in these segments are asset heavy, operate under high fixed costs and initial investments, margins tend to be slightly lower and

the profits largely rely on immensely high volumes. Capital expenditure needs are significant and there are typical investment cycles span over many years with great dependency also on position in the value chain. In *telecommunications, media, technology (TMT)* I included companies from computer science, telecommunication, media and internet with ecommerce sector (however no ecommerce retailers were included in the operating sample). Companies in these segments provide scalable solutions that could generate relatively low marginal costs for additional users/consumers. Except for internet service companies, companies under *TMT* have relatively high investment needs in form of infrastructure (telecommunications, media) or recurring research and development (technology production companies), that have to be spread over highest possible user base to achieve economies of scale and scope. In *Pharma and medical (PM)* investment and development cycles are even longer than in industrial sector, with resulting products and services subject of vast regulation, cross-country differential treatment with possible limits on trade and further also consolidated global industry, controlled by large global players. Here I included companies from pharmaceutical and medical industry, including drug wholesaler and retailers. Under *Financial and conglomerates (FC)* I included companies with main activity being operating a holding and managing group subsidiaries or financial brokerage. Condensed sector *Consumer goods, retail and tourism (CGRT)* includes variety of companies that produce resources or products for consumer needs, together with retailers selling these products to consumers. Additionally, I included companies active in leisure; from restaurants, tourism and hospitality companies that share core industry dynamics, which is customer orientation and monetisation through retail sales. Companies' performance here largely depends on branding and marketing expenditures, product innovation and efficient working capital management which is, except for tourism segment, largely dependent also on inventory management. In *Energy and infrastructure (EI)* companies there are heavily regulated and require significant initial investment needs. The regulation usually comes because services they provide are needed for normal operations of the economy and building of parallel infrastructure would be economically unfeasible. In many occasions they need to provide services to all people on a specified territory even if their economic profit on certain areas is questionable or on the contrary the profit is well anticipated due to their monopolistic position. The governments tend to regulate their performance by setting the appropriate levels of return or subsidies, usually providing the operators additional upside opportunities only by running an efficient operation that is minimising the running costs with having a limited influence on the revenue generation.

When narrowing down sectors, I applied the following condensation policy:

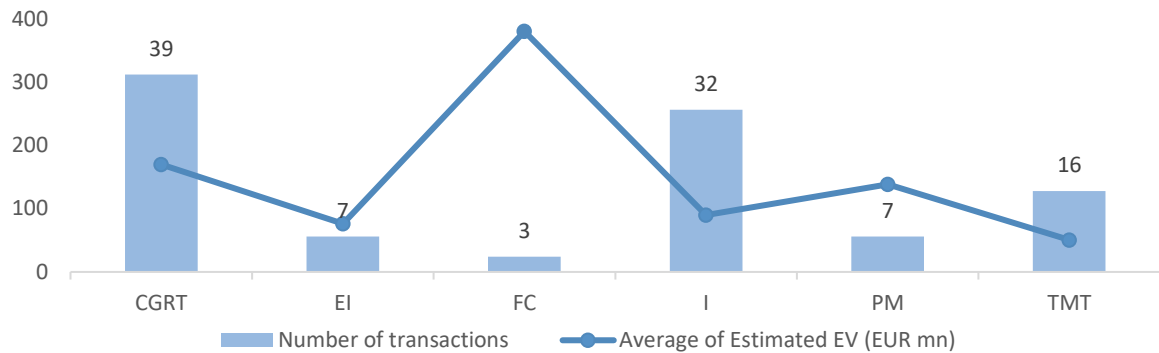
Table 4: Target's business sector condensation

Condensed sector	Target sector
Industrial (I)	Automotive Chemicals and materials Industrial products and services Industrial: Electronics Manufacturing (other) Transportation
Telecommunications, media, technology (TMT)	Computer services Telecommunications: Carriers Media Internet / ecommerce
Pharma and medical (PM)	Medical Medical: Pharmaceuticals
Financial and conglomerates (FC)	Other financial Services Other
Consumer goods, retail and tourism (CGRT)	Agriculture Consumer: Foods Consumer: Other Consumer: Retail Leisure
Energy and infrastructure (EI)	Energy Construction

Source: Own work.

The array shows that most transactions happened in space of consumer goods, retail and tourism (37.5%), followed by transactions in general industrials (30.8%), while the third most active segment was telecommunications, media and technology (15.4%). By transaction value, highest were in conglomerates and financial services (excluding typical financial institution companies such as banks, insurance companies etc.), and lowest in telecommunications, media and technology sector.

Figure 13: Operating sample's number of transactions and average value per condensed sector

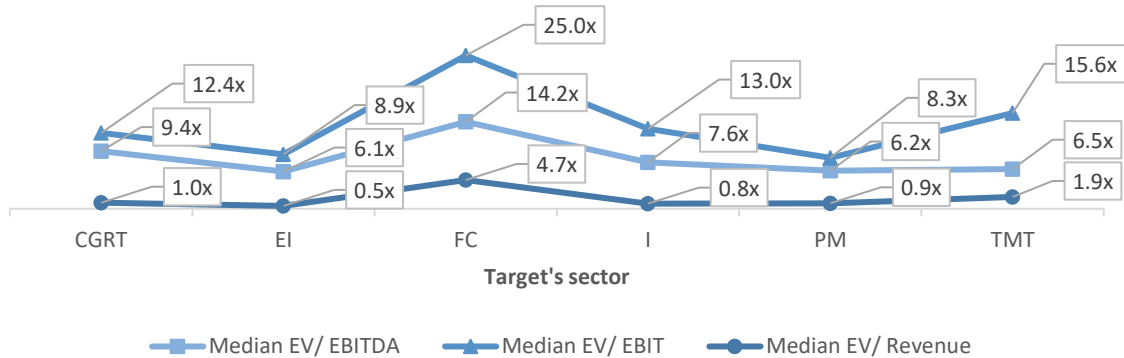


Adapted from Merger Market (2020a).

I anticipated that sectors perceivably connected with higher growth rates and profitability would translate into higher sector valuation multiples. Thus, assuming high multiples on *telecommunications, media and technology* as well as *consumer goods, retail and tourism* companies where Slovenian environment could have showed growth with increased general consumption owing to country's economic development.

Interestingly, largest obtained multiples of all types were for *financial services and conglomerates* companies, where it is important to disclose that included conglomerate company controlled many *CGRT* companies and thus a large portion of domestically known brands. Also, highly ranked multiples were recorded for sectors *consumer goods, retail and tourism* and *telecommunications, media, technology*, as anticipated, together with *industrial* sector. Seemingly the lowest multiples were recorded in segments *pharma and medical* and *energy and infrastructure*. Nonetheless, multiples showed variability across different types. Median EV/EBITDA was highest for *FC* with 14.2x, followed by *CGRT* with 9.4x and *I* with 7.6x. Difference between largest and lowest EV/EBITDA multiple was 132.8%. Median EV/EBIT was extremely high for *FC* with 25.0x, followed by *TMT*'s 15.6x and slightly lower *I* and *CGRT* with 13.0x and 12.4x respectively. In this category lowest multiples were achieved by *EI*'s 8.9x and *PM*'s 8.3x. The highest multiple was 201.2% higher from the lowest one. EV/Revenue multiples showed greatest variability, with highest multiple being 840.0% higher than lowest one. Significantly large were sectors *FC* with 4.7x and *TMT* with 1.9x, while significantly lowest was *EI* with 0.5x.

Figure 14: Operating sample's multiples by target's sector



Source: Own work.

When interpreting the results, one has to take into account the frequency of transactions in the sample. Under this method, I could imply that most reliable results came from sectors *consumer goods, retail and tourism* and *industrial*, perhaps also from *telecommunications, media and technology* which jointly represented 83.7% of transactions. For other sectors results are less reliable due to limited number of transactions in the sample. Secondly the highest multiples achieved by segment *FC* in two out of three cases included a very profitable financial services companies and one was a conglomerate group, taking into account group financials, thus EV/Revenue multiple might be less reliable given the significant portion (1/3 cases) of a mix of companies included without providing us a sense of profitability. In *EI* companies tend to have low margins on relatively high revenues. In *PM* situation was similar and in each *EI* and *PM* there was a case with negative performance multiples (EV/EBITDA, EV/EBIT) which had significant impact on the result (1/7 cases).

2.5 Transaction value with vs. without sell-side financial advisor

Given the aforementioned calculation (Chapter 2.4.2) of financial advisor's engagement premium we can imply that on median multiple level, financial advisor grants a premium of 28.3% or 2.0x in EV/EBITDA and 66.3% or 6.3x in EV/EBIT, however also a discount of 9.6% or 0.1x in EV/Revenue multiple. The calculated multiples should give us a rough estimate on relative added-value given the historical sample, by computing all of them one should obtain a range of EV, with the actual value being somewhere in between. Median figures are in practise often used method of obtaining relative valuation multiples that give more accurate values than using averages (averages might be applicable if examining closely related items with low variability between them, which is not the case in this instance). Given sizeable sample, I consider median values as commensurate relative valuation indicators.

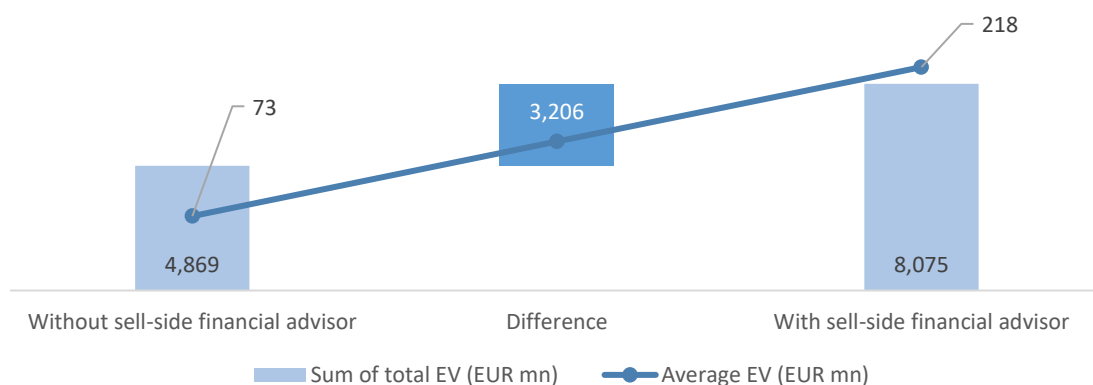
Table 5: Financial advisor's engagement premium in relative valuation multiples

Financial advisor	Median EV/EBITDA	Median EV/EBIT	Median EV/Revenue
Without sell-side financial advisor	7.1	9.4	1.0
With sell-side financial advisor	9.1	15.7	0.9
Financial advisor's engagement premium (x)	2.0	6.3	-0.1
Financial advisor's engagement premium (%)	28.3	66.4	-9.6

Source: Own work.

As we can see on average sell-side financial advisors have been retained in larger transactions, with average EV of EUR 218mn, while average EV for companies without financial advisor has been EUR 73mn. Total EV of transactions with financial advisor accounted for EUR 8.1bn versus EUR 4.9bn without advisor. The total differential value of transactions with sell-side advisors vs. the transactions without them accounted for EUR 3.2bn.

Figure 15: Difference in value between transactions with engagement of sell-side financial advisor and without it



Source: Own work.

To show more tangible and relatable EUR amounts that transactions with financial advisors delivered over the ones without their engagement, I calculated the operating sample's average for specific financial performance metrics used in the relative valuation multiples.

Table 6: Operating sample's average financial metrics

EUR mn	EBITDA	EBIT	Revenue
Operating sample's average	10.9	3.7	144.2

Source: Own work.

Based on average financial metrics EV for transactions with sell-side financial advisor would show additional EUR 21.8 value based on EV/EBITDA valuation, additional EUR 23.5mn value based on EV/EBIT valuation and decrease of EUR 13.9mn based on EV/Revenue valuation. It is again important stressing out that based on historic sample actual transaction value likely lies in an array combining each valuation multiple.

Table 7: Implied EV values given the average operating sample's financial metrics

Financial advisor	Implied EV (EV/EBITDA based)	Implied EV (EV/EBIT based)	Implied EV (EV/Revenue based)
Without sell-side financial advisor	76.9	35.4	145.2
With sell-side financial advisor	98.7	58.9	131.2
Financial advisor's engagement premium	21.8	23.5	-13.9

Source: Own work; in EUR mn

2.6 Regression analysis

Further to segmentation analysis, I examined impact of transaction characteristics on transaction multiples also through regression analysis.

Dependent variables included multiples, namely:

- (1) EV / EBITDA (*EV_EBITDA* or *p\$EV_EBITDA*)
- (2) EV / EBIT (*EV_EBIT* or *p\$EV_EBIT*)
- (3) EV / Revenue (*EV_Revenue* or *p\$EV_Revenue*)

Explanatory variables in my case included the following:

- (1) Inclusiveness of sell-side financial advisor (*Sellside_finadvisor* or *p\$Sellside_finadvisor*)
- (2) EBITDA margin (*EBITDA_margin* or *p\$EBITDA_margin*)
- (3) Time period 2000 – 2008 (*Expansion* or *p\$TimeExp*)
- (4) Time period 2009 – 2013 or (*Crisis* or *p\$TimeCri*)
- (5) Time period 2014 – 2019 or (*Recovery* or *p\$TimeRec*)
- (6) Consumer goods, retail and tourism sector (*CGRT* or *p\$SectorConsumer*)
- (7) Energy and infrastructure sector (*EI* or *p\$SectorEnergy*)
- (8) Financial services and conglomerates sector (*FC* or *p\$SectorConglomerates*)
- (9) Infrastructure sector (*I* or *p\$SectorIndustrial*)
- (10) Pharmaceuticals and medical sector (*PM* or *p\$SectorPharma*)
- (11) Telecommunications, media and technology sector (*TMT* or *p\$SectorTelco*)

(12) Net financial debt / Revenue ratio (*NFD_Revenue* or *p\$NFD_Revenue*)

Sellside_finadvisor was dichotomous variable. EBITDA_margin and NFD_Revenue were the only two continuous explanatory variables, while all other explanatory variables were contextual, i.e. being constructed as dummy variables, showing the observation's attribution to either of time periods (Expansion, Crisis or Recovery) and to either of the sectors (CGRT, EI, FC, I, PM, or TMT).

Table 8: Descriptive statistics of operating sample

	<i>EBITDA margin</i>	<i>Announced date</i>	<i>Calculated NFD/Revenue</i>
Mean	0.12	19.12.2011	0.46
Standard Error	0.02	188.98	0.09
Median	0.12	31.05.2013	0.19
Mode	0.05	30.06.2004	0.00
Standard Deviation	0.20	1,927.24	0.95
Sample Variance	0.04	3,714,237.27	0.90
Kurtosis	11.57	-1.02	23.10
Skewness	-2.16	-0.37	4.45
Range	1.62	7,020.00	6.83
Minimum	-0.92	7.09.2000	-0.23
Maximum	0.70	27.11.2019	6.60
Sum	12.74	103.00	47.66
Count	104.00	371.67	104.00
Confidence Level (95.0%)	0.04	19.12.2011	0.18

Source: Own work.

In terms of correlation, dependent variables were correlated to each other, with strong correlation between EV_EBITDA and EV_EBIT (73.2%), as well as moderate correlation between EV_EBITDA and EV_EBIT with EV_Revenue (58.5% and 55.4% respectively).

In general, there was weak to none correlation between dependent and explanatory variables. Although close to none, EV_EBITDA showed highest correlation of 20.4% with CGRT. Similarly, EV_EBIT had no correlation with highest correlation score of -18.6% with Crisis. EV_Revenue had weak correlation of 31.0% with NFD_Revenue, followed by 23.0% correlation with Expansion.

In general, there was very low correlation between explanatory variables, rarely above 20.0% with some outliers. Highest absolute correlation being a strong -67.5% between Expansion and Recovery, followed by moderate -51.6% between CGRT and I, and -44.3% between Crisis and Recovery.

Table 9: Cross-correlation table between dependent and explanatory variables

	<i>EV_</i> <i>EBITDA</i>	<i>EV_</i> <i>EBIT</i>	<i>EV_</i> <i>Revenue</i>	<i>Sellside_</i> <i>finadvisor</i>	<i>EBITDA_</i> <i>margin</i>	<i>Expan-</i> <i>sion</i>	<i>Crisis</i>	<i>Recovery</i>	<i>CGRT</i>	<i>EI</i>	<i>FC</i>	<i>I</i>	<i>PM</i>	<i>TMT</i>	<i>NFD_</i> <i>Revenue</i>
<i>EV_EBITDA</i>	1.00														
<i>EV_EBIT</i>	0.73	1.00													
<i>EV_Revenue</i>	0.59	0.55	1.00												
<i>Sellside_</i> <i>finadvisor</i>	0.03	-0.01	-0.04	1.00											
<i>EBITDA_</i> <i>margin</i>	0.18	0.05	-0.07	0.17	1.00										
<i>2000_2008</i>	0.17	0.14	0.23	-0.18	-0.00	1.00									
<i>2009_2013</i>	-0.05	-0.19	-0.05	-0.01	0.05	-0.36	1.00								
<i>2014_2019</i>	-0.12	0.01	-0.18	0.17	-0.04	-0.68	-0.44	1.00							
<i>CGRT</i>	0.20	-0.01	-0.02	0.05	0.02	0.05	0.08	-0.11	1.00						
<i>EI</i>	-0.05	-0.01	-0.10	-0.12	-0.05	-0.04	-0.03	0.07	-0.21	1.00					
<i>FC</i>	0.05	0.01	0.20	0.11	0.15	0.11	0.06	-0.16	-0.13	-0.05	1.00				
<i>I</i>	-0.06	0.00	-0.07	-0.02	-0.02	-0.06	0.05	0.02	-0.52	-0.18	-0.12	1.00			
<i>PM</i>	-0.07	-0.01	-0.08	-0.04	-0.04	-0.04	-0.13	0.14	-0.21	-0.07	-0.05	-0.18	1.00		
<i>TMT</i>	-0.14	0.02	0.15	0.02	-0.01	0.02	-0.07	0.04	-0.33	-0.12	-0.07	-0.28	-0.12	1.00	
<i>NFD_</i> <i>Revenue</i>	-0.12	0.08	0.32	-0.08	-0.21	0.01	0.18	-0.15	0.04	-0.10	0.11	-0.13	0.08	0.07	1.00

Source: Own work.

Given the correlation results, I did not anticipate explanatory variables would grant a fully normative regression model for determining companies' valuations, but rather give us an idea whether certain variables could improve the explained variability of dependent variables given my sample. In particular I wanted to check whether the regression model improves if we add Sellside_finadvisor variables to it. I performed such linear regressions for all dependent variables and ran additional exercises to test the model and other variables' characteristics where applicable. Finally, I constructed models that proved statistical significance of explanatory variables at the selected confidence level.

2.6.1 Predicting EV / EBITDA

Prediction without sell-side financial advisor

The regression analysis predicting EV_EBITDA without inclusion of p\$Sellside_finadvisor was conducted using the following regression equation, where p\$Time and p\$Sector included dummy variables:

$$p\$EV_{EBITDA} \sim p\$EBITDA_{margin} + p\$NFD_{Revenue} + p\$Time + p\$Sector \quad (2)$$

Dummy variables in p\$Time include p\$TimeCri, p\$TimeRec and consider p\$TimeExp as the basis. Dummy variables in p\$Sector include p\$SectorEnergy, p\$SectorConglomerates, p\$SectorIndustrial, p\$SectorPharma and p\$SectorTelco, while having p\$SectorConsumer as the basis.

The regression model shows low coefficient of determination of 11.4%, which means the variability of EV_EBITDA is to a low degree explained by the independent variables. Overall, the explanatory variables do not show statistical significance (at 5%) predicting EV_EBITDA.

Obtained coefficients show us that the only significant explanatory variable is TMT, statistically significant at 10%. Meaning that if target company was in sector TMT, EV_EBITDA multiple of the transaction would be by 13.6 lower than it would have been if target company had been in sector CGRT on average across the sample with other variables being constant at significance level of 10%.

All other explanatory variables are statistically insignificant and I cannot consider them as real causal factors for EV_EBITDA multiples. EBITDA_margin has positive linear relationship with EV_EBITDA. On the contrary, NFD_Revenue has negative relationship. Similarly, the relationship by Crisis, Recovery is negative compared to the reference time period Expansion and relationship by each EI, FC, I, PM, as well as TMT is negative compared to the reference sector CGRT.

Prediction with sell-side financial advisor

The regression analysis predicting EV_EBITDA with inclusion of p\$Sellside_finadvisor was conducted using the following regression equation (with p\$Time and p\$Sector including dummy variables):

$$p\$EV_{EBITDA} \sim p\$EBITDA_{margin} + p\$NFD_{Revenue} + p\$Time + p\$Sector + p\$Sellside_{finadvisor} \quad (3)$$

The regression model showed low coefficient of determination of 11.5%, which means the variability of EV_EBITDA is to a low degree explained by the independent variables. Again, the explanatory variables do not show statistical significance (at 5%) predicting EV_EBITDA.

Obtained coefficients show that also in case of Sellside_finadvisor inclusion the only significant explanatory variable is TMT, statistically significant at 10%. Meaning that if target company was in sector TMT, EV_EBITDA multiple of the transaction would be by 13.6 lower than it would have been if target company had been in sector CGRT on average across the sample with other variables being constant at significance level of 10%.

All other explanatory variables are statistically insignificant and I could not consider them as real causal factors for EV_EBITDA multiples. EBITDA_margin has positive linear relationship with EV_EBITDA. On the contrary, NFD_Revenue has negative relationship. Similarly, the relationship by Crisis, Recovery is negative compared to the reference time period Expansion and relationship by each EI, FC, I, PM, as well as TMT is negative compared to the reference sector CGRT. Inclusion of Sellside_finadvisor is positive but insignificant relationship with EV_EBITDA.

2.6.2 Predicting EV / EBIT

Prediction without sell-side financial advisor

The regression analysis predicting EV_EBIT without inclusion of p\$Sellside_finadvisor was conducted using the following regression equation (with p\$Time and p\$Sector including dummy variables):

$$p\$EV_{EBIT} \sim p\$EBITDA_{margin} + p\$NFD_{Revenue} + p\$Time + p\$Sector \quad (4)$$

The regression model shows low coefficient of determination of 6.3%, which means the variability of EV_EBIT is to a low degree explained by the independent variables in the model. Obtained regression coefficients are the following:

Table 10: Regression coefficients predicting EV_EBIT without Sellside_finadvisor

	Estimate	Std. Error	t value	Pr(> t)	Signif.
(Intercept)	25.312	33.759	0.750	0.455	
p\$EBITDA_margin	71.007	79.049	0.898	0.371	
p\$NFD_Revenue	22.601	16.838	1.342	0.183	
Period controls	Yes	Yes	Yes	Yes	*
Industry controls	Yes	Yes	Yes	Yes	
<hr/>					
Residual standard error	150.300 on 94 degrees of freedom				
Multiple R-squared	0.063				
Adjusted R-squared	-0.027				
F-statistic	0.703 on 9 and 94 DF				
P-value	0.705				

Source: Own work.

Note: signif. codes: '***' 0.001, '**' 0.01, '*' 0.05

Obtained coefficients show us that the only significant explanatory variable is Crisis, statistically significant at 5%. Meaning that if transaction happened in time period of Crisis, EV_EBIT multiple of the transaction would be by 95.2 lower than it would have been if transaction had happened during Expansion on average across the sample with other variables being constant at significance level of 5%.

All other explanatory variables are statistically insignificant and I cannot consider them as real causal factors for EV_EBIT multiples. EBITDA_margin and NFD_Revenue have positive linear relationship with EV_EBIT. Similarly sectors EI and I have positive relationship over the reference sector CGRT, whilst for sectors FC, PM and TMT the relationship is negative over the reference sector. In terms of time period, both Crisis and Recovery show negative relationship over reference period of Expansion.

Prediction with sell-side financial advisor

The regression analysis predicting EV_EBIT with inclusion of p\$Sellside_finadvisor was conducted using the following regression equation (with p\$Time and p\$Sector including dummy variables):

$$p$EV_{EBIT} \sim p$EBITDA_{margin} + p$NFD_{Revenue} + p$Time + p$Sector + p$Sellside_{finadvisor} \quad (5)$$

The regression model shows low coefficient of determination of 6.3%, which means the variability of EV_EBIT is to a low degree explained by the independent variables in the model. Obtained regression coefficients are the following:

Table 11: Regression coefficients predicting EV_EBIT with Sellside_finadvisor

	Estimate	Std. Error	t value	Pr(> t)	Signif.
(Intercept)	25.346	34.845	0.727	0.469	
p\$EBITDA_margin	71.054	80.211	0.886	0.378	
p\$NFD_Revenue	22.597	16.956	1.333	0.186	
Period controls	Yes	Yes	Yes	Yes	*
Industry controls	Yes	Yes	Yes	Yes	
p\$Sellside_finadvisor	-0.141	32.689	-0.004	0.997	
Residual standard error	151.100 on 93 degrees of freedom				
Multiple R-squared	0.063				
Adjusted R-squared	-0.038				
F-statistic	0.626 on 10 and 93 DF				
P-value	0.788				

Source: Own work.

Note: signif. codes: '****' 0.001, '***' 0.01, '**' 0.05

Obtained coefficients show us that the only significant explanatory variable is Crisis, statistically significant at 5%. Meaning that if transaction happened in time period of Crisis, EV_EBIT multiple of the transaction would be by 95.2 lower than it would have been if transaction had happened during Expansion on average across the sample with other variables being constant at significance level of 5%.

All other explanatory variables are statistically insignificant and I cannot consider them as real causal factors for EV_EBIT multiples. Similarly, EBITDA_margin and NFD_Revenue have positive linear relationship with EV_EBIT, also similar are relationships of sectors EI and I over the reference sector CGRT, whilst sectors FC, PM and TMT have negative one. In terms of time period, both Crisis and Recovery again shows negative relationship over reference period of Expansion. Inclusion of Sellside_finadvisor has slightly negative relationship with EV_EBIT as well.

2.6.3 Predicting EV / Revenue

Prediction without sell-side financial advisor

The regression analysis predicting EV_Revenue without inclusion of p\$Sellside_finadvisor was conducted using the following regression equation (with p\$Time and p\$Sector including dummy variables):

$$p$EV_{Revenue} \sim p$EBITDA_{margin} + p$NFD_{Revenue} + p$Time + p$Sector \quad (6)$$

The regression model shows low coefficient of determination of 20.1%, which means the variability of EV_Revenue is to a low degree explained by the independent variables in the model. Obtained regression coefficients are the following:

Table 12: Regression coefficients predicting EV_Revenue without Sellside_finadvisor

	Estimate	Std. Error	t value	Pr(> t)	Signif.
(Intercept)	2.288	0.620	3.693	0.000	***
p\$EBITDA_margin	-0.388	1.451	-0.268	0.790	
p\$NFD_Revenue	0.937	0.309	3.033	0.003	**
Period controls	Yes	Yes	Yes	Yes	
Industry controls	Yes	Yes	Yes	Yes	
Residual standard error	2.759 on 94 degrees of freedom				
Multiple R-squared	0.202				
Adjusted R-squared	0.125				
F-statistic	2.640 on 9 and 94 DF				
P-value	0.009				

Source: Own work.

Note: signif. codes: '***' 0.001, '**' 0.01, '*' 0.05

Obtained coefficients show us three significant explanatory variables, namely NFD_Revenue at 1% significance level and Crisis as well as Recovery 10%. The results grant the following interpretations: if target company's NFD_Revenue has been 1% higher, EV_Revenue multiple increased by 0.9. Additionally, if transaction happened in time period of Crisis or Recovery, EV_Revenue multiple of the transaction would be by 1.5 or 1.1 lower, respectively, than they would have been if transactions had happened during Expansion on average across the sample with other variables being constant at significance level of 10%.

All other explanatory variables are statistically insignificant and I cannot consider them as real causal factors for EV_Revenue multiples. NFD_Revenue shows positive linear relationship, together with sectors FC, I and TMT over the reference sector CGRT, while sector EI and PM's relationship is negative. EBITDA_margin has negative relationship, which also occurs for Crisis and Recovery over the reference time period of Expansion.

Prediction with sell-side financial advisor

The regression analysis predicting EV_Revenue with inclusion of p\$Sellside_finadvisor was conducted using the following regression equation (with p\$Time and p\$Sector including dummy variables):

$$p$EV_{Revenue} \sim p$EBITDA_{margin} + p$NFD_{Revenue} + p$Time + p$Sector + p$Sellside_{finadvisor} \quad (7)$$

The regression model shows low coefficient of determination of 20.1%, which means the variability of EV_Revenue is to a low degree explained by the independent variables in the model. Obtained regression coefficients are the following:

Table 13: Regression coefficients predicting EV_Revenue with Sellside_finadvisor

	Estimate	Std. Error	t value	Pr(> t)	Signif.
(Intercept)	2.296	0.640	3.590	0.001	***
p\$EBITDA_margin	-0.378	1.472	-0.256	0.798	
p\$NFD_Revenue	0.936	0.311	3.009	0.003	**
Period controls	Yes	Yes	Yes	Yes	
Industry controls	Yes	Yes	Yes	Yes	
p\$Sellside_finadvisor	-0.032	0.600	-0.054	0.957	
<hr/>					
Residual standard error	2.774 on 93 degrees of freedom				
Multiple R-squared	0.202				
Adjusted R-squared	0.115				
F-statistic	2.351 on 10 and 93 DF				
P-value	0.016				

Source: Own work.

Note: signif. codes: '***' 0.001, '**' 0.01, '*' 0.05

Similar to the previous model, obtained coefficients show three significant explanatory variables, namely NFD_Revenue at 1% significance level and Crisis as well as Recovery 10%. Also granting the following interpretations: if target company's NFD_Revenue has been 1% higher, EV_Revenue multiple increased by 0.9. Additionally, if transaction happened in time period of Crisis or Recovery, EV_Revenue multiple of the transaction would be by 1.5 or 1.1 lower, respectively, than they would have been if transactions had happened during Expansion on average across the sample with other variables being constant at significance level of 10%.

All other explanatory variables are statistically insignificant and I cannot consider them as real causal factors for EV_Revenue multiples. NFD_Revenue shows positive linear relationship, together with sectors FC, I and TMT over the reference sector CGRT and sectors EI and PM as negative. Additionally, EBITDA_margin has negative relationship, which also occurs for Crisis and Recovery over the reference time period of Expansion. Relationship between dependent variable and Sellside_finadvisor is insignificant and slightly negative.

2.6.4 Models with significant explanatory power of independent variables

Prediction of EV / EBITDA with significant coefficients

The regression model (Model 1) predicting EV_EBITDA with significant explanatory variables has the following equation:

$$p$EV_{EBITDA} \sim p$Expansion + p$EBITDA_{margin} + p$CGRT \quad (8)$$

The regression model shows low coefficient of determination of 9.8%, which means the variability of EV_EBITDA is to a low degree explained by the significant independent variables in the model. Obtained regression coefficients are the following:

Table 14: Significant coefficients predicting EV_EBITDA

	Estimate	Std. Error	t value	Pr(> t)	Signif.
(Intercept)	0.504	3.577	0.141	0.888	
p\$Expansion	7.984	4.749	1.681	0.096	
p\$EBITDA_margin	21.583	11.641	1.854	0.067	
p\$CGRT	9.551	4.696	2.034	0.045	*
Residual standard error	23.160 on 100 degrees of freedom				
Multiple R-squared	0.098				
Adjusted R-squared	0.071				
F-statistic	3.619 on 3 and 100 DF				
P-value	0.016				

Source: Own work.

Note: signif. codes: '****' 0.001, '***' 0.01, '**' 0.05

Obtained coefficients show us three significant explanatory variables, namely sector CGRT at 5% significance level and EBITDA_margin as well as Expansion at 10%. The results grant the following interpretations: if target company's EBITDA_margin has been 1% higher, EV_EBITDA multiple increased by 21.6. Additionally, if transaction happened in time period of Expansion, EV_EBITDA multiple of the transaction would be by 8.0 higher. If transaction happened in sector CGRT, EV_EBITDA would be 9.6 higher. In all cases on average across the sample with other variables being constant at the respective significance levels.

Prediction of EV / EBITDA with significant coefficients and Sellside_finadvisor

The regression model (Model 2) predicting EV_EBITDA with significant explanatory variables and inclusion of Sellside_finadvisor has the following equation:

$$p$EV_{EBITDA} \sim p$Expansion + p$EBITDA_{margin} + p$CGR + p$Sellside_{finadvisor} \quad (9)$$

The regression model shows low coefficient of determination of 9.8%, which means the variability of EV_EBITDA is to a low degree explained by the significant independent variables in the model. Obtained regression coefficients are the following:

Table 15: Significant coefficients predicting EV_EBITDA with Sellside_finadvisor

	Estimate	Std. Error	t value	Pr(> t)	Signif.
(Intercept)	0.175	3.983	0.044	0.965	
p\$Expansion	8.151	4.850	1.680	0.096	
p\$EBITDA_margin	21.193	11.873	1.785	0.077	
p\$CGRT	9.503	4.726	2.011	0.047	*
p\$Sellside_finadvisor	0.943	4.921	0.192	0.849	
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Residual standard error:	23.270 on 99 degrees of freedom				
Multiple R-squared:	0.098				
Adjusted R-squared:	0.062				
F-statistic:	2.698 on 4 and 99 DF				
P-value:	0.035				

Source: Own work.

Note: signif. codes: '***' 0.001, '**' 0.01, '*' 0.05

Obtained coefficients show us that three explanatory variables were significant, namely sector CGRT at 5% significance level and EBITDA_margin as well as Expansion at 10%. The results grant similar interpretations: if target company's EBITDA_margin has been 1% higher, EV_EBITDA multiple increased by 21.2 if transaction happened during Expansion, EV_EBITDA would be 8.1 higher. And lastly if transaction happened in sector CGRT, EV_EBITDA would be 9.5 higher. In all cases on average across the sample with other variables being constant at the respective significance levels.

Variable Sellside_finadvisor is not significant, however shows positive regression coefficient.

Models testing

The ANOVA test of models' variance shows that Model 2 does not provide statistically significant additional explanatory power over Model 1 ($F_{(100,99)} = 0.037$, $p = 0.849$). Thus, although the inclusion of Sellside_finadvisor improves model's explanatory power its addition is statistically insignificant.

Sampling independence examination of Model 1 with Durbin-Watson test shows autocorrelation of -0.012 ($DW_{(t-1)}: 1.243$, $p = 0.018$). Meaning the residuals from OLS regression follow AR(1) at 5% significance level, however the autocorrelation is low.

Model 1's multicollinearity test shows very low collinearity between independent variables (mean VIF = 1.002), Expansion (VIF = 1.002, Tolerance = 0.998), EBITDA_margin (VIF = 1.000, Tolerance = 1.000), CGRT (VIF = 1.002, Tolerance = 0.998). The inclusion of independent variables is therefore justified.

Model 1 also exhibits homoscedasticity tested with Breusch-Pagan test ($BP_{(3)} = 3.387$, $p = 0.336$), meaning the residuals are equally distributed across the sample.

Prediction of EV / EBIT with significant coefficients

The regression model (Model 3) predicting EV_EBIT with significant explanatory variables has the following equation (with p\$Time including dummy variables):

$$p\$EV_{EBIT} \sim p\$Time \quad (10)$$

The regression model shows low coefficient of determination of 4.1%, which means the variability of EV_EBIT is to a low degree explained by the significant independent variables in the model. Obtained regression coefficients are the following:

Table 16: Significant coefficients predicting EV_EBIT

	Estimate	Std. Error	t value	Pr(> t)	Signif.
(Intercept)	45.040	24.120	1.867	0.065	
Period controls	Yes	Yes	Yes	Yes	*
Residual standard error	146.700 on 101 degrees of freedom				
Multiple R-squared	0.041				
Adjusted R-squared	0.022				
F-statistic	2.138 on 2 and 101 DF				
P-value	0.123				

Source: Own work.

Note: signif. codes: '***' 0.001, '**' 0.01, '*' 0.05

Obtained coefficients show us that Crisis is the only statistically significant explanatory variable at 5% significance level. Meaning that if transaction happened during period of Crisis, EV_EBIT multiple decrease by 84.1, compared to the reference time period of Expansion on average across the sample with other variables being constant.

Prediction of EV / EBIT with significant coefficients and Sellside_finadvisor

The regression model (Model 4) predicting EV_EBIT with significant explanatory variables and inclusion of Sellside_finadvisor has the following equation (with p\$Time including dummy variables):

$$p\$EV_{EBIT} \sim p\$Time + p\$Sellside_{finadvisor} \quad (11)$$

The regression model shows low coefficient of determination of 4.1%, which means the variability of EV_EBIT is to a low degree explained by the significant independent variables in the model. Obtained regression coefficients were the following:

Table 17: Significant coefficients predicting EV_EBIT with Sell_sidefinadvisor

	Estimate	Std. Error	t value	Pr(> t)	Signif.
(Intercept)	44.620	25.373	1.759	0.082	
Period controls	Yes	Yes	Yes	Yes	*
p\$Sellside_finadvisor	1.724	30.765	0.056	0.955	
Residual standard error	147.500 on 100 degrees of freedom				
Multiple R-squared	0.041				
Adjusted R-squared	0.012				
F-statistic	1.412 on 3 and 100 DF				
P-value	0.244				

Source: Own work.

Note: signif. codes: '***' 0.001, '**' 0.01, '*' 0.05

Similar to the previous model, the only obtained coefficient that shows statistical significance was Crisis at 5% significance level. Meaning that if transaction happened during period of Crisis, EV_EBIT multiple decrease by 84.1, compared to the reference time period of Expansion on average across the sample with other variables being constant.

Variable Sellside_finadvisor is not significant, however shows positive regression coefficient.

Models testing

The ANOVA test of models' variance shows that Model 4 does not provide statistically significant additional explanatory power over Model 3 ($F_{(101,100)} = 0.003$, $p = 0.955$). Thus, although the inclusion of Sellside_finadvisor improves model's explanatory power its addition is statistically insignificant.

Examined sampling independence of Model 3 with Durbin-Watson test shows autocorrelation of -0.021 ($DW_{(t-1)}: 1.399$, $p = 0.032$). Meaning that the residuals from OLS regression follow AR(1) at 5% significance level, hence the autocorrelation is low.

As Model 3 is linear regression model with one independent variable multicollinearity test is not applicable.

Model 3 also exhibits homoscedasticity tested with Breusch-Pagan test ($BP_{(2)} = 1.550$, $p = 0.461$), meaning the residuals are equally distributed across the sample.

Prediction of EV / Revenue with significant coefficients

The regression model (Model 5) predicting EV_Revenue with significant explanatory variables has the following equation (with p\$Time including dummy variables):

$$p$EV_{Revenue} \sim p$NFD_{Revenue} + p$Time \quad (12)$$

The regression model shows low coefficient of determination of 15.5%, which means the variability of EV_Revenue is to a low degree explained by the significant independent variables in the model. Obtained regression coefficients are the following:

Table 18: Significant coefficients predicting EV_Revenue

	Estimate	Std. Error	t value	Pr(> t)	Signif.
(Intercept)	2.447	0.472	5.178	1.16E-06	***
p\$NFD_Revenue	1.006	0.291	3.454	0.001	***
Time controls	Yes	Yes	Yes	Yes	*
Residual standard error	2.752 on 100 degrees of freedom				
Multiple R-squared	0.155				
Adjusted R-squared	0.130				
F-statistic	6.119 on 3 and 100 DF				
P-value	0.001				

Source: Own work.

Note: signif. codes: '***' 0.001, '**' 0.01, '*' 0.05

Obtained coefficients show us that NFD_Revenue is statistically significant at 0.1% and Crisis as well as Recovery are significant at 5%. The results grant the following explanations: if NFD_Revenue increased by 1%, EV_Revenue would increase by 1.0. Additionally, if transaction happened in Crisis or Recovery, EV_Revenue would be lower by 1.6 or 1.3 respectively. In all cases on average across the sample with other variables being constant at the respective significance levels.

Prediction of EV / Revenue with significant coefficients and Sellside_finadvisor

The regression model (Model 6) predicting EV_Revenue with significant explanatory variables and inclusion of Sellside_finadvisor has the following equation (with p\$Time including dummy variables):

$$p$EV_{Revenue} \sim p$NFD_{Revenue} + p$Time + p$Sellside_{finadvisor} \quad (13)$$

The regression model shows low coefficient of determination of 15.6%, which means the variability of EV_Revenue is to a low degree explained by the significant independent variables in the model. Obtained regression coefficients are the following:

Table 19: Significant coefficients predicting EV_Revenue with Sell_sidefinadvisor

	Estimate	Std. Error	t value	Pr(> t)	Signif.
(Intercept)	2.404	0.498	4.829	5.00E-06	***
p\$NFD_Revenue	1.012	0.293	3.449	0.001	***
Period controls	Yes	Yes	Yes	Yes	*
p\$Sellside_finadvisor	0.166	0.578	0.287	0.775	
<hr/>					
Residual standard error	2.765 on 99 degrees of freedom				
Multiple R-squared	0.156				
Adjusted R-squared	0.122				
F-statistic	4.568 on 4 and 99 DF				
P-value	0.002				

Source: Own work.

Note: signif. codes: '***' 0.001, '**' 0.01, '*' 0.05

Similar to the previous model, obtained significant coefficients are NFD_Revenue, at 0.1% and Crisis as well as significant at 5%. The results grant the following explanations: if NFD_Revenue increased by 1%, EV_Revenue would increase by 1.0. Additionally, if transaction happened in Crisis or Recovery, EV_Revenue would be lower by 1.6 or 1.4 respectively. In all cases on average across the sample with other variables being constant at the respective significance levels.

Variable Sellside_finadvisor is not significant, however shows positive regression coefficient.

Models testing

The ANOVA test of models' variance shows that Model 6 does not provide statistically significant additional explanatory power over Model 5 ($F_{(100,99)} = 0.082$, $p = 0.775$). Thus, although the inclusion of Sellside_finadvisor improves model's explanatory power its addition is statistically insignificant.

Examined sampling independence of Model 5 with Durbin-Watson test shows positive autocorrelation of 0.082 ($DW_{(t-1)}: 1.438$, $p = 0.014$). This means the residuals from OLS regression follow AR(1) at 5% significance level, however the autocorrelation is very low.

Model 5's multicollinearity test shows very low to low collinearity between independent variables (mean VIF = 1.186), NFD_Revenue (VIF = 1.041, Tolerance = 0.960), Crisis (VIF = 1.256, Tolerance = 0.790), Recovery (VIF = 1.252, Tolerance = 0.798). The inclusion of independent variables is therefore justified.

Model 5 also exhibits homoscedasticity tested with Breusch-Pagan test ($BP_{(3)} = 6.657$, $p = 0.084$), meaning the residuals are equally distributed across the sample.

2.7 Discussion

In my research I explored valuations of Slovenian companies in the context of acquisitions, focusing on the value impact provided by the inclusion of sell-side financial advisor. Previous research has been concentrated on pre-acquisition value drivers or elements during acquisition, largely focused on strategic rationale for sale/acquisition, or negotiation power between various buyers/sellers, however less focusing on the value sell-side financial advisors bring. Also, research was limited on the selected field of geography where usually small operating samples comprising of just a few transactions were analysed. Hence, my research provides real case development of transactions values in a given Central and Eastern European economy across relatively long-time horizon, together with insights of different transaction characteristics.

The research confirms that sell-side financial advisors bring higher valuations in both absolute and relative terms. On the aggregate level, the transactions where they advised granted an absolute EUR 3.2bn higher selling amount, while relative multiple analysis using a sample's average performance indicators show EV/EBITDA premium of 28.3%, EV/EBIT premium of 66.4% and EV/Revenue discount of 9.6%. Their inclusion, however is not significant enough to have the explanatory power on multiple determination determining the price. Nevertheless, it showed interesting insights. Namely, inclusion of sell-side financial advisor has a positive effect on EV/EBITDA, while slightly negative on EV/EBIT and EV/Revenue. Also, the predicting power of the examined transaction characteristics is low, indicating such characteristics cannot be taken as a sole alternative for the commonly known valuation assessments.

2.7.1 Contributions and practical implications

There are several contributions of the study. First, it provides an insight into relationship between acquisition prices (through relative valuation multiples) and inclusion of sell-side financial advisor. Such relationship is indeed positive, meaning that acquirers pay a premium for target companies that engaged sell-side financial advisor, implying the sellers could benefit from engagement of advisors to run the sale process. However, as the relationship was insignificant the outcome could hardly be determined only by using the selected characteristics from the study.

Second, it adds information on relationship between acquisition prices and other transaction related characteristics, such as time period, indebtedness, profitability and target's sector. Showing that targets are acquired at a premium during time of expansion, when they possess higher level of financial leverage and are more profitable. Also, higher valuation levels are observed in compressed sector of consumer goods, retail and tourism over industrial sector and sector of telecommunications, media and technology, while other sectors' results remain less reliable given the small sample sizes considered in my study.

Third, to the best of my knowledge the research was conducted on the most comprehensive data set used in Slovenian economy so far. Taking into account M&A transactions in Slovenian environment for the past twenty years whose data was individually checked and corrected to the best of my ability based on public data from future accounting periods and media reporting (both not yet published at the time of the acquisition), assembling a dataset that could follow reality as close as possible. Therefore, the research contributes to the

understanding of M&A dynamics in a developed country in Central Europe that went through a period of transition from a non-market to market economy, reaching full integration within the European Union as well as European Monetary Union.

Fourth, this research can prove helpful in providing a rule of thumb valuation analysis of a target, cross-checking the obtained valuation through other fundamental analyses with historical valuation multiples actually achieved in transactions in a given economy. Such approach is (as a supplement) commonly used in practise and the results enable the reader to quickly cross-check selected target's characteristics and get a valuation range when connecting each specific element (e.g. obtaining a valuation multiples for a target company active in industrial sector, with low profitability level, high indebtedness level and during time of economic crisis).

Fifth, the regression analysis shows significant results predicting EV/EBITDA with time period of expansion, profitability measure of EBITDA margin and sector of consumer goods, retail and tourism, where all the variables show positive relationship. Moreover, the prediction of EV/EBIT with time period of crisis is significant and negative. The prediction of EV/Revenue is significant with positive relationship for indebtedness measure of NFD/Revenue and significantly negative for time periods of economic crisis and recovery. All obtained statistically significant relationships provide direct applicability, which has however limited in explanatory power.

Last but not least, I hope research shows the need for accurate and adequate reporting of the transactions scope and values by sellers and acquirers. Furthermore, the applicability of obtained data should provide and encouragement for future analysis of this field that could increase M&A market efficiency. Realistic and sizeable samples could benefit both scholars as well as practitioners in M&A market that base part of their valuation on past transactions.

2.7.2 Limits of the research

The obtained results show positive impact by sell-side financial advisors on the acquisition value, however are statistically insignificant on valuation multiple determination. Despite higher value, one could argue that inclusion of sell-side financial advisor does not improve valuation multiples for individual transaction, mainly because of heterogeneous transactions in the sample (e.g. advisors were engaged in various occasions where the company could have been a well performing, in distress, impacted by the adverse timing etc.) with relatively small amount of transactions with sell-side financial advisor (37). On the contrary it is important noting that for financial advisors is not uncommon to be engaged in situations where the sellers could not have acted alone (i.e. special distressed situations, where potential acquirers are harder to find), while they can be omitted in situations where companies are well performing and the owners sell the company via direct negotiations, not necessarily getting the best price for the asset.

An important matter when preparing the sample is the understanding that EBITDA or EBIT, around which company performance was largely based on in my analysis, are in practice commonly used as rough proxies for cash flow. Factually these are not the same and some transactions' prices are determined by applying a multiple on estimated (or normalised average) of free cash flow. Depending on the industry there is a variety of indicators being applied. Moreover, in the analysis I considered reported accounting performance figures for

one year prior the transaction and to a large degree (unless there was special reference for different deal structure) relied on accounting performance indicators (e.g. EBITDA, EBIT, Net income) and did not perform more detailed normalisation analyses which are not uncommon for setting the correct measures. In some instances, relative valuation multiple is applied on past X years (weighted) average performance, in other cases pro-forma performance adjustment is calculated omitting the effect of assets and liabilities that are not part of the transaction. In other occasions, capitalisation of certain current expenses can be applied (e.g. in retail or in R&D heavy industries), which companies might or might not consider prior the sale. There are a lot of details that are deal specific and could hardly be recognised correctly for the outsider looking into non-public arrangements specified in share-purchase agreements. However, it is for the latter that I deem obtained performance measures satisfactory and correct on average, using publicly available data.

Additionally, the transactions used in the sample were generally reported in the media as they are material in size. There are, however, many smaller transactions that are executed under the radar of the public and very likely do not follow the sophistication level of larger ones. These transactions are likely executed without financial advisors, the external parties might be limited to lawyers and accountants, while the preferred form is direct negotiations. The research provides limited insight into such kinds of deals, nonetheless some of the presented M&A process elements could still be applied in their cases. The hypothesis would be that valuations for such smaller transactions grant lower values, as they possess higher risks, uncertainty and harsher competition from more established, larger and more robust competitors.

Lastly, the results and their representations are limited to the scope presented, taking into account specific geography, time frame and industry allocation based on transactions recorded with publicly announced acquisition values that were included in the data base. As previously noted, the obtained valuation multiples are more reliable in segments with larger number of transactions, thus strong reliance might not be applicable for less represented sectors of the research such as financial services and conglomerates (3 cases), energy and infrastructure (7 cases), pharmaceuticals and medical companies (7 cases), as well as for negative profitability (8 cases) and very high profitability class (4 cases).

2.7.3 Future research proposition

In order to build a more explaining regression model, one ought to seek independent variables that offer higher explanatory power on independent's variables' (valuation multiples) variability. Afterwards one should obtain data on expected valuation by the sellers prior and after engagement of financial advisors. Clarity on what was initial price expectation and whether expectation was exceeded or not met when signing-off the transaction might provide a better insight into the field. This would give an idea of the perceived value added to the principals and would eliminate randomness around transaction characteristics on which neither the seller, the target, the acquirer nor the advisor have any power on (e.g. current situation of the target, economy, competitive pressure or lack of it, skills and knowledge of advisor, target's connectedness with acquirer, type of acquirer etc.).

Second, to obtain even clearer picture of the known M&A transactions in a given geography, one could expand the sample by including also the transactions reported on Merger Market

database that do not include deal values and obtain them by further investigation of future financial statements (if disclosed, when available) or by conducting a survey with acquirers, targets or sellers to comment on the valuation levels. Any additions on the sample size, especially in some sectors and profitability measures would improve accuracy of current findings.

Third, the analysis of accounting policies and their development should be performed to determine whether changes in acquisition value resulted due to different accounting treatments of otherwise realistically unchanged performance indicators.

Fourth, although the research has distinguished between acquisition stake considerations, differentiating between full consideration acquisition or lower to minority stakes, it did not apply valuation discounts to minority stakes that did not grant control over the target to the acquirer. In future such discount or premium analysis could be applied to normalise the obtained valuation multiples.

Finally, one should investigate elements of the M&A process in transactions with sell-side financial advisor and determine reasons for lower or higher valuation levels achieved. Ideally the results could be clustered into the aforementioned disadvantages sellers face when selling the company – from financing, knowledge or empathy gap (Seet, Graves, Hadji, Schnackenberg, & Gustafson, 2010), external demeaning way of looking at family companies (Miller, Le Breton-Miller, & Scholnick, 2008; Granata & Chirico, 2010), discounting in cases of close family connectedness with the firm (Ahlers, Hack, & Kellermans, 2014; Ahlers, Hack, Kellermans, & Wright, 2016), past owners' empathy towards the target, lack of rationality (Kammerlander, 2016; Granata & Chirico, 2010) or negotiation elements (Michel, Ahlers, Hack, & Kellermans, 2018). Additional reasons might occur and prove better quality of explanation why to engage sell-side financial advisors and which activities are crucial value drivers.

CONCLUSION

The thesis successfully answered main question whether sell-side financial advisors' engagement grants higher transaction values compared to transactions without their involvement. Initially anticipated adverse position of sellers without financial advisor's support compared to usually well positioned buyers is proven right. Empirical findings suggest an aggregate EUR 3.2bn higher value is achieved by transactions with their involvement. In relative terms, valuation multiples show advisor's inclusion grants a premium of 28.3% for EV/EBITDA, 66.4% for EV/EBIT and discount of 9.6% for EV/Revenue.

Moreover, the paper provides an important insight into actual historical valuation multiples achieved from the prism of various transaction characteristics that could help the reader with a rule of thumb assessment to spot potential outlier valuations he or she obtained using other valuation methods. Analysis shows that targets are acquired at a premium during time of expansion, when they possess higher level of financial leverage and are more profitable. Also, higher valuation levels are observed in sectors of consumer goods, retail and tourism over industrial sector and sector of telecommunications, media and technology.

Subsequent to the main hypothesis, the examined significance of sell-side financial advisor shows that such inclusion is insufficient for establishment of regression predictive model determining relative valuation multiples, neither by their significance or predictive power. The contribution of the examined target company's characteristics such as time period, profitability, indebtedness and sector to the predicting model is partially significant. There were some successful predictors of multiples whose impact can be directly applied. Such predictors for EV/EBITDA multiple are time period (of expansion), profitability and business sector (of consumer goods, retail and tourism), for EV/EBIT multiple time period (of crisis) and for EV/Revenue multiple indebtedness and time period (of crisis and recovery).

While previous research intensified around pre-acquisition strategic rationales or buyer-seller relationship and behaviour impacting acquisition price, it lacked representation of value financial advisors bring. When looking from geographical perspective of Central and Eastern Europe, previously there were limited studies on the longitudinal acquisition value development, let alone were they able to provide comprehensive insights and multiple segmentation through wide array of transaction characteristics. The thesis provides a core for many future research directions, paving the way into more quantitative analysis of acquisition values with potential to further dissect M&A process elements, value drivers and characteristics of target companies.

Hopefully the paper also informs and positively impacts strategic thinking of a reader, a managerial equity stake holder in front of a sale-acquisition process. As illustratively presented by Mr. Warren Buffett:

*“Risk comes
from not knowing
what you are doing.”*

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APPENDICES

Appendix 1: Povzetek (Summary in Slovene language)

V magistrskem delu obravnavam transakcije združitvev in prevzemov, ki so se zgodile v Sloveniji v dvajsetletnem obdobju med leti 2000 in 2019. Poudarek dela je na dodani vrednosti, ki jo lastnikom podjetij pri prodaji lastniškega deleža prinesejo finančni svetovalci prodajne strani. Višja vrednotenja so pričakovana zaradi angažiranja zunanjšega znanja, veščin in izkušenj iz strukturiranja prodajnih procesov, ki so pri majhnih, srednjih in družinskih podjetjih na nezadostni ravni.

Delo uspešno odgovori na ključno vprašanje, ali je angažiranje finančnih svetovalcev na prodajni strani rezultiralo v višjih vrednosti transakcij v primerjavi s transakcijami brez njihove udeležbe. Pričakovani podrejeni položaj prodajalcev brez podpore finančnega svetovalca v primerjavi z običajno dobro pozicioniranimi kupci se je izkazal za resničnega. Empirične ugotovitve kažejo, da transakcije s prisostvovanjem svetovalca na prodajni strani dosegajo skupno 3,2 milijarde EUR višjo vrednost. Z relativnega vidika pa večkratniki vrednotenja kažejo, da svetovalčeva vključenost dosegla premijo v višini 28,3% za EV / EBITDA, 66,4% za EV / EBIT in diskont 9,6% za EV / Prihodek⁵.

Prispevek nam nadalje doprinese s pomembnim vpogledom v dejanske zgodovinsko dosežene večkratnike vrednotenja, iz zornega kota lastnosti transakcij. Te bralcu omogočajo hitre ocene vrednosti preko palca in mu pomagajo najti večja odstopanja od vrednosti, ki jih je sam pridobil na podlagi drugih metod določitve vrednosti. Analize pokažejo, da podjetja prevzeta po višjih večkratnikih v času ekonomske ekspanzije, ko so bolj zadolžena in ko je njihova dobičkonosnost višja. Prav tako so višje stopnje vrednotenja v sektorjih izdelkov široke potrošnje, trgovine na drobno in turizma v primerjavi z industrijskim sektorjem in sektorjem telekomunikacij, medijev in tehnologije.

Delo nadalje preuči pomembnost finančnega svetovalca na prodajni strani pri določitvi napovedovalnega modela večkratnika vrednotenja, ki pa se je izkazal kot nezadosten, tako po omejeni statistični značilnosti in napovedni moči. Velikost doprinosa lastnosti prevzetih podjetij, kot so časovno obdobje, dobičkonosnost, zadolženost in sektor, je pri napovedovalnem modelu delno značilna. Po drugi strani obstajajo uspešni napovedovalci večkratnikov, katerih vpliv je mogoče uporabiti neposredno. Taki napovedovalci za večkratnik EV / EBITDA so časovno obdobje (ekspanzija), dobičkonosnost in poslovni sektor (potrošniške dobrine, trgovina na drobno in turizem), za večkratnik EV / EBIT časovno obdobje (kriza) in za večkratnik EV / Prihodek zadolženost ter časovno obdobje (kriza in okrevanje).

Medtem, ko se pretekle raziskave osredotočajo predvsem na strateške vidike pred prevzemom, na odnos kupca in prodajalca ter na vedenje, ki vpliva na nakupno ceno, je bil opazen vsebinsko manj razdelan vidik vloge in doprinosa finančnih svetovalcev. Na območju Centralne Evrope je na voljo omejeno število študij, ki bi prikazovale razvoj prevzemnih cen podjetij na daljši rok, kaj šele, da bi omogočale celovit vpogled in segmentacijo večkratnikov skozi široko paleto značilnosti prevzetih podjetij. Raziskava tako daje temelj številnim prihodnjim raziskovalnim smerem in utira pot v bolj kvantitativno

⁵ EV – vrednost podjetja (ang. enterprise value); EBITDA – dobiček pred obrestmi, obdavčitvijo in amortizacijo; EBIT – dobiček pred obrestmi in obdavčitvijo

analizo vrednosti prevzemov z možnostjo nadaljnje razčlenitve elementov strukturiranega prodajnega procesa, gonil vrednosti in lastnosti prevzetih podjetij.

Upam, da dokument informira in pozitivno doprinese strateškemu razmišljanju bralca, lastniku upravljaljskega lastniškega deleža, ki je pred kupo-prodajnim postopkom. Kot je ilustrativno izjavil g. Warren Buffett:

*»Tveganje izhaja iz tega,
da ne veš
kaj počneš.«*

Appendix 2: Abstract

The thesis analyses M&A transactions happening in Slovenia in twenty-year period between 2000 and 2019, especially in the context of added value by sell-side financial advisors to owners when selling an equity stake. Higher valuations are expected due to engagement of external know-how, skills and knowledge of sale process structuring, which are to an inadequate level introduced in SME or family-owned companies. Empirical findings, based on the sample of 104 transactions, suggest transactions where financial advisors were engaged grant an aggregate of EUR 3.2bn higher acquisition values than transactions without them. In relative terms, valuation multiples show advisor's inclusion granted a premium of 28.3% for EV/EBITDA, 66.4% for EV/EBIT and discount of 9.6% for EV/Revenue. Nevertheless, higher historical values do not prove sufficient for establishment of regression predictive model determining relative valuation multiples. Additionally, analysis shows targets are acquired at a premium during time of expansion, when they possess higher level of financial leverage and are more profitable. Also, higher valuation levels are observed in sectors of consumer goods, retail and tourism over industrial sector and sector of telecommunications, media and technology.

Keywords:

Mergers and acquisitions, EBITDA multiples, EBIT multiples, revenue multiples, financial advisor, transaction premium, sale of a company, family firm's valuation, SME valuation, M&A in EU

Appendix 3: Supporting tables

Table 20: Operating sample's financial advisor's inclusiveness allocation and multiples

Financial advisor	Frequency	Median EV/ EBITDA	Median EV/ EBIT	Median EV/ Revenue
Without sell-side financial advisor	67	7.1	9.4	1.0
With sell-side financial advisor	37	9.1	15.7	0.9

Source: Own work.

Table 21: Operating sample's profitability class allocation and multiples

Profitability	EBITDA margin	Frequency	Median EV/ EBITDA	Median EV/ EBIT	Median EV/ Revenue
Negative	< 0.0%	8	-15.1	-8.1	2.2
Low	≥ 0.0% < 10.0%	38	7.9	8.8	0.5
Medium	≥ 10.0% < 20.0%	35	7.7	15.5	1.0
High	≥ 20.0% < 40.0 %	19	7.4	12.5	2.3
Very high	≥ 40.0%	4	11.1	21.7	6.8

Source: Own work.

Table 22: Operating sample's time period allocation and multiples

Time period	Period	Frequency	Median EV/EBITDA	Median EV/EBIT	Median EV/Revenue
2000 - 2008	Expansion	37	9.1	13.2	1.5
2009 - 2013	Crisis	20	9.1	12.9	1.0
2014 - 2019	Recovery	47	6.6	11.8	0.8

Source: Own work.

Table 23: Operating sample's indebtedness class allocation and multiples

Indebtedness	NFD / Revenue	Frequency	Median EV/ EBITDA	Median EV/ EBIT	Median EV/ Revenue
Very low	< 5%	25	7.0	8.9	1.3
Low	≥ 5% < 15%	21	6.4	12.3	0.8
Medium	≥ 15% < 35%	24	8.8	10.6	0.8
High	≥ 35% < 100%	22	8.5	16.4	1.3
Very high	≥ 100%	12	9.6	17.9	4.1

Source: Own work.

Table 24: Operating sample's target's sector allocation and multiples

Target's sector	Frequency	Median EV/ EBITDA	Median EV/ EBIT	Median EV/ Revenue
Consumer goods, retail and tourism (CGRT)	39	9.4	12.4	1.0
Energy and infrastructure (EI)	7	6.1	8.9	0.5
Financial and conglomerates (FC)	3	14.2	25.0	4.7
Industrial (I)	32	7.6	13.0	0.8
Pharma and medical (PM)	7	6.2	8.3	0.9
Telecommunications, media, technology (TMT)	16	6.5	15.6	1.9

Source: Own work.

Table 25: Regression coefficients predicting EV_EBITDA without Sellside_finadvisor

	Estimate	Std. Error	t value	Pr(> t)	Signif.
(Intercept)	19.586	5.315	3.685	0.000	***
p\$EBITDA_margin	18.273	12.446	1.468	0.145	
p\$NFD_Revenue	-2.340	2.651	-0.883	0.380	
Period controls	Yes	Yes	Yes	Yes	
Industry controls	Yes	Yes	Yes	Yes	
Residual standard error	23.670 on 94 degrees of freedom				
Multiple R-squared	0.114				
Adjusted R-squared	0.030				
F-statistic	1.349 on 9 and 94 DF				
P-value	0.223				

Source: Own work.

Note: signif. codes: '***' 0.001, '**' 0.01, '*' 0.05

Table 26: Regression coefficients predicting EV_EBITDA with Sellside_finadvisor

	Estimate	Std. Error	t value	Pr(> t)	Signif.
(Intercept)	19.470	5.486	3.549	0.001	***
p\$EBITDA_margin	18.113	12.628	1.434	0.155	
p\$NFD_Revenue	-2.325	2.700	-0.871	0.386	
Period controls	Yes	Yes	Yes	Yes	
Industry controls	Yes	Yes	Yes	Yes	
p\$Sellside_finadvisor	0.481	5.146	0.093	0.926	
Residual standard error	23.790 on 93 degrees of freedom				
Multiple R-squared	0.115				
Adjusted R-squared	0.019				
F-statistic	1.203 on 10 and 93 DF				
P-value	0.300				

Source: Own work.

Note: signif. codes: '***' 0.001, '**' 0.01, '*' 0.05