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School of Business and Management

Strategic Finance and Business Analytics

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**MODELLING THE EFFECTS OF DEAL STRUCTURES IN CORPORATE  
ACQUISITIONS FROM SELLER'S PERSPECTIVE**

Master's Thesis 2020

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## ABSTRACT

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The aim of this master's thesis is to find out, how the different deal structuring options affect the deal value and risk faced by the seller. The study is conducted as a quantitative case study through a case transaction, to which the deal structuring options are demonstrated. Deal structures are evaluated based on the purchase price received by the seller, and the risks recognized in the structure. The risks stem from the findings in the previous literature on the features of the structuring options. The recognized risks are uncertainty of the cash flows, time value of money, valuation risk, management risk, counterparty risk and litigation risk. The previous literature focuses on studying the acquirer's risks, and the seller is commonly thought to be the less risky party in the transaction. This study aims to emphasize and evaluate also the risks faced by the seller.

The results show that the deal structure has a significant role in the cash flow and risk faced by the seller. Four different deal structures were examined more closely in the case transaction situation: 1) asset sale, 2) stock for cash, 3) stock for stock, and 4) earnout payment. The differences in the resulting cash flow are due to the taxation and uncertainty of the cash flow. For the purposes of risk evaluation, a risk matrix is created, and each of the structures is given a total risk value based on the matrix values. Stock sale and an earnout payment prove to be the riskiest structures.

## TIIVISTELMÄ

Tekijä	Ina Laurila
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Tämän Pro Gradu -tutkielman tavoitteena on selvittää, miten erilaiset yrityskaupparakenteet vaikuttavat kaupan lopputuloksena myyjän saamaan arvoon ja riskiin. Tutkimus on toteutettu kvantitatiivisena case-tutkimuksena, jossa rakenteiden vaikutus on mallinnettu todellisessa yrityskauppatilanteessa. Rakenteiden vaikutus on arvioitu niiden myyjälle tuottaman kassavirran ja riskin perusteella. Rakenteisiin liittyvät riskit pohjautuvat aiempaan tutkimukseen eri yrityskaupparakenteiden ominaisuuksista. Tunnistettuja riskejä ovat kassavirran epävarmuus, kassavirran aika-arvo, valuaatioriski, johtajariski, vastapuoliriski sekä oikeudenkäyntiriski. Nykyinen kirjallisuus on pitkälti keskittynyt ostajan riskien tutkimiseen, ja myyjän näkökulmasta aihetta on tutkittu vähemmän, sillä ostajalla on yleisesti katsottu olevan enemmän riskejä.

Tutkimuksen tulokset osoittavat, että yrityskaupan rakenteella on iso merkitys myyjän saamaan kassavirtaan sekä kauppaan liittyviin riskeihin. Empiirisessä case-tutkimuksessa tutkittiin neljää erilaista yrityskaupparakennetta, jotka olivat: 1) liiketoimintakauppa, 2) osakemyynti, 3) osakevaihto, sekä 4) lisäkauppahinta. Eroihin kassavirrassa vaikuttavat erityisesti verotus sekä kassavirran varmuus. Riskiarviointia varten luodaan riskimatriisi, jonka perusteella jokainen rakenne pisteytetään. Osakekauppa ja lisäkauppahinta osoittautuvat riskisimmiksi yrityskauppatilanteiksi myyjän näkökulmasta.

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This moment of returning a complete thesis has been in my mind for a while now. Writing of this thesis has been a long process and I am relieved that the moment of returning is finally here. Working long hours at work and studying at the same time is not something I can recommend for anyone. But it was my own choice as I wanted to have both.

Though, I am delighted with my choice of the subject for my thesis. I learned a lot, and making the research was truly intriguing most of the times. The moments of confusion and disorder were not my favorite, and there were plenty of them also.

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In Helsinki, 7<sup>th</sup> December 2020

Ina Laurila

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## 1. INTRODUCTION

This master's thesis studies the different structuring options of mergers and acquisitions deals through academic literature and quantitative examples. This thesis serves as an introductory to the complicated world of mergers and acquisitions. It hopes to be able to provide the reader, who is not familiar with corporate transactions, a better understanding of the field, but also for the reader with existing knowledge of corporate transactions, a profound review on the deal structure optimization.

This chapter presents the motives and background of the thesis that lead to the research questions. Also, the research methods and theoretical background are presented.

### 1.1. Motives and background

When a small business owner is considering selling her company, the owner has a power to decide to whom to sell, when to sell, and how to arrange the deal. In reality, small business owners usually have only minor understanding of the substance of M&A deals, when they are about to do the once in a lifetime decision of selling their company. This leads to the fact that the owners do not pay much attention to the deal mechanics even though the structure of the deal has an effect to the deal value.

The opposing parties of any trade normally have differing objectives considering the end result of the trade: the seller wants to maximize the profit, and the buyer wants to pay less - corporate transactions are no exception to this. The final structure of the deal is a result of often long negotiations and compromises of both parties because the objectives of the bidder and the seller need to be integrated in order to sign the deal. It is one of the most complicated steps in the transaction process. Often a lot of effort is put to the price determination, and it is one of the most important factors in M&A deal, but there are also multiple other factors to be agreed in the negotiations: Are the stock or assets of the company being sold? How should it be paid? When should it be paid? Do the managers continue to serve in the target company? In addition, regulation, taxation, form of financing and other deal specific matters are things to consider. Deal structure can be thought as a bunch of real options - the managerial flexibility to structure the deal has value. (Lukas, Reuer & Welling 2012) Real options theory has widely been used

in investment decisions but in lesser amount in company mergers and acquisitions. The ideology could be helpful in deal structuring and in modelling the effects of different possibilities.

In corporate transactions, the seller can either sell the common stock, or the assets of the company. In the former case, the seller is the target company's shareholder, and in the latter, the seller is the company itself. An acquisition can be paid with cash, stock or a mixture of the two. The prevalent assumptions are that the bidder wants to buy the assets of the target company with its own stock, whereas the seller wants to sell its stock and receive cash because this way it has no risk. Thus, the difficult part is to negotiate a deal that satisfies both, the seller and the acquirer. Seller's tradeoff between accepting cash and stock is not easily measured. But ultimately, it is the target shareholders' decision if they accept an offer or not (Bernhardt et al. 2018).

There is a lot of fuss around the mergers and acquisitions, but the focus of journalists and corporate board rooms is commonly in the price (Rappaport & Sirower 1999) Also, most of the discourse concerns only the bidder, because it is seen as being the less-informed party and having more risk in the transaction. (Kohers & Ang 2000) Optimizing the acquirer's financing structure is a classical corporate financial problem and is studied a lot, but the seller's perspective is commonly forgotten. The target shareholders are not passive: they also have preferences considering the deal structure (La Bruslerie 2012). The seller's negotiation power is dependent on the state of compulsion it is encountered in the business. The target shareholders are forced to sell only in buyout transactions, where a majority shareholder may force the minority to sell their stocks (La Bruslerie 2013).

Mergers and acquisitions have been in an interest of researchers during centuries but most of the interest has been in the acquirer or the success of the acquisition, and the seller receives lesser attention. Few clear research streams are recognized from the previous literature: 1) the motives behind the transactions and theories for M&A activities of the companies, 2) Financing the acquisition, target screening, and the risks for the acquirer, 3) analyzing abnormal returns and the success and failure of the transactions. The effects of the transaction structure and the payment method to the later success of the combined firm are mostly studied with public

companies because the effects are easily traceable in stock markets. The benefit of the public companies is that the data of market valuation, risk, return and liquidity exist, and are more easily accessible.

This thesis aims to explain the options available for the seller in mergers and acquisitions, and to demonstrate the effects of the seller's choices to the eventual value received and risk faced by the seller itself. It contributes to the lack of studies considering seller's risks faced in the corporate transactions.

## 1.2. Research problem, objectives and methods

The goal of this thesis is to deepen the understanding of deal structure options from the seller's perspective. The seller and the acquirer both have their own preferences for the deal structure that need eventually to encounter before the transaction can be executed. As mentioned, the existing literature does not comprehensively evaluate the options of the seller, even though the value and risks of the different structures are not equal. By better understanding the effects of different deal structures to the seller, it is easier to justify the perspective of the seller in the deal negotiations and price determination.

The existing literature is used to understand what has already been discovered from the effects of deal structures. This thesis then contributes to the limited amount of literature available from the subject by comparing the different structuring options and demonstrating the risks and the cash flows to the seller. Based on the findings from existing literature few deal structures are chosen and scrutinized more closely with a real-world case example.

Main research question:

*How does the deal structure affect the risk and value faced by the seller?*

Sub-questions:

*What kind of factors the seller needs to take into account in the structure of a merger or acquisition deal and how to evaluate the effect of these factors?*

*What has previously been found in academic research considering the impact of the deal structure to the risk and value faced by the seller?*

The empirical research is conducted as a case study using quantitative modelling to deliver financial modelling and valuation of the case transaction. The purpose of the quantitative modelling is to demonstrate the transaction structuring with numerical example. The results are discussed in terms of risk and value for the seller.

### 1.3. Limitations of the research

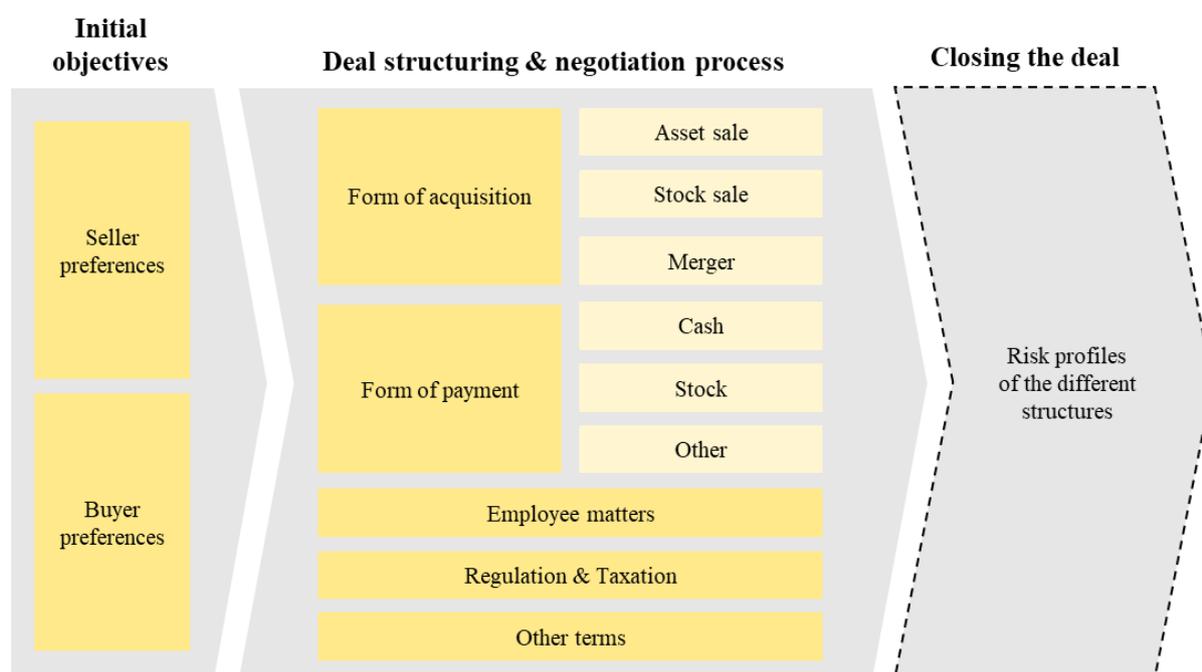
Due to the unique features of transaction parties and the transaction between them, an optimal deal structure is always case sensitive. The interpretation of a transaction fully applies only to this particular transaction. This thesis does not try to form a generalizable interpretation of different structures, but rather provides tools and examples on how to analyze the structures when forming the transaction.

The focus of this study is on Finnish non-listed companies, where the market valuation is not available, and the effects of transaction are not transparent. The seller's preferences are more widespread in public entities because stock exchange allows the number of shareholders to be huge, and thus their preferences cannot be personalized. Phenomenon specific to public companies, such as behavior of abnormal returns or hostile takeovers are not addressed. It is assumed in the research that target has negotiation power and the power to choose what kind of an offer to accept.

It is also worth to mention that this thesis is not about the valuation of a target company, rather valuation of the transaction method. Neither is the financing structure of the deal from the acquirer point of view in the importance of this study. The study is limited to transaction characteristics of the target. Acquirer's characteristics affect the deal structure offered to the seller, but it is the seller's decision if she accepts the payment or not.

#### 1.4. Theoretical framework

Theoretical framework of this thesis consists of concepts affecting the structure of the transactions. First, all the possible structuring options need to be recognized in order to analyze them. The seller and acquirer preferences naturally have an effect on the choices they make on the negotiations considering the structuring. The resulting combinations of different structures each have a unique risk profile. Figure 1 describes the theoretical framework in the process context. The risk profile is scrutinized from the seller's point of view and formed by the certainty of the cash flow received. Structuring mergers and acquisitions is commonly described as a process, where transaction can be thought to consist of pre-transaction phase, negotiation phase and the post-transaction phase. (Kumar & Sharma 2019, p. 61-62).



**Figure 1.** Theoretical framework of the thesis.

The aim of the theoretical part of this thesis is to find the different structuring options and the risks included to these structures.

### 1.5. Structure of the research

This thesis is constructed as follows: the next chapter presents the theoretical background and the basic concepts of corporate acquisitions and deal structuring. The chapter 3 goes through the previous research made from the research question presented in chapter 1.3. The case example demonstrating different structures and their riskiness to the seller is presented in Chapter 4. Lastly, results are deeply analyzed and discussed in Chapter 5.

## 2. DEAL STRUCTURES IN MERGERS AND ACQUISITIONS

This chapter introduces the most common deal structuring options for corporate acquisitions. It aims to provide the basic knowledge of the factors that need to be considered in the transaction process. As the focus of this thesis is on Finnish small and medium-sized companies, also the Finnish legal considerations and taxation are presented.

Deal structure as a term can be understood as the legal structure of the transaction, such as a stock sale or an asset sale. Structuring the deal is, though, much more complicated process, where also purchase price, payment method, and other terms need to be negotiated. Deal structures are affected by numerous factors, such as the management incentives, shareholder preferences and corporate governance (Cai & Vihj (2007), Kobeissi, Sun & Wang (2010)).

Depending on the main structure of the deal, a stock or an asset sale, the seller and the acquirer are determined differently. In a stock sale, the sellers are the target company's shareholders whereas in an asset sale, the seller is the target company itself. An acquirer, or buyer, can also be called a bidder when there are multiple interested buyers that take part to a competitive bidding arranged by the target company.

It is also important to make a difference between the method of payment and the means of financing. The means of financing refers to the acquirer's ways to gather the required funds (debt, equity or internal funds) of the amount of the determined purchase price. Whereas method of payment is the way, how the acquirer pays to the seller (cash, stock or mixed payment). (Kumar & Sharma 2019, p. 65) The case example illustrates the different payment methods that affect the risk and value of the transaction, keeping the initial deal value fixed.

### 2.1. Form of acquisition

First decision to be made by the seller in transaction structuring is to choose whether to sell the common stocks or just an asset or part of the business. Tax consequences vary a lot in different structures and may have an effect on the deal structure choice of the transaction parties. Though, usually the seller has decided beforehand if it would like to give up the entire company or keep the company ongoing. This is often the easiest choice. On an asset sale the seller wants

to retain the company itself whereas in a stock sale, the seller no longer owns the target company. After the decision on the form of acquisition, the form of payment needs to be decided. The basic deal structuring options are presented in Figure 2.

Form of acquisition	Form of payment
Asset acquisition	Cash for assets
	Stock for assets
Stock acquisition	Cash for stock
	Stock for stock
Merger or consolidation	Stock swap
	Cash out
Other	LBO/MBO
	Other special applications

= Covered in this thesis
  = Not covered in this thesis

**Figure 2.** Basic deal structure combinations and scope of this thesis.

The prevalent assumption is that seller wants to sell the company through the common stock, because the taxation of a stock acquisition is usually cheaper for the seller, that is, the target shareholders. The target shareholders face a double taxation in an asset sale. The buyer on the other hand prefers an asset sale because it's less risky.

### 2.1.1. Sale of an asset

An asset sale means a corporate transaction where a company sells all or some of an asset, or all or some of a business and all its assets and related liabilities of this particular entity to another company. The seller company continues existing after the sale and stays under the ownership of the old shareholders. (Pearl and Rosenbaum 2013) The benefit of an asset sale from the seller's perspective is that it can be done without the approval of individual shareholders because it can be approved by the board of directors, as it can be interpreted not to affecting the minor shareholders (Kumar & Sharma 2019, p. 67). Also, if the seller has

confirmed losses to neutralize the capital gain received from an asset sale, the sale might be profitable also for the seller.

Asset sale is detrimental to the seller's shareholders because it causes double taxation – first the company is required to pay corporate taxes from the gain it receives from the sale, and the owners are taxed again when the gain is dealt out from the company to the owners. (Erickson and Wang (2007), Income Tax Act, Business Income Tax Act) Erickson et al. (2007) even state that the acquirer should be willing to offer a higher price in asset sale than in stock sale, all else equal, because of the tax benefits.

An asset sale is less risky for the acquirer, because the acquirer does not take responsibility of all the old liabilities of the seller, only the liabilities related to the acquired assets. The asset sale increases the asset base of the acquirer, which allows the acquirer to make bigger depreciations and amortizations, and thus allows reductions in future tax liabilities and bigger cash flows (Erickson et al. 2007). The buyer is also allowed to depreciate the goodwill transferred with the business in ten years after the acquisition, which reduces the taxable income of the buyer further. (Business Income Tax Act 360/1968, 24 §)

### *2.1.2. Sale of common stock*

In stock sale transaction, the seller disposes all or part of the shares of the target entity it owns, and the owner of the target changes. Compared to an asset sale, where the seller is the target company itself, in a stock sale the seller is the shareholder, an owner, of the target company. This means that the capital gain received from the sale goes directly to the owners who pay the capital gains tax from the gained profit. Selling the common stock base of the company is legally a disposal of shares (Limited Liability Companies Act 624/2006, 6 §).

After the stock sale transaction, where the sellers dispose 100 percent of the common stock of the target company, the sellers do not own the target company anymore. In exchange, the sellers may receive either cash or stocks of the acquiring company. The payment methods are presented more closely in chapter 2.2.

### *2.1.3. Merger*

Mergers are traditional transaction methods when considering a sale or purchase of a business. Though, mergers are also commonly used for reorganizing the business within a corporation. The Finnish Limited Liability Companies Act (624/2006) allows two types of mergers, absorption and combination mergers, but in this thesis absorption merger is more relevant. In an absorption merger one or several companies merge into the acquiring company. Combination merger happens when two or more companies found a new company and merge into it. Subsidiary merger and triangular merger are subtypes of absorption merger. (Limited Liability Companies Act 16:2 §) Subsidiary merger is typical after an acquisition when the acquirer owns 100 percent of the target company and wants to merge the subsidiary to the parent company.

The merger consideration received by the seller in traditional absorption merger can be cash, shares or other assets (Limited Liability Companies Act 624/2006, 16:1 §). Deal characteristics, such as the use of cash versus stock can affect the post-merger risks of the combined entity (Koerniadi, Krishnamurti & Tourani-Rad 2015). An acquisition does not only affect the revenue potential of the firm but also increases the risks to go bankrupt. (Furfine & Rosen 2011) Thus, the seller needs to carefully consider the default risk of the acquirer thoroughly before accepting a stock payment.

### *2.2. Method of payment*

The payment method choice is a decision to be made during an acquisition process and it will eventually be part of the contract. Payment method means the way the acquirer pays the purchase price to the seller. The most traditional ways to make the payment are by cash, stock or mix of the two. Also, other payment forms exist, from which earnout payments and convertible securities are presented later in this chapter. The payment methods vary a lot in terms of risk and value to the transaction parties. (Kumar & Sharma 2019, p. 65)

It can be stated that the payment method is as important as the price itself, because it affects the risk and profit sharing of the acquisition, and thus it needs to be accepted and understood by both parties (La Bruslerie 2013). Payment method affects the actual deal value and the paid premium through market signaling effect, taxation and payment terms. The choice between

cash and share payment has a retroactive influence on the price through future synergy gains meaning that in the case of the cash payment, the acquirer gets all the synergy gains whereas in stock payment the seller has a chance to profit from the synergies as well (Burch et al. 2012, La Bruslerie 2012, Rappaport & Sirower 1999).

Payment method choice has a big impact on the information asymmetry confronted by the transaction parties. Information asymmetry problem in the context of transactions means that the other party of the transaction has such private information considering its own value that is not shared with the other party. Both the bidder and the target face this problem when valuing the other party: the buyer has a risk of overpayment, whereas the target might get too small share of the bidder's stock in share exchange. The buyer tries to decrease this asymmetry by running a due diligence to the target company, and the seller will try to increase the proportion of cash payment when facing a large information asymmetry. Both parties try to negotiate the deal terms according to their hopes and expectations. (Finnerty et al. 2018) The phenomenon is stronger in private companies where exist no public filings of the companies.

### *2.2.1. Cash payment*

Cash payment means that the seller receives the purchase price in cash, straight to the bank account. If the common stock is sold, a fixed amount of cash is received for each share that the seller owns. One-time cash payment is the simplest and fastest way to close a deal. (Burch et al. 2012) Though, cash offer has no tax deferral benefits for the seller, but the benefit of cash payment is the low level of risk from the seller's point of view.

If the deal value is big, the cash payment may, though, be hard to finance from the acquirer's point of view. Acquirer may arrange the cash required to buy the target, for example, by debt, cash reserves or collecting money by issuing new shares. All these financing instruments are included in the cash consideration, because in the point of view of a seller, they only see the cash. Acquiring targets by cash is easier if the target is private and small. A small target has less impact on the subsequent capital structure of the combined firm, which makes the financing easier. But the target's cash reserves may help the bidder, because the acquisition can partly be financed with the target's own cash (La Bruslerie 2013).

### 2.2.2. *Stock payment*

An alternative way for a cash payment is to provide the acquirer's own shares to the target shareholders as a payment. The number of shares offered as payment is determined by a prespecified exchange ratio (Rhodes-Kropf & Viswanathan 2004). The target shareholders who receive the shares of the acquirer as exchange for the target's shares become owners of the acquirer. From the seller's point of view, stock payment can be compared to buying shares of a company from stock markets. (Di Giuli 2013) So, if the seller accepts the stock payment, it shall consider the acquirer company as a good investment and demand a proper rate of return for this investment. Thus, before accepting any stock payment, the seller should make a due diligence for the acquirer like the acquirer does for the target company.

If the whole acquisition is made with stocks it is called a stock for stock acquisition or share exchange, where a fixed number of bidder's shares is paid for each share of the target. Stock payment is possible in two situations: 1) share exchange, or stock swap, and 2) merger. The difference between these transactions is that in share exchange the target becomes a subsidiary of the acquirer but remains as a separate company whereas in a merger transaction the merging company (the target) shall dissolve. (Limited Liability Companies Act 624/2006 16:16 §)

Important question from the seller's point of view is that how many acquirer's shares the seller receives as an exchange of her own shares. The exchange ratio is determined as the ratio of the target's value per share and the acquirer's value per share. For public companies this is often calculated as a proportion of the market prices of the parties. The problem is that this method does not account for the synergy effects of the combined company. The equilibrium exchange ratio should trade off the risk and return between the parties. (Moretto and Rossi 2008) In the case of public companies, the situation is more complicated because the share price fluctuates during the negotiations. (Rhodes-Kropf & Viswanathan 2004)

From target perspective, stock payment has a tax advantage compared to cash because the capital gains recognition is deferred to the moment when the shares are sold in the future. (Burch et al. 2012). Target shareholders also get a part of the future wealth of the acquiring firm and uncertain future profits or losses (La Bruslerie 2012). Another option for target shareholders is to sell the acquirer shares received immediately, if they are strongly averse to owning the acquirer's stock. If target shareholders sell the stocks right away, the capital gains

received make cash and stock payments equivalent for the target shareholder. (Burch et al. 2012) This applies mostly to the public companies' shareholders, because the liquidity of private companies' stocks is not that good and does not allow the immediate sale of the stocks received.

Paying with stocks is efficient also for the acquirer because it doesn't necessarily need to raise more capital for the acquisition. The financing decision between debt and equity is a traditional corporate finance question and includes also a corporate control issue. (La Bruslerie 2013) According to pecking order theory, which states that the companies use internal financing when available, acquirers choose cash or internally generated cash flow as a method of payment before equity. But cash payment needs to be financed - with cash reserves, debt or equity. Given that most bidders don't have massive cash reserves or liquidity in order to finance an acquisition, practically the decision is done between debt and equity financing. (Pearl et al. 2013, 337-339). In practice, the stock payment is done with the company's own shares or by issuing new shares. For the acquiring company the share exchange is juridically considered to be directed share issue against capital contribution (*In Finnish: apportti*). (Accounting Act 1336/1997, 9:12 §)

When target is acquired for stock, target firm's shareholders become voting shareholders in the firm whose stock they receive (Ghosh & Ruland 1998). The consequence of issuing new stock is a dilution of the wealth situation of the old shareholders (La Bruslerie 2013). When the acquirer issues new shares or sells some of its own, the current shareholders' equity dilutes in the acquirer company compared to the standalone basis. If the earnings per share (EPS) of the combined firm is lower after the acquisition, the transaction is said to be dilutive; if it is higher, the transaction is accretive. Acquirers are not keen on pursuing transaction that are dilutive over the projection period because of the destroyed shareholder value. (Rosenbaum & Pearl 2013). But in the long run the received target company should provide additional appreciation also for the old shareholders of the acquirer company.

Regardless the dilution effect, paying by shares is usually a choice of an acquirer because they know the value of their own shares better than the target shareholders, and can manipulate the seller. A share payment gives the acquirer an insurance against risk of misvaluation of the target and future profits. The coverage against risk through share payment is as efficient as other guarantees because the seller divides the risk for the future of the company. (La Bruslerie 2012)

After the acquisition, the acquirer needs to integrate the target to the acquirer and its culture. The success of post-acquisition integration depends on the cooperation of the target, which can be encouraged by paying with shares and taking the seller as an owner to the new combined company. Important in terms of the integration are, for example, target's human capital, maintaining customer relationships and continuing product development. (Lukas et al. 2012)

In the case of public acquirer company there are two ways to construct a stock payment offer, which has a crucial effect on the risk allocation between the seller and the acquirer: The share issue can be made as fixed number of acquirer shares or fixed value of acquirer shares. In fixed shares payment the number of shares remains fixed, but the deal value fluctuates between the announcement day and the actual closing day. (Rappaport & Sirower 1999) Thus, changes in acquirer's price do not affect the proportional ownership of the combined company but the received payment by the target will drop if the bidder's share price drops (Chen & Hilpert 2015). In fixed value structure, the proportional ownership is fluctuating until the closing day and the acquirer bears all the price risk on its shares: if the price falls, it is required to issue more shares in order to pay the sellers the fixed value. But if the share price continues to fall after the closing date, seller's shareholders bear a greater percentage of those losses. (Rappaport & Sirower 1999)

Collar offers, or payments, are complementary stock payment terms that are introduced to cover the risk of price fluctuations of the bidder and target stocks in the stock markets. Collar offers can be divided into two main groups: Fixed Price Collars and Fixed Ratio Collars. A fixed price collar specifies a fixed price range, a Collar width, for the bidder's stock that is paid in the exchange of each of the target's share when the deal closes. If the bidder's stock is outside the range, the payment is adjusted with specified exchange ratio. A fixed ratio collar determines a fixed exchange rate according to which the bidder pays a fixed amount of its own shares of each of the target's shares. If the bidder's stock price is outside of the Collar width, the target receives a predetermined cash amount. (Chen & Hilpert 2015)

### *2.2.3. Financing mix*

A mixed payment is a combination of cash and share payments, where the full cash payment or full share payments are the corner solutions, but the line between the corners can practically

be continuous. An all-cash offer or an all-stock offer do not compensate the information asymmetry of the both parties simultaneously - only from either target's or bidder's perspective. A mixed offer can partially address also the other party's information asymmetry. From target's point of view, the mixed payment is the most effective addressing information asymmetry when the fraction of cash is higher, and the fraction of stock is lower. The risk of underpricing in stock offer is high. (Finnerty et al. 2012) An optimum payment mix is in relation to the risk and returns of the transaction parties. Even though there are some thoughts about the non-linear behavior of the determinants of cash percentage in a mixed payment scheme (La Bruslerie 2013).

#### *2.2.4. Convertible securities*

Finnerty et al. (2012) introduce alternative method for payments in corporate acquisitions - convertible securities. Convertible securities in corporate transaction framework mean paying by a security that includes a debt and equity components. It can be compared to a mixed payment where the proportion of cash and stock are fixed, whereas in convertible offer those proportions are variable. From the seller's point of view, the debt component is similar to a cash payment. The equity component can be converted to equity in the future or remain as straight debt. The issuer (the acquirer) can call the convertible for redemption, and the convertible holder (the seller) will convert the convertible into the underlying common stock, if the firm's share price rises above the call price, or redeem it for cash, if the firm's share price is lower in the future. From the target's point of view, the debt component of the convertible signals a higher-value bidder because the bankruptcy costs could be high for a lower-value bidder.

Compared to a traditional mixed payment of cash and stock, where the proportions of cash and stock are fixed, the convertibles allow variable portions of cash and stock to be used in the payment. For the option holder (the seller), the convertible equity component works like a call option and they can possibly profit from the increased share price of the acquirer. For the acquirer, the convertible security decreases the risk of overpaying from the acquisition. Overall, the convertible securities are in their best use in transactions, if the information asymmetry is large and double-sided. (Finnerty et al. 2012)

### *2.2.5. Contingent payments*

In addition to traditional onetime payment, an acquisition consideration can consist of two components: the upfront fixed payment and the contingent future payment, usually tied to some measure of performance. The latter payment is called an earnout. Earnouts are complex and multidimensional contracts, where the size of the earnout payment, the length of the earnout period, and the type of the performance measure need to be carefully determined. (Cain et al. 2011) Earnouts allow the transaction parties to close the deal despite the possible disagreements on valuations or other terms of the transaction (Kohers & Ang 2000).

A contingent earnout payment is mostly based on the target firm's performance but may also be contingent on the combined firm performance, or even on some exogenous factor, such as oil price. Possible performance measurements are profitability (e.g. cash flow, pre-tax income, gross profit, net income), sales or product development measures. The period is typically one to three years and is subject to the amount of uncertainty. (Cain et al. 2011)

Usually, a remarkable fraction of the total acquisition price is paid upfront, which reflects the agreed portion of the value. Earnouts are used to divide the risk of the transaction between the transaction parties. The buyer can manage the risk of the target's underperformance and the target may cover the risk of undervaluation. The earnout neutralizes the overvaluation risk of the bidder by allowing the bidder to set the earnout limit to a level that it is ready to pay with minimal expectations on the target performance. If the expectations are exceeded and the target performs well, the bidder pays for the better than expected performance. (Kohers & Ang 2000) In order to affect to the earnout performance, target managers must remain within the company after the acquisition. If the target company's managers cooperate, the synergies can increase, and the determined performance target is closer to be achieved. Thus, the earnout structure acts as an incentive for the target to cooperate. (Lukas et al. 2012)

In private targets, managers have greater percentage of ownership, which implies that the managers are more responsive to the earnout incentives (Cain et al. 2011) Especially in the situation where the target manager owns target company stocks and is valuable human capital for the bidder, the manager can be engaged through earnout agreement. (Kohers & Ang 2000) Thus, earnouts can reduce the possible problems with moral hazard in the post-merger integration phase when the managers of the target firm stay to make sure that the performance

targets are met. Though, the effect of using earnout may be exactly opposite because the objective of the target managers is to enhance the short-term performance whereas the buyer managers might try to reduce it. (Lukas et al. 2012)

Earnouts are though, very complex to form and to agree on from both sides of the transaction due to strict terms. The earnout contracts are more common when there are only few shareholders in the company, meaning private companies or parent-owned subsidiaries, because of the differing standpoints of multiple owners. (Kohers & Ang 2000)

### 2.3. Other terms and regulation

Even though the companies' actions are strictly regulated, and the shareholder protection is high in European Union, there exists no special law for mergers and acquisitions. The Finnish applicable laws are the Accounting Act (Act 1336/1997), Business Income Tax Act (Act 360/1968), Income Tax Act (Act 1535/1992), Limited Liability Companies Act (Act 624/2006) and Transfer Tax Act (Act 931/1996).

The baseline for deal contract formation is a freedom of form, which has led to adoption of the legal praxis of the United States in the Finnish deal and contract structuring. Well created contract is long enough to explain what happens if something unexpected occurs, but short enough not trying to be an exclusive list. Standard agreement contract is inefficient for both the seller and the acquirer as it does not protect neither party from the exit of the other. (Grosu 2009) The rights and terms for modifications must be included to the contract. The ideas for useful deal terms can be searched from international legislation, such as European Contract Law (European Union 2002) and UNIDROIT principles (Unidroit 2016).

The seller should make sure that bidders sign a Non-Disclosure Agreement to prevent malpractices considering the seller's financial or other information released in the M&A process if the deal would fall. This protects also the buyer, if the information is released for multiple bidders and competitors of the new owner during the process. The seller needs to decide whether it arranges the deal as a bilateral negotiation or a broader auction process. One term that gives the seller some flexibility to the negotiation process, is a go-shop provision that enables the seller to negotiate with other potential acquirers even after signing the initial agreement. If the seller receives a better bid during the go-shop period, it can terminate the

agreement with a termination fee. The go-shops are mainly used by risk aversion sellers but, using them might result in lower acquisition price. (Antoniades, Calomiris & Hitscherich 2016)

Material Adverse Change (MAC) clause allocates the risk between signing and closing of the deal equally between the transaction parties. If something unwanted, such as unfavorable economic development or adverse business, happens before the deal completion, a MAC clause gives the bidder a right to renegotiate or terminate the deal even though the deal is signed. MAC clause benefits also the seller by increasing the likelihood of receiving bids by offsetting the seller's possibility to exit the deal before completion. (Grosu 2009) In Finnish legal praxis exist clauses for circumstance changes (*In Finnish: Olosuhdemuutos*), that justifies for renegotiations of the contract content and terms.

#### 2.4. Employment matters

A stock sale does not affect the employment contracts, and mainly neither does the asset sale. In the latter case, the buyer takes responsibility of the transferring employer liabilities and the employees transfer as old employees within the other assets. A transaction is not an excuse to terminate the contract, but it also does not offer a protection against dismissals. (Employment Contracts Act 55/2001) The risk for employees who transfer with the transferring business, is that the buyer starts to reorganize the operation when also the financial or operational reason for termination might arise.

Human capital may be a valuable component in the target's value and thus be counted in the purchase price. Target's managers with specialized knowledge and contacts may provide expertise that are not easily duplicated. Thus, the bidder might set conditions of retainment of the target's managers affecting the deal value or completion. Also, noncompete contracts and earnout structures are used to tying the target managers to the target company. (Kohers & Ang 2000)

#### 2.5. Taxation of corporate transaction in Finland

Taxation of transactions in Finland is based on the Council Directive 2009/133/EC of the European Union, which aims at removing tax barriers from transactions in the European Economic Area (Council Directive 2009/133/EC; Tax Administration 2017). Taxation is

highly dependent on the legal form of the seller, form of an acquisition and the form of payment. De facto, taxes are to be paid when capital gain is realized meaning that the target shareholder can postpone the tax payment by accepting a stock payment. In cash payment, taxes are to be paid immediately. (Bugeja & da Silva Rosa 2010) Table 1 aims to provide a comprehensive understanding on the different combinations of taxation of corporate transactions in Finland.

**Table 1.** Taxation of different corporate transactions in Finland.

Tax type ( <i>Taxpayer</i> )	Asset for cash	Stock for cash	Stock for stock
<b>Company taxes</b> <i>Target company</i>	20%	-	<b>Delayed taxes</b>
<b>Capital gains taxes</b> <i>Target's individual shareholder</i>	30% (< €30t) 34% (>€30t)	30% (< €30t) 34% (>€30t)	
<b>Capital gains taxes</b> <i>Target's company shareholder</i>	20%	20% <i>(Tax-free if stocks belong to fixed assets)</i>	
<b>Transfer taxes</b> <i>Acquirer</i>	Depends on asset <i>(real estate 4%, shares 1.6%)</i>	1.6%	

The legal form of the seller affects the taxation of the sale: in a stock sale it matters if the seller is an individual shareholder or a company shareholder. Individuals pay capital gain tax of 34% from the received gain (30% from the gain below €30t). (Income Tax Act 1535/1992, 124 §) In the case of a limited company (*In Finnish: osakeyhtiö*), the tax treatment depends on the source of income: the corporate tax rate is always 20% but some profits can be counted as non-taxable. Companies are subject to business income taxation and the capital gain is calculated by subtracting the acquisition cost of the assets on sale from the price received. An exception to this is a share exchange which does not cause capital gain taxation. (Income Tax Act 1535/1992, 2:45-46 §)

Capital gains of the target's individual shareholders are calculated with either the real acquisition cost or the deemed acquisition cost (*In Finnish: hankintameno-olettama*). The

deemed acquisition cost is subtracted from the purchase price received on the basis of the period of possession. If the shares have been owned more than 10 years 40% of the purchase price can be subtracted from the gain received. If the shares are owned less than 10 years, the received gain is subtracted by 20%. (Income Tax Act 1535/1992, 46 §) The capital gain for the target's company shareholder is formed by subtracting the undepreciated acquisition cost from the received purchase price (Income Tax Act 1535/1992, 45-46 §).

The asset class sold affects the tax consequences of the sale. Subsidiary and associated company shares can be activated to balance sheet either to fixed assets, current assets or financial assets. The Finnish Business Income Tax Act (360/1968, 1:6 §) recognizes a tax-free sale of such shares that belong to fixed assets of the seller company (*In Finnish: käyttöomaisuusosakkeet*). Such shares can be, for example, shares of subsidiaries, associated companies or other companies that the seller has more than 10 percentage of ownership. Another criterion is that the shares which are presented in fixed assets in balance sheet have a proper business impact to the seller meaning that the company being sold must have had a real contribution to the seller company's business. (Tax Administration 2020b)

In the case of a capital loss it can be deducted from the capital gain during the year of loss and the next five years (Income Tax Act 1535/1992, 2:50 §). But there is an exception: if the sold assets are shares that belong to the fixed assets, the gained loss is not deductible in taxation (Business Income Act 360/1968, 1:6 §). The capital gain or loss from fixed assets is presented in the profit and loss statement of the seller company. The existing confirmed losses of the target company can be utilized in an asset sale transaction by subtracting them from the capital gain received from the sale of the target's assets. The Finnish Income Tax Act regulates the transmission of the confirmed losses in the event that the ownership of the shares has changed after the year of loss. The base rule is that when over half of the company's shares change ownership, the losses are not deductible anymore. (Income Tax Act 1535/1992, 122:1 §) Though, a common practice is that companies apply a permit of exception from Tax Administration of Finland in order to utilize the losses if the target company continues operating as part of the acquirer company or group. (Tax Administration 2017)

According to the Finnish Business Income Tax Act (360/1968) share exchange and merger are per se non-taxable transactions for the target company shareholders who dispose the shares. Though, share exchange may also include a cash consideration no more than ten percent of the

nominal value of the exchangeable shares if the seller wishes to maintain the tax benefit. If the cash consideration exceeds the allowed amount, the capital gain achieved from the cash payment is considered as taxable. Taxes are to be carried when the shares received are sold in the future and the capital gain is realized. Though, the target shareholders are also required to pay the transfer taxes if the consideration is paid with shares that the acquirer already owns. To avoid the transfer taxes, the sellers should get new shares through issuance of shares as consideration. The acquiring company needs to pay the transfer tax from the shares received in transaction, because those are not newly issued. (Business Income Tax Act 360/1968, 52 §, Transfer Tax Act 931/1996)

In share exchange both the seller and the acquirer may lose their rights to subtract their losses from taxable gain. The confirmed losses of the target company transfer to the acquiring company according to the continuity principle, but if the ownership of the target company changes at the same time, the permit of exception is required (Income Tax Act 1535/1992, 123 §). In addition to Income Tax Act (1535/1992) regulation, the regulation of Business Income Tax Act (360/1968) needs to be filled in order to retain the confirmed losses of the merging company. If the Business Income Tax Act regulations are not met, the permit of exception cannot be accepted (Tax Administration 2016b).

According to the Transfer Tax Act (931/1996) the seller must pay transfer taxes from the acquisition of the common stock. The acquired shares can be valued in their current value (*In Finnish: käypä arvo*) in the balance sheet. (Tax Administration 2017) In merger and demerger transactions the seller is released from paying transfer taxes if the merger consideration is paid by shares. The acquiring company pays transfer taxes in merger if the merger consideration is something else than shares. (Business Income Tax Act 360/1968, 52 §; Income Tax Act 1535/1992, 45 §; Transfer Tax Act 931/1996, 3:15 §)

### 3. LITERATURE REVIEW

The state-of-the-art literature review aims to answer to more specific questions that cannot solely be explained by common knowledge or taxation features explained in chapter 2. The purpose of this state-of-the-art literature review is to understand how the different deal structures affect the value and risk to the target shareholders, and how these effects should be taken into account when making decisions considering the deal structure. It covers the topic by examining, what has been found out of the phenomenon in existing research.

The research base of this thesis consists of research streams and articles that study either the seller's preferences towards transaction structuring or compare the transaction structures in terms of created risk or value for the seller. Target shareholder preferences have not been in an interest of the academic research. Instead, a lot of studies exist from acquirer's preferences, returns, risks and financing of the deals. Burch, Nanda and Silveri (2012) noted the same fact and initiated a research of seller's behavior in transactions.

This chapter is structured as follows: First, the research process and the choice of the articles is presented. Next, the main ideas of each of the chosen article is summarized. Lastly, a short summary of the articles is formed and the insight from the literature is used to answer the research question of what has been found out on previous literature about the different deal structures in terms of risks and value for the seller.

#### 3.1. Literature review process

Mergers and acquisitions have been in an interest of academic research through the history and continues to maintain the interest. The amount of research made from mergers and acquisitions is enormous, and finding the relevant articles was challenging. The most difficulties lie in finding the right search terms not to narrow down the results too much and not to exclude important articles from the results but to be able to find all the relevant ones. In this chapter the research process is explained in detail in order to allow the reader to replicate and verify the search.

First, the databases to be used were narrowed down to three: EBSCO – Business Source complete, ProQuest Central: Business/Economics, and Elsevier – ScienceDirect. Similar

searching techniques and terms were used in each database. Though, the user interface and the available search fields of each database varies. The used search settings of each database are presented in Table 2.

**Table 2.** Search area settings and restrictions for each chosen database.

Database	Search area	Limiters
EBSCO – Business Source complete	AB Abstract or Author-Supplied Abstract	Limit to: Scholarly (Peer Reviewed) Journals Document type: Article Language: English
ProQuest Central: Business/Economics	Anywhere except full text – NOFT	Limit to: Peer reviewed Source type: Scholarly Journals Document type: Article Language: English
Elsevier – ScienceDirect	Title, abstract or author-specified keywords	Article type: Review articles, Research articles

The search area in each database is limited to areas other than the full text, such as abstract or keywords, in order to find the most relevant articles. The idea here is that if the article is relevant, the important terms are used, for example, in the title or abstract. At the start, the search terms were not known or recognized completely. Initial knowledge from the subject existed but the challenge was in choosing the most useful search terms. Solely using terms considering mergers and acquisitions result in tens of thousands hit results so they need to be more specified. From the point of view of this thesis, the seller and target views are relevant, so these terms are required. Specifying the search further was more difficult, and a lot of variations were gone through and after multiple iterations, eventually, three different search lines were formed. The specific search terms and the hit results in each database are presented in Figure 3.



**Figure 3.** Search terms and hit results for each chosen database.

All the terms include a Boolean operator “OR” aiming to not to exclude relevant articles with synonym term used. The used words were formed by creating synonym words and iterating the search results. The first search line “deal structure OR transaction structure” was used to search for articles with a big picture of the matters that affect the deal structuring from seller’s point of view. Payment method seemed to be a big part of the transaction structuring and needed to be studied more carefully. The second line “payment AND (method OR medium OR type)” aims to find articles that have studied the effects of payment method from the seller point of view. Lastly, the risks of the seller are in an interest of this study, so the third line “risk OR uncertainty” covers the topic by not limiting the results to any specific risk. The most relevant articles in this search line concern the risks faced by the seller in different transaction structures.

The results in each search line were first scanned by heading and then abstract whenever necessary. The most interesting and relevant articles were scrutinized more closely. Articles that studied the topic solely from buyer's perspective, or only covered stock price movements or abnormal returns of the seller or acquirer, or purely studied factors that affect the deal structuring from buyer's perspective, were not chosen for the literature review. After forming a frame for the respective phenomena, the chosen relevant articles were divided into three streams that are presented next in detail.

### 3.2. Previous research

The topic of this thesis can be approached from multiple directions: How does the different transaction structures affect the risk and value faced by the seller? What kind of risks there exists in the transaction process in the first place? How should these risks be considered and valued from the seller's point of view? Do the risks affect the price received? The chosen articles were divided into three categories, or literature streams, based on the underlying idea in the article: 1) The first stream considers the matter that seller does not always act rationally or that the process is not always so straightforward as explained in Chapter 2; 2) The second stream compares different payment methods in terms of risk and value generated for the seller; And 3) the third stream goes more deeply into the world of stock exchange and merger where the seller's risks are the biggest. Each stream has an own subchapter.

#### *3.2.1. Research stream 1 – Target shareholders' preferences on transaction structure*

The transaction structure is formed as a result of long and often stressful negotiations between the target and the acquirer. In the beginning of the negotiations, the objectives and the optimal structure of both the bidder and the target might differ a lot, which makes it difficult to optimize the negotiation result for both of the parties. In addition, the seller and the acquirer might not act completely rationally. This chapter presents some of the studied reasons for irrational actions of target management, and acquirer's attempts for manipulation during negotiations and transaction structuring. The articles presented in the chapter are listed in Table 3.

**Table 3.** The articles considering the seller's preferences.

Author(s)	Year	Article
Bernhardt, D., Liu, T. & Marquez, R.	2018	Targeting Target Shareholders
Cai, J. & Vijn, A. M.	2007	Incentive effects of stock and option holdings of target and acquirer CEOs
Di Giuli, A.	2013	The effect of stock misvaluation and investment opportunities on the method of payment in mergers
Ghosh, A. & Ruland, W.	1998	Managerial Ownership, the Method of Payment for Acquisitions, and Executive Job Retention.
Grosu, F.	2009	Mergers & Acquisitions – a Simulation Model Used in the Negotiation Process
Kobeissi, N., Sun, C. & Wang, H.	2010	Managerial labor-market discipline and the characteristics of merger and acquisition transactions
Schleifer, A. & Vishny R.W.	2003	Stock market driven acquisitions
Vermaelen, T. & Xu, M.	2014	Acquisition finance and market timing

Cai and Vijn (2007) study the effects of personal interests of target's management in relation to the transaction structures. Ghosh and Ruland (1998) consider the same matter but contrary to Cai and Vijn they study the matter from the point of view of an owner manager. Kobeissi, Sun and Wang (2010) study specifically the management incentives. Vermaelen and Xu (2014) study the effects of overvaluation of the acquirer stock and the acceptance of the stock payment by the target. Schleifer and Vishny (2003) and Di Giuli (2013) have a slightly different point of view on the target shareholder preferences on the transaction structuring and acquirer's valuation. Bernhardt, Liu and Marquez (2018) consider the fact that the seller may consist of multiple shareholders that do not necessarily have a unified objective.

Concluding what Cai and Vijn (2007) say, management incentives might have an effect on the transaction structure and the value received by the target shareholders because target managers' personal interests go beyond the firm's interests. Ghosh & Ruland (1998) continue to study the effects of managerial ownership to the results of the target company's shareholders. Vermaelen and Xu (2014) explain that an agent problem may apply in corporate transactions when the target management and shareholders have differing objectives. The governance structure of the target may affect its management's attitude towards the negotiations and the negotiation result. The wanted result on behalf of the owners could be secured by incentives related to equity compensation or bonuses. Kobeissi et al. (2010) noticed that also noncompetition agreements and the labor market have an effect to the payment method preferences of the target: the

likelihood of using stock decreases the stricter the noncompetition agreements used for the management. This is due that acquirer managers take more responsibility of their investment decisions, because the agreements reduce the managerial flexibility.

Ghosh & Ruland (1998) state that owner managers of the target company value influencing potential also in the combined firm, and thus they will prefer stock over cash payment. On the other hand, managers who don't have significant ownership on the target firm don't have an incentive to negotiate for stock payment, because their share of the received stocks would be minimal. The influencing potential in combined firm is, though, dependent on the relative sizes of the target and the acquirer firms. One incentive for the target manager is to retain a job in the new firm. Though, Cai and Vijn (2007) state that vast majority of the target firm CEOs gets a lower position in the combined firm.

Cai and Vijn (2007) studied how the personal interests of target and acquirer CEOs affect the acquisitions and the method of payment in 250 completed acquisitions during 1993 to 2001. The authors noticed that the target CEOs accept smaller premiums and are less resistant for the acquirer's demands in the negotiations if the illiquidity discount of their holdings is high, meaning that if the managers are under tight trading restrictions and have a lot of holdings under these restrictions. The illiquidity may be due to a vesting period in stock options or restricted stock, and prohibitions on hedging their stocks, which lowers the value of their holdings compared to the fair value in the markets. Vermaelen and Xu (2014) present a notice that in the case of a private bidder the illiquidity of the acquirer's shares may cause the target shareholders in general to be reluctant to accept the acquirer's stock as a payment due to that it is difficult to sell them in the future. Cai and Vijn (2007) compared the value of the CEOs' holdings in two cases: when the CEO left because of an acquisition and when she stayed. The value of the CEO's holdings was \$158 000 in the latter case, and \$5,97 million in the former indicating that the acquisition allows the CEO to sell their stocks, or to hold, exercise or hedge their options. According to the data, most companies have ownership requirements for the executives, and on average the executives have stocks or stock options 4.4 times their annual salary.

Schleifer and Vishny (2003) work on the assumption that the target shareholders have a short-term horizon in their operation of maximizing the target's value, and that the target managers wish to cash out quickly after the merger, both resulting to be indifferent to the method of

payment. Target managers may accept overvalued stock of the acquirer as the payment if they are promised a position in the new entity. The authors agree to Cai and Vihj (2007) that the target managers can use the acquisition as a way to exercise their options and sell their stocks in the target company without signaling anything to the market. Di Giuli (2013) disagrees with Schleifer and Vishny (2003) about the short-term horizon of the target shareholders and argue that the target managers care about the quality of the merger, and thus the method of payment affects the price paid by increasing the price if paid by stock. He measures the volume of information asymmetry through standard deviation and errors in analysts' forecasts in the 1187 public companies' deals over the period 1990 to 2005. Di Giuli (2013) uses a standard deviation of the acquirer's returns as a proxy for the uncertainty in the acquirer's value in the regression, resulting in that the standard deviation of the acquirer's return is positively related to the use of stock.

Target shareholder base affects the shareholders' preferences and investment style that have a major effect on the negotiation result. The preferences of the target shareholders' can be divided into growth stocks and value stocks. Stock payments are predominantly made by growth firms, and the target shareholders accepting stock payments can be thought to be growth-oriented owners. Retaining acquirer shares can be thought to be equivalent to investing in the best alternative investment available to the target shareholders. Managers and institutional shareholders of the target may want to retain control over the resulting firm and therefore prefer stock payment. (Vermaelen & Xu 2014)

Vermaelen and Xu (2014) develop a model that predicts the payment method of an acquisition based on the leverage ratios of the acquirer and target. The model succeeds to explain 89% of the 2 978 acquisitions of US public companies between 1980-2005 that belong to the data. The authors found out that target shareholders accept stock payment more easily when the financing decision is justified by optimal capital structure. This kind of case would be when the acquirer is overleveraged and cannot afford to pay with cash. The authors argue that otherwise the target management concludes that the bidder's stock is overvalued, because it desires to pay with stock. And thus, the target will demand more shares, which means that the bidder is required to pay higher premium to eliminate the financing strategy based on manipulation.

An acquirer has an incentive to pay with stocks when its shares are overvalued because it allows the acquirer to give less shares to the target shareholders. The possible overvaluation of the

acquirer's assets is due to an information asymmetry between the parties. Though, in acquisition transactions the acquirer must negotiate with target management and financial advisors, which makes it more difficult to manipulate the share value. (Vermaelen & Xu. 2014)

According to Grosu (2009) the seller has motives to make investments on pre-closing period when the contract includes a MAC clause or similar. The seller aims to affect the deal value of the combined company by making the deal more profitable for the acquirer and preventing the acquirer from using the exit right provided by MAC. For example, the target may begin the integration process by canceling the research and development activities of its own products and shifting them to the anticipated post-closing strategy. Target may also invest to retain its employees, customers and suppliers: employees may suspect layoffs, and start to focus more on securing their own future than that of the target; customers and suppliers may reconsider their post-closing relations. On the other hand, MAC also encourages the buyer for actions that protect the new company and can be said that MAC term allocates the transaction risk to the party that can most efficiently bear them.

Bernhardt, Liu and Marquez (2018) present an optional theory for explaining the returns of public takeovers, and asymmetric information and moral hazard. An additional thing to consider is the investor heterogeneity – the diverse opinions of the target shareholders. Each shareholder has their own perspective on the value of the target, and thus the acceptance of the bid may vary among the shareholders. This leads to the bidder to increase the premium price paid in order to assure the median shareholder of the target to accept the deal. The authors conclude that the difference in the target shareholders' share of the combined company's returns between cash and equity transactions is dependent on the size difference of the acquirer and the target. The authors state that cash is optimal, when acquirer's manager has relatively high valuation of the target, while equity is optimal when median target shareholder has higher valuation of itself. The authors say that the return on the combined company is a poor proxy for target shareholders' welfare because of the dilution losses of the shareholders' that had a higher initial valuation of the target. According to this, the investors hold firms they value the most, but in a merger, the shareholders must hold both firms, and this dilutes their ownership in the firm they prefer more. For private company sellers and acquirers, the integration is slightly easier because they don't need to pay that much attention to the opinions of the diverse shareholders, when their ownership is usually at the hands of the few. The irrational

shareholders in the exchange market might make the integration more difficult for the management.

### 3.2.2. Research stream 2 – Comparing payment methods in terms of value and risk

As any securities value depends on the profitability of the underlying asset, the value received by target shareholders in the sale of the target company is contingent on the future cash flows it receives. Target shareholders trade off the future cash flows of the target company to the payment made by the acquirer. In the world of perfect capital markets, no transactions costs and no taxes the method of payment is a matter of indifference to transaction parties. Taxes and the information asymmetry make the payment method choice relevant in practice. (Finnerty et al. 2012, Burch et al. 2012) The articles considering the payment method matters are presented in table 4.

**Table 4.** The articles considering payment methods.

Author(s)	Year	Article
Bugeja, M. & da Silva Rosa, R.	2010	Capital gains taxation and shareholder wealth in takeovers
Burch, T. R., Nanda, V. & Silveri, S.	2012	Taking stock or cashing in? Shareholder style preferences, premiums and the method of payment
Cain, M., Denis, D. J. & Denis, D. K.	2011	Earnouts: A study of financial contracting in acquisition agreements.
Chen, A. & Hilpert, C.	2015	Mergers and acquisitions: Collar contracts
Erickson, M. & Wang, S.	2007	Tax Benefits as a Source of Merger Premiums in Acquisitions of Private Corporations
Finnerty, J., Jiao, J. & Yan, A.	2012	Convertible securities in merger transactions
Kohers, N. & Ang, J.	2000	Earnouts in Mergers: Agreeing to Disagree and Agreeing to Stay
La Bruslerie, H.	2012	Corporate acquisition process: Is there an optimal cash-equity payment mix?
Lukas, E., Reuer, J. J. & Welling, A.	2012	Earnouts in mergers and acquisitions: A game-theoretic option pricing approach.
Viarengo, L., Gatti, S. & Prencipe, A.	2018	Enforcement quality and the use of earnouts in M&A transactions: International evidence.

La Bruslerie (2012) analyses the optimal combination of cash and stock payments for both the target and the acquirer and concludes that the cash payment includes a bigger premium paid to the target shareholders. Burch, Nanda and Silveri (2012) study the relation of payment method

and taxation to the gains of the sellers. Bugeja and da Silva Rosa (2010) agree that the cash payment leads to higher prices but say it does not derive from taxation. Erickson and Wang (2007) concentrate solely on the tax effects of different payment methods.

Lukas, Reuer and Welling (2012), Ang and Kohers (2000), and Viagreno, Gatti and Prencipe (2018) all study the formation and benefits of earnout agreements, and the results are parallel: earnouts are mainly used for diminishing risks for the acquirer but may provide a wealth creation opportunity also for the seller. Finnerty, Jiao and Yan (2012) find that the value received with convertible securities is smaller than with pure cash or stock payment. Chen and Hilpert (2015) present collar contracts as an additional way to push the seller's expected utility up.

La Bruslerie (2012) studies the payment method mixes and the role of information asymmetry between the target and the acquirer and concludes that the final price should be sensitive to the design of the payment scheme. He states that negotiations are about decreasing or increasing the information biases in order to move towards the optimal payment mix of the negotiator. He uses a one-period model and defines the information asymmetry as an endogenous variable. The seller experiences the information asymmetry when valuing the synergy gains for the acquirer. The acquirer may cover himself towards the risk and information bias on target valuation by offering bigger share of stock payment of the acquisition price. The seller estimates bigger profit from share payment in terms of future gains and will accept lower transaction price than made by pure cash. The sharing of synergy gains and the final setting of an acquisition price should be determined jointly. Even in takeovers the price will be affected retroactively by the payment mix because it affects the share of the synergy gains.

The negotiations about transaction structure between the target and the acquirer include information asymmetry that can even lead to a manipulation. The seller knows better the value of its own assets but may exaggerate in order to increase the price. The buyer has better understanding about the synergy gains of the combined firm. But the buyer who is protective towards the communication of the target, wants to pay less in cash. The communication and information policy have a crucial effect to the result of negotiations. The seller's incentives to increase the transaction price may incidentally lead to increasing the share of the stock payment. (La Bruslerie 2012)

Burch, Nanda and Silveri (2012) state that, in practice, the most significant matter affecting the cash-stock choice, is the capital gains taxes. If there were no taxes, the shareholders could themselves exchange one payment to another at a little cost: if the seller received stocks, she could cash out and sell them right away; and if she received cash, she could reinvest the same amount to stock markets. Bugeja and da Silva Rosa (2010) say that because the cash payment triggers capital gain taxes, target shareholders should require bigger purchase price. But they also conclude that this phenomenon is not triggered by taxation: the cash payment was associated to bigger capital gains even though there were no difference in taxation between the payment types. This was studied with an Australian data because before 1999 the target shareholders in Australia have been liable for capital gains tax irrespective from the type of the payment received. The disposal of target's own shares was a triggering event for capital gains taxes despite that the shareholders were given acquirer shares in exchange. Also, the higher the realizable capital gains, the bigger disincentive the disposal of the shares is and the bigger payment the target shareholders will require to compensate them for realizing the shares. La Bruslerie (2012) states that the minimum value the target shareholders should accept must be bigger than the stand-alone value of the company before the transaction.

Burch, Nanda and Silveri (2012) study the payment methods from target shareholder's perspective. In their empirical analysis the authors examine the effects of the target shareholders' investment preferences and capital gains taxes to the method of payment and bid premiums by running regression models. Their data consists of 1881 US deals of public companies between 1981-2006. The authors found out that the larger the target's capital gains tax liabilities the more likely the stock payment is accepted by the target shareholders. They argue that target shareholders' preferences have a big role in accepting offers: if the target shareholders find the acquirer's stock unacceptable from investment perspective, tax benefits don't do any difference between cash and stock as the method of payment; but if the acquirer's stock is the most acceptable investment, tax benefits tend to decrease the paid premium. The bid premium was 20\$ in the first case and only 3,20\$ in the latter (when stock price was 100\$ at the market). The larger the tax rates and the capital gains, the more attractive the stock offer is for the target shareholders.

Erickson and Wang (2007) focus on acquisition structures and the effect of taxation to the purchase price. They find out that different tax structures have an effect to the purchase price and value received by the target shareholders. The research is based on the sample of 77 acquisitions of US privately held firms between 1994-2000. Tax benefits are studied between regular corporations and flow-through entities (FTE). FTEs are not taxed as corporations, but the income flows directly to the owners, which makes the owners subject to only one level of income tax. Corporations are subject to double taxation, and in addition, the actual tax cost of an asset sale is bigger for corporations, resulting also smaller tax benefits for the acquirer. The value is found out to be 11.6 percent bigger in acquisitions of FTEs than in corporations measured by price to revenue multiple. Price to EBITDA multiple suggest that the premium should be even 45 percent bigger in FTEs. One statement is also that for a one dollar increase in the tax benefit, the premium increases by 0.36 to 0.46 dollars in all transaction structures.

According to La Bruslerie (2012) an all-cash offer can be interpreted as a signal about the target firm's good quality due to the fact that the acquirer doesn't need to share the risk with the target causing a positive reaction to the target and bidder shareholders' wealth in stock markets. Cash payment may also indicate that the bidder's stock is undervalued, but in the case of a cash payment, the bidder's market valuation is irrelevant to the target shareholders. An all-cash offer is independent of the value of the acquirer firm, which means that the target is not exposed to information asymmetry considering the bidder's value and the gained synergies (Finnerty et al. 2012). In cash transactions, acquirer takes the whole risk by itself: the risk is that the expected synergies will not realize. The only risk for the seller is that it could get a higher price from other bidder or that the current management would create higher value for the shareholders, but these are hard to value. In addition, cash offers are commonly assumed to contain bigger premium than stock offers (Burch et al. 2012). Though, cash payment means that the target shareholders should find another investment that provides bigger returns than owning the shares of the target (Vermaelen & Xu 2014).

The bargaining power of the acquirer affects the premium paid to the target shareholders. Normally, the bargaining power of the acquiring company rules over (Burch et al. 2012). Lukas et al. (2012) explain that the payment method mix is partly determined in terms of information asymmetry, meaning that the party who is more informed of the situation, has a better position in the negotiations. La Bruslerie (2012) states that negotiations of the deal structure may happen under two different circumstances: with a fixed price or pure bargaining. If the transaction price

is agreed before the payment mix, the price is thought to be exogenous variable. In this situation the seller should try to adjust the bidder's preferences and to reduce the information bias by delivering more private information in order to decrease the uncertainty of the acquirer, and to gain the preferred cash share of the payment. The seller's preferences are more difficult to adjust to the fixed transaction price, because it would require increasing the information bias by exaggerating the target's value. In the context of bargaining, the transaction price is thought to be endogenous variable that is determined together with the payment mix.

Viagreno, Gatti and Prencipe (2018) declare the earnout contracts as a panacea for adverse selection problems and valuation risks. Still, earnouts are not very popular due to their complexity and difficult negotiations. Earnouts tend to end up to disagreement and litigations at the time of the payment due to differing views and verification of the outcome. Earnout structures are most used when the uncertainty of the target's value or future prospects are high, such as when the target is a private company or if it operates in a service, high-tech or some other high uncertainty industry. Only 8,9% of the 37 228 international deals between years 2000 – 2015 of the data set included an earnout clause. The percentage of earnout deals was 10.43 for 230 Finnish deals varying from 6.86% of domestic deals to 13.28% of cross-border deals. Sellers usually lose control of the company before the earnout payment realizes, because the buyer often changes the CEO and the composition of the board of directors when the deal has been signed. A realization of the risks of an earnout payment are high for the seller because the buyer has an incentive to sabotage the performance measures of the target in order to not to allow the target to receive the earnout payment. Thus, the risk for litigation is significant in earnout structures: if the conditions are not met and the seller is not happy with the reported outcome by the bidder, the seller might take the case to court to file the claims. Earnout is even said to convert disagreement over price today into litigation over outcome tomorrow.

Lukas, Reuer and Welling (2012) examine earnout structures and present a real option valuation model for the flexibility causes of the earnouts. They model the earnout structure as a two-part payment and try to find an optimal solution for the size of the initial upfront payment and the earnout payment. The earnout payment is contingent to the cash flow development of the target, and the earnout option is initially set to be out-of-the-money, so the cash flows should increase during the earnout period to meet the performance target. The model considers the timing of the acquisition (though it is possible to exercise the option at any time), cooperation level of the target and cooperation costs of the target. The results show that the

more uncertain the performance of the target is, the stronger is the tendency to postpone the end of the earnout period, and the bigger the earnout payment can be.

Also, Ang and Kohers (2000) study if earnout contracts create value to the target shareholders. They conclude that total premiums paid are, on average, significantly larger in deals involving earnout structures than in pure cash or stock deals. They analyzed 938 earnout offers and the premiums paid for targets. The authors find a high correlation between the actual earnout payment and the target manager retention. The authors state that the most often the earnout contracts are made in acquisitions of privately held targets or divested subsidiaries, or when bidder and target are from different industries. They also note that it is common that targets are left as separate entities in order to track the performance of the target. According to their study, in 46% of the cases, the targets earn the entire contingent payment, but on average the level of earnout is 62% of the total contingent payment, and no payment at all happens in 9% of the cases. Their findings suggest that earnouts provide an opportunity for extra wealth creation for target shareholders. Cain et al. (2011) find that earnouts are quite large, 33% of the total transaction value on average, and that targets are almost exclusively private firms indicating the high risk associated to private company transactions.

Viagreno et al. (2018) test a hypothesis that the juridical system of a country affects the willingness of the seller to accept an earnout clause, and the magnitude of an earnout share of the payment. Effective legal protection of the earnout holder may emphasize the seller to accept it as part of the purchase price. The authors suggest that the value of an earnout decreases from the seller's point of view when the country's juridical system is poor or inefficient and such risk factors should be considered in the valuation model. The authors show that earnouts are more frequently used in countries with higher quality juridical system, and that the share of the earnout of the payment is bigger in those countries.

Chen and Hilpert (2015) present an additional way to increase the expected utility of the deal for the seller. Walking-away rights and collar offers can substantially increase the value of the deal and decrease the risks compared to all-cash and stock-for-stock payments. The objective is to limit the uncertainty to acceptable range. Termination of the deal before the closing date is shown to increase the expected utility of the target shareholders. The authors develop a model to value collar offers and walk-away rights for target shareholders in public companies' mergers and acquisitions. The authors compare the results to both all-cash and pure stock-for-

stock transactions. The option to terminate the deal, to “walk-away”, is priced with traditional Black-Scholes-Merton formula. The stock price volatility affects the financial value of the walk-away option: high target volatility increases the price of fixed price collar and reduces the value of the fixed ratio collar. Meaning that if the bidder volatility is moderate and the target volatility is high, the target shareholder shall use the walk-away option to secure high return on its own shares. The authors find out that the collar offers can add utility for the target shareholders in some circumstances. They also state that except for a highly risk aversion targets, the target prefers collar offers instead of pure cash payment because of the possibility of high utility gains. The value generated by collar contract is priced as double-barrier option, but the monetary value cannot be clearly stated. It depends on the financial market parameters. The payment method is thought to be exogenous in the model.

Finnerty, Jiao and Yan (2012) argue that convertible securities can resolve the information asymmetry from both sides: it mitigates the asymmetry between the bidder and the target about their values. Though, the authors also notice that target returns in convertible securities deal are smaller than in all-cash or all-stock deals, whereas bidder faces larger returns.

With a merger simulation model, Grosu (2009) transforms a failure of a real-life acquisition into a success by renegotiating the contract using MAC and information disclosure clauses, and by estimating the future post-acquisition profits. The author suggests using Nash-Bertrand-Stackelberg model when estimating future profits following the acquisition if other party has a leader position in the cooperative game. Merger simulations are done by using Nash-Bertrand model, where prices are chosen non-cooperatively, but it is not applicable for acquisitions because acquisition is a cooperative game. They incorporated an additional statement to MAC and forced the target to make synergy investments prior closing the acquisition. The author concludes that by using similar tools, a contract that would guarantee a successful closing of the deal could be drafted.

### *3.2.3. Research stream 3 – Specific risks in stock-for-stock payment*

In stock-for-stock, or share exchange, it is far less clear, who is the seller and who is the buyer. The target’s board is required to value the acquirer’s shares that are offered to its shareholders because share exchange can also be seen as an investment made by the selling company’s shareholders. Thus, the board should act as a seller and a buyer at the same time. The main

questions for the seller before accepting a stock offer are: How much is the acquirer worth? How likely are the expected synergies to be realized? (Rappaport & Sirower 1999) The articles in table 5 aim to answer to these questions.

**Table 5.** The articles considering stock-for-stock payment.

Author(s)	Year	Article
Adra, S. & Menassa, E.	2019	Paradigm Conflict and the Wealth Effects of Blockholder Formation in Private Target Acquisitions
Furfine, C. & Rosen, R.	2011	Mergers increase default risk
Hao, G. & Howe, J.	2011	Does merger structure matter?
Koerniadi, H., Krishnamurti, C. & Tourani-Rad, A.	2015	Cross-border mergers and acquisitions and default risk
Moretto, R. & Rossi, S.	2008	Exchange ratio determination in a market equilibrium
Rappaport, A. & Sirower, M. L.	1999	Stock or cash? The trade-offs for buyers and sellers in mergers and acquisitions
Rhodes-Kropf, M. & Viswanathan, S.	2004	Market Valuation and Merger Waves

Rappaport and Sirower (1999) go through the risks of stock payment for the seller and develop tools to measure the risk. Rhodes-Kropf and Viswanathan (2004) concentrate on stock mergers of public companies but make interesting observations on bid value. Moretto and Rossi (2008) try to determine an optimal exchange ratio. Koerniadi, Krishnamurti and Tourani-Rad (2015) talk about the post-acquisition period of specifically cross-border mergers whereas Furfine and Rosen (2011) study the domestic mergers and find out the factors that increase the post-merger default risk. Adra and Menassa (2019) deal with the target shareholders' position in the combined firm. Hao and Howe (2011) study different merger structures.

Stock-for-stock acquisitions often lead to changes in the riskiness of the firm due to the financing activities of the acquisition. In cash financed deals, the leverage is typically higher than in stock financed deals. This is not to be worried by the seller in 100% cash deals but in the case of a mixed payment it should be taken into account because leverage increases the default risk of the acquirer and the combined entity. (Koerniani et. al 2015) Firms typically increase leverage following mergers in order to afford to pay for the target (Furfine & Rosen 2011). Also, Adra and Menassa (2019) found out that the relative size of the target increases

the portion of stock financing whereas the higher profitability of the target reduces the portion of stock payment.

Rappaport and Sirower (1999) provide a framework for both the acquiring and selling companies to quantify risks involved in stock payment. Understanding the sharing of the synergies is crucial in determining the exchange ratio of the stock payment: if the seller company is valued similarly to the cash payment, the acquirer shareholders lose the same proportion of the synergies that is given to the seller's shareholders. The only way the acquirer shareholders could obtain the same added value from the stock-for-stock deal as 100% cash payment is to offer fewer new shares to the seller. To the seller shareholders this means that instead of getting shares of the acquirer valued as a stand-alone unit, they would get shares based on the acquirer's valuation of combined company including synergies. This means smaller ownership for the seller in the combined company. In practice, sellers are unlikely to accept fewer shares unless their own expectations from the valuation of the combined company is even greater.

Rappaport and Sirower (1999) also develop tools for the seller and the acquirer for measuring the synergy risk. The authors calculate a shareholder value at risk (SVAR) for a cash payment as a premium paid divided by the market value of the acquiring company. Another way to calculate the index is to multiply the premium percentage by the market value of the seller relative to the market value of the buyer. For a stock payment the SVAR is calculated as multiplying the SVAR of a cash payment by the relative ownership of the combined company. The number indicates how much of the company's value is at risk if no synergies occur. This measure, though, assumes that the stand-alone values are not under risk, rather only risky element is the premium paid. In reality, an unsuccessful deal may cost both parties more than just the premium.

One important feature of the stock payment is that both the value and the risks are shared with the acquirer and the target. Transaction parties expect that the value of the resulting company is larger than the arithmetic sum of the standalone companies. From the seller's point of view, the valuation of the companies is an important factor whether to accept the offer or not because it determines the ownership proportion the shareholders receive in the combined entity. Also, the distribution of synergies and risks is determined through the exchange ratio. (Moretto & Rossi 2008) Stock payments offer the seller's shareholders a chance to profit from the potential

synergies but also the synergy risk is shared in the same proportion that is the percentage of ownership of the parties. This risk means that if the expected synergy gains do not realize, the overpayment by the acquirer is considered as loss. And if something unpleasant happens after closing, the seller's shareholders bear the losses with the acquirer's shareholders. (Rappaport & Sirower 1999) Moretto and Rossi (2008) try to determine the exchange ratio in a stock-for-stock merger in a way that it properly handles the risk and returns of the two merging companies. They exploit CAPM and use the weighted average of the betas of the two companies in determining the exchange ratio that takes synergies and risk into account. The equilibrium exchange ratio must correctly trade off the risk and return between the parties.

Rhodes-Kropf and Viswanathan (2004) form a model for public targets to value the received stock merger bids with only limited information. The model demonstrates how the target chooses the winning bid by using the bidder's private and market value, synergies and general misvaluation components based on the Bayesian rationality. Target accepts the bid with highest expected value. The theory and results show that market misvaluations influence the acceptance of the bids and the payment methods. In equilibrium, the stock payment reflects the level of synergies between the firms, but in reality, the synergies are hard to assess. Rational target manager knows the value of its own firm and is required by fiduciary responsibilities to accept the offered stock bid if it yields more than the stand-alone value of the target itself given the management's information and assessment of synergies. This is due to the macroeconomic nature of the information that is held by individual participants of the economy, and thus the target does not know which part of its valuation is due to the market effect and which a firm-specific effect. The authors argue that if target managers are rational and receive a stock bid from a bidder who has access to cash indicating strong enough balance sheet, they will ask it to request the same amount in cash to get rid of the lemons (overvalued stock). Bidder will accept this if the true value of their offer is less than the perceived equity value. This leads to the fact that, in equilibrium, targets will only accept cash from firms that have costless access to cash.

Hao and Howe (2011) examine the effects of merger structures to target shareholders. They compare the detrimental effects of two-step mergers compared to one-step mergers for target shareholders. No detrimental effect is found for the lack of competing bids in two-step mergers. Controversially, two-step merger has higher deal completion speed and higher completion rates, suggesting less risk for the target shareholders. Two-step mergers can be thought as

tender offers, and the quicker completion speed of these mergers is due to the shorter review time of SEC regulators, whereas the higher completion rate is due to less opportunities for target shareholders to change their minds, because the withdrawal is not allowed in extended offer period. Quicker completion benefits the shareholders by smaller indirect costs and reduced time of management attention distraction from the business operations. The authors also find that two-step mergers are more likely used when the payment is made with cash.

An important risk to consider when considering accepting a stock payment is a post-acquisition default risk. Koerniadi, Krishnamurti and Tourani-Rad (2015) studied the impact of cross-border mergers on acquirers' post-merger default risk. With a sample consisting of US firms acquiring foreign targets in the period of 1997 to 2012 the authors find that cross-border mergers reduce the overall default risk of the acquiring firm. They study three possibly affecting factors: deal characteristics, managerial incentives and cross-border sources of risk. They also conclude that information asymmetry of managers increases the default risk. Furfine and Rosen (2011) find opposite results with domestic mergers where the default risk increases alongside the conducted mergers. Authors say that the phenomena cannot solely be explained by the acquisition of riskier targets or increased leverage. Rather, they find evidence for managerial actions that increase the post-merger default risk. They find out that the overall risk after typical merger is above the pro forma combination of the acquirer and the target. But asset diversification happening in mergers and acquisitions by two imperfectly correlated firms should lead to reduction in default risk for the combined entity. Also, asymmetric information increases the risk for mergers if the managers hide the potentially value-decreasing activities from outside shareholders. Furfine and Rosen use idiosyncratic stock volatility as a measure of information asymmetry. Idiosyncratic volatility, or asymmetric information, and option-based managerial compensation are said to best explain the increasing default risk. According to the authors, the acquirer can diminish the risks by offering the seller its own stocks as an exchange of the target's shares.

Adra and Menassa (2019) state that even though the target shareholders would get relatively small portion of the acquirer's shares, the voiced opinion of the target shareholders about their own company and the integration can influence the acquirer shareholders. Though, private target shareholders rely mostly on heuristics and overestimate their probabilities of success. This can also lead to difficulties or even in failure of an acquisition, if the culture of the (public)

acquirer is not as entrepreneurial. This would erode the potential wealth to the target shareholders.

### 3.3. Discussion of previous literature

All three research streams provide reasonable and useful results for the purposes of this thesis that are summarized in this chapter. Based on the findings in the previous literature, hypotheses are made for the structure analysis of the case transaction. The hypotheses are then tested in chapter 5. As a reminder, the literature review is supposed to answer to this sub question:

*What has previously been found in academic research considering the impact of the deal structure to the risk and value faced by the seller?*

The first research stream covered the topic of target shareholder's preferences and decision-making considering different deal structures. Especially target manager's intentions were highlighted in multiple researches (Cai & Vijn 2007; Ghosh & Ruland 1998; Kobeissi et al. 2010; Vermaelen & Xu 2014). The risk is that the manager acts based on his own interests, and not the shareholders. It is difficult to evaluate these intentions, because they are purely personal and may vary towards any structure. Some ideas, though, exist, about that when the risk is emphasized towards a particular transaction type: if the manager has a big portion of illiquid stock and option holdings, he might want to liquidate those through cash payment; or if the manager is promised a position in the acquiring company, he might be biased towards a stock acquisition. Another interesting argument is that the target shareholders should accept stock as a payment only if it is obvious that the acquirer cannot afford to buy the target by cash – otherwise the acquirer's stock can be argued to be overvalued.

Second stream included articles about the effects of different payment methods and their features. The consensus is that the purchase price should be affected by the payment method (Kohers & Ang 2000; Bugeja & da Silva Rosa 2010; Burch et al. 2012; Chen & Hilpert 2015; Erickson & Wang 2007; Finnerty et al. 2012; La Bruslerie 2012; Vermaelen & Xu 2014; Viagreno et al. 2018): cash payment is said to lead to bigger purchase price due to the immediate tax consequences, and the fact that the target shareholders accept lower price with stock payment because it allows them to benefit from the future gains of the acquirer. Initially, payment method negotiations are largely due to the information asymmetry and the risks faced

by the transaction parties – the risks can be decreased by optimizing the deal structure. The main idea is that the stock payment divides the risk from the acquirer to the seller; and that the seller wishes to have bigger share of cash as payment if she thinks that the acquirer's stock is overvalued. The earnouts are an alternative way to divide the risk to the seller, but from the seller's perspective she is exposed to bigger risks than profits.

Stream three was dedicated to the stock-for-stock and merger transactions, where the amount of risks to consider for the seller can be said to be the biggest. This is, because by accepting a stock payment offer, the seller makes an investment on the acquirer, and thus it requires a specific due diligence process. Separating these transactions from the abovementioned, the seller needs to consider the acquirer's operations and financial state before accepting an offer. The initial valuations of the companies determine the exchange ratio according to which the ownerships in the combined company are assigned, which makes the valuation risk a crucial part of transaction. Another to consider is the default risk of the acquirer, and as in any investment conducted, for example in stock markets, the seller must be ready to lose all the invested amount.

Based on these results, the earnout and share exchange transactions are thought to be the riskiest in terms of the expected value received by the seller and the amount and size of the risks faced. Management risk is high in the cash payment because of the liquidation intentions. Stock is accepted as a payment method if the managers are interested in job positions in the acquiring company, or if the shareholders and the board of directors hold the acquirer's shares as a good investment opportunity.

#### 4. DATA AND METHODOLOGY

This chapter serves as a preparatory for the analysis section in chapter 5. The empirical research is conducted as a single-case study utilizing quantitative research methods. The case transaction and the related data is introduced in this chapter. Also, the methodology for quantitative modelling and calculations is presented. Case study was chosen as research type because it allows a thorough understanding and analysis of the phenomenon and its unique features by limiting the amount of research units. It aims to provide a detailed description of the phenomenon but does not necessarily produce new generalizable knowledge. Statistical methods are not applicable when in search of profound understanding of the phenomenon because they search rather for common characteristics and patterns than the specific features. The use of case studies may also derive from the impossibility to study the issue with quantitative research methods. A challenge for this kind of research is the relation of theoretical concepts to the results of empirical investigations (Mills, Durepos & Wiebe 2010, p. 61, 93-94)

The case study includes a thorough analysis of one case transaction, a stock sale of a Finnish utilities' retailer, Karhu Voima Oy. (Karhu Voima 2020) The case transaction was chosen as it thought to be a representative of a traditional corporate acquisition situation and thus giving useful information for the research objective (Mills et al. 2010, 61) Quantitative modelling of the company financial data is needed in order to understand the value creation and risk of different deal structures.

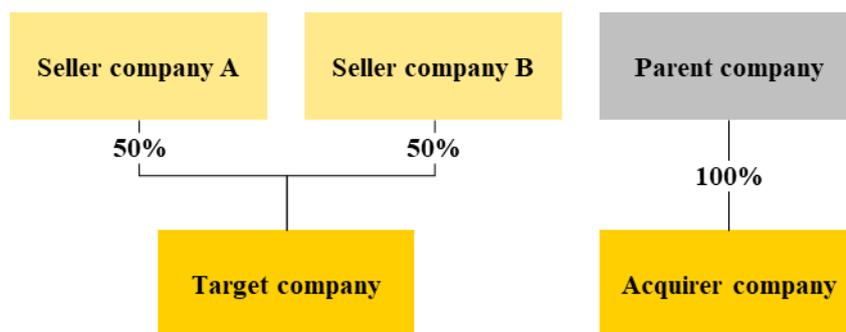
The purpose of the case study is to understand what kind of options the seller would have had and how she could have evaluated them. The analysis covers a comparison of four common deal structure scenarios from the seller's point of view that are chosen based on the theoretical background provided in chapter 2 and 3. The scenarios were chosen as to represent a wide range of different and interesting deal structures. These structures include: 1) an asset sale transaction, 2) a stock sale transaction with 100% cash payment, 3) a share exchange, and 4) an earnout payment. Regulation, tax implications and the risk profile vary in each scenario, and the resulting present value of the cash flows to the seller are explained in detail.

#### 4.1. Data

The data used consists of the company information, financial statements and other public company materials. The acquirer's financial information was received from the company websites and the target's financial statements were acquired through Amadeus database. (KSS Energia 2019) A description of the case companies and the transaction is presented in the next sub-chapter.

##### 4.1.1. Introduction to the case transaction

The case transaction is a seller-initiated stock sale of an electricity retailer company, Karhu Voima Oy (later "the target"). The seller, in actual, consists of two companies, Haminan Energia Oy and Kotkan Energia Oy that had an equal ownership in the target company. The transaction rationale is straightforward: the owners wanted to give up their ownership on Karhu Voima for strategic reasons. The deal was arranged as a stock sale in spring 2020 (Karhu Voima 2020) but the purchase price has not been released. The transaction situation before the sale is illustrated in Figure 4.



**Figure 4.** Case situation before the transaction.

The parent company of the acquirer is a big Finnish utilities company, KSS Energia Oy, that has multiple subsidiaries. The other subsidiaries are excluded from the examination because they are not relevant in terms of this case study. The parent company takes care of the administration and selling activities. To simplify the scenarios, the parent is reorganized such that the retail business of the parent is separated with transfer of assets into a newly founded subsidiary, the acquirer company. This subsidiary is then treated as the acquirer. Transfer of

assets is a legal reorganization type, where the new subsidiary (the recipient company) gives its shares to the parent company in exchange of the transferred business (Business Income Tax Act 360/1968, 52d §). Transfer of assets has no tax consequences (Tax Administration 2016a).

## 4.2. Methodology

The empirical case study is conducted as a quantitative comparison of the deal structures, and analysis of the risks through a created tool. The deal structures are constructed based on the financial data gathered on the case companies. After the structures are formed, the resulting effects for the seller are analyzed through cash flow and risk profile of the structure.

Planning and creating the deal structures requires a lot of financial analysis about the case companies. The quantitative analysis can be divided into preparative actions and the actual deal structure analysis. Preparations for the deal structure formation include target and acquirer company valuations, and the formulation of pro forma financial statement. In order to find out the purchase price, the target needs to be valued since the price is not released. Also, the acquirer needs to be valued to be able to determine the exchange ratio in a share exchange transaction. Pro forma financial statement is required in analyzing the synergies, and risks for the seller in the case of a share exchange. Deal structure analysis consists of modelling the cash flow from the sale to the seller, and analyzing the risks related to the structure.

### *4.2.1. Preparative financial analysis - Company valuations and price determination*

Even though valuations are not in the center of this thesis, they are an integral part of transactions. Target and acquirer companies are valued using discounted cash flow (DCF) model. DCF analysis is a broadly used fundamental valuation methodology and represents the present value of the estimated free cash flows (FCF). Other traditional valuation methods include transaction multiples and comparable companies of which the implied EV/Sales and EV/EBIT multiples are also calculated. As a result of DCF model the enterprise value of the company is received. Enterprise value is widely used in corporate valuations because it is independent from the capital structure, and thus it can be seen to reflect the total transaction value representing the interests of both the debt and equity holders of the company. (Rosenbaum & Pearl 2013, 102, 125). For this reason, an excel model is built to fully

demonstrate the financial statement effects of the different deal structures. All the relevant valuation parameters and the resulting present value of the cash flows are shown in Table 6.

**Table 6.** Financial summary of the target.

Target company financial summary, €t	2020E	2021E	2022E	2023E	2024E	2025E	Terminal
<b>Revenue</b>	<b>7 691</b>	<b>8 871</b>	<b>10 636</b>	<b>10 959</b>	<b>11 318</b>	<b>11 696</b>	<b>11 871</b>
<i>Growth (%)</i>	17.1%	15.3%	19.9%	3.0%	3.3%	3.3%	1.5%
<b>EBIT</b>	<b>141</b>	<b>300</b>	<b>351</b>	<b>406</b>	<b>467</b>	<b>1 016</b>	<b>712</b>
<i>% of sales</i>	1.8%	3.4%	3.3%	3.7%	4.1%	8.7%	6.0%
<b>Taxes</b>	<b>(28)</b>	<b>(60)</b>	<b>(70)</b>	<b>(81)</b>	<b>(93)</b>	<b>(203)</b>	<b>(142)</b>
<i>% of sales</i>	20%	20%	20%	20%	20%	20%	20%
+ D&A	96	96	63	60	58	58	58
- Investments	-	-	-	-	-	-	(58)
-/+ Change in NWC	6	(14)	9	(7)	(8)	(71)	(9)
<b>Free cash flow</b>	<b>215</b>	<b>322</b>	<b>352</b>	<b>377</b>	<b>424</b>	<b>800</b>	<b>561</b>
<b>Terminal value</b>	-	-	-	-	-	-	<b>5 344</b>
Partial period adjustment	1.00	1.00	1.00	1.00	1.00	1.00	-
Discounting period	0.50	1.50	2.50	3.50	4.50	5.50	6.00
Discounting factor	0.94	0.84	0.75	0.67	0.60	0.54	0.51
Terminal period discounting factor	-	-	-	-	-	-	0.54
Present value of free cash flow	203	272	266	254	254	429	2 865
<b>WACC</b>	<b>12.0%</b>						
<b>Enterprise value</b>	<b>4 543</b>						

Implied multiples	2020E	2021E	2022E	2023E	2024E	2025E	Terminal
EV / Sales	0.6x	0.5x	0.4x	0.4x	0.4x	0.4x	0.4x
EV / EBIT	32.1x	15.1x	12.9x	11.2x	9.7x	4.5x	6.4x

With 12 percent weighted average cost of capital (WACC) the enterprise value of the target is 4.5 million euros. WACC acts as the discount rate that reflects the risk of the future cash flows of the company and is determined based on the risk level of the target company. For a public company, WACC can be calculated with capital asset pricing model (CAPM) where the betas are utilized. (Pearl & Rosenbaum 2013, p. 148) For a private company, the beta can be calculated from the comparable public companies' betas but the target company in this study is much smaller than the closest public comparable companies and thus using their WACC as a guideline is not better than choosing the rate more or less arbitrarily based on risk level and the desired rate of return for the investment.

The purchase price of the target is simply set to be its enterprise value adjusted with net debt. It does not reflect the real purchase price of the deal since it is not released. The purchase price is thought to be an exogenous factor in the deal structure analysis, staying fixed in all the

scenarios. Normally, the actual cash flow received by the target shareholders is the purchase price added by net debt. The calculation of the cash flow received is illustrated in Table 7.

**Table 7.** Formation of the purchase price.

Enterprise value	4 543
Long-term debt	- 235
Cash and cash equivalents	14
<b>Purchase price</b>	<b>4 322</b>

The acquirer was valued using 10 percent WACC as the company is multiple times bigger than the target company and thus can be thought to be less risky than the target. The results of the acquirer DCF model are shown in Table 8.

**Table 8.** Financial summary of the acquirer.

Buyer company financial summary, €t	2020E	2021E	2022E	2023E	2024E	2025E	Terminal
<b>Revenue</b>	<b>56 465</b>	<b>57 264</b>	<b>58 608</b>	<b>60 440</b>	<b>62 271</b>	<b>62 832</b>	<b>63 774</b>
<i>Growth (%)</i>	-7.9%	1.4%	2.3%	3.1%	3.0%	0.9%	1.5%
<b>EBIT</b>	<b>3 554</b>	<b>3 510</b>	<b>1 997</b>	<b>2 179</b>	<b>2 360</b>	<b>2 921</b>	<b>3 189</b>
<i>% of sales</i>	6.3%	6.1%	3.4%	3.6%	3.8%	4.6%	5.0%
<b>Taxes</b>	<b>(711)</b>	<b>(702)</b>	<b>(399)</b>	<b>(436)</b>	<b>(472)</b>	<b>(584)</b>	<b>(638)</b>
<i>% of sales</i>	20%	20%	20%	20%	20%	20%	20%
+ D&A	411	411	411	411	411	411	411
- Investments	-	-	-	-	-	-	-
+ / - Change in NWC	38	40	67	92	92	28	125
<b>Free cash flow</b>	<b>3 999</b>	<b>3 259</b>	<b>2 076</b>	<b>2 245</b>	<b>2 391</b>	<b>2 776</b>	<b>3 087</b>
<b>Terminal value</b>	-	-	-	-	-	-	<b>36 321</b>
Partial period adjustment	1.00	1.00	1.00	1.00	1.00	1.00	-
Discounting period	0.50	1.50	2.50	3.50	4.50	5.50	6.00
Discounting factor	0.95	0.87	0.79	0.72	0.65	0.59	0.56
Terminal period discounting factor	-	-	-	-	-	-	0.59
Present value of free cash flow	3 813	2 824	1 636	1 608	1 557	1 643	21 503
<b>WACC</b>	<b>10.00%</b>						
<b>Enterprise value</b>	<b>34 585</b>						

Implied multiples	2020E	2021E	2022E	2023E	2024E	2025E	Terminal
EV / Sales	0.6x	0.6x	0.6x	0.6x	0.6x	0.6x	0.5x
EV / EBIT	9.7x	9.9x	17.3x	15.9x	14.7x	11.8x	10.8x

The behavior of the share exchange structure differs from the other three structures in a way that the price is paid by acquirer's shares through a specified exchange ratio. The exchange ratio is often calculated based on the market value of the target and acquirer shares with the following formula (1):

$$\text{Exchange ratio} = \frac{\text{Target's market value per share}}{\text{Acquirer's market value per share}} \quad (1)$$

But as we lack the market valuations, the enterprise values calculated in Tables 6 and 8 serve the duty. And putting the formula (1) another way around, the formula simply results the ratio of the target's value and the combined value of the both companies. The mathematical proof of the formation of exchange ratio is presented in the Appendix 1. The share of ownership of received by the target is thus calculated according to the formula (2):

$$\text{Ownership received} = \frac{\text{Target's market value}}{\text{Acquirer's market value} + \text{Target's market value}}, \quad (2)$$

where the target's market value is the enterprise value shown in Table 6, and the acquirer's market value in Table 8. Resulting received ownership by the sellers is 11.6 percent on the combined entity. Though, when determining the exchange ratio in share exchange transaction, it is important to take the synergies into account. This way the exchange ratio determines how the synergy is distributed between the parties. Often, the exchange ratio is calculated based on the market value of the shares, but this neglects the risk and return profile of the resulting company. Thus, it is important to understand how the profile changes once the companies are combined. (Moretto & Rossi 2008) If the present value of synergies, €4 284t, is taken into account by subtracting it from the combined value, the ownership percentage received by the seller increases to 13.0%.

#### 4.2.2. Taxation of the sellers

Normally, taxable capital gain to the seller company is formed as the received purchase price subtracted by the undepreciated acquisition cost. In the case transaction, it is possible that the tax authority would accept the treatment of the gain received as a sale of the shares in the fixed assets (*In Finnish: käyttöomaisuusosakkeet*), which would mean tax-free sale of these shares.

All the prerequisites of the Business Income Tax Act (360/1968) are fulfilled but as this kind of situation is an exception to the base rule, it is justifiable to present the normal situation where the sellers are taxed normally with the 20% corporate tax rate.

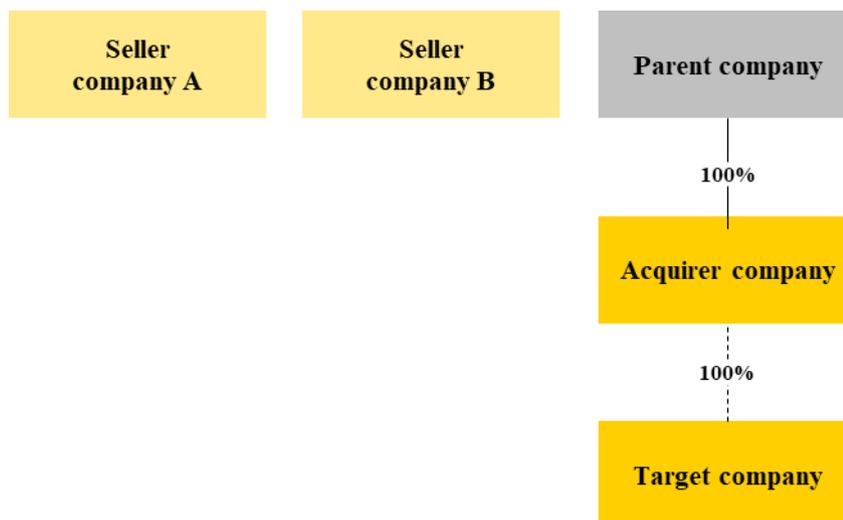
The base rule is that the acquisition cost of the shares can be deducted from the gain received. When company is founded, the invested equity capital can be thought to be the acquisition cost of the company shares. It is typical that the equity capital is initiated at a minimum value. The target company in the case transaction was founded in 2016, and the owners have been required to add more equity to the target company. The capital investments are allocated to the invested unrestricted equity fund (*In Finnish: Sijoitetun vapaan oman pääoman rahasto (SVOP)*) in the balance sheet which also increases the so-called acquisition cost. This decreases the tax consequences to the sellers because the invested capital is counted as an acquisition cost and it can be deducted from the purchase price received. (Income Tax Act 1535/1992, 46 §)

#### 4.3. Chosen deal structures to compare

The deal structures to compare are formed based on all the structuring possibilities explored in chapter 2. The chosen structures are commonly used in mergers and acquisitions, and the structures also represent wide range of different situations. The range of situations is thought to describe well the structuring possibilities and contributing to the analysis of which structure is the most suitable for which situation. In this chapter the formation of cash flow and the other required calculations in each of the structure scenarios is presented.

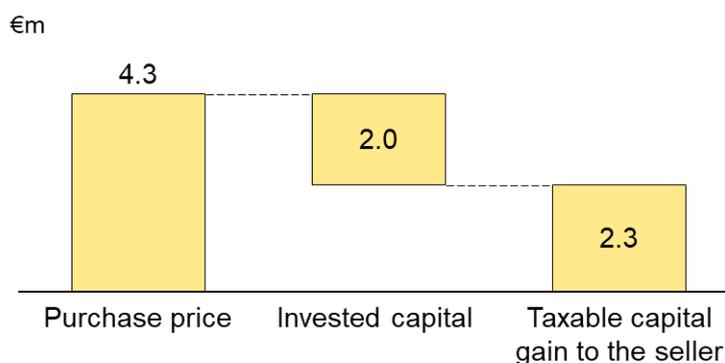
##### *4.3.1. Structure 1 – Cash payment*

Cash payment means a transaction where the common stock of the target company is sold to an acquirer and the acquirer pays the target shareholders by cash. Cash payment transaction can be thought to be the base case transaction that the other structures are compared to. In a stock sale transaction that is paid by pure cash, the sellers, i.e. the target shareholders, dispose the ownership of the whole company to the acquirer. The situation after the sale is illustrated in Figure 5.



**Figure 5.** The situation after a stock sale paid by cash.

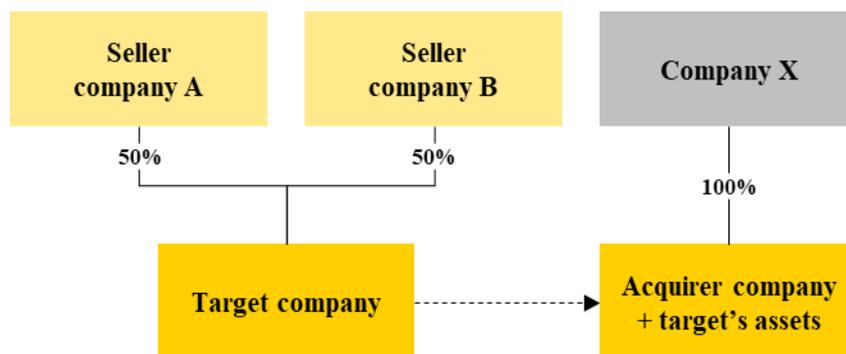
Cash payment is a safe transaction for the sellers, as they are left with no duties or liabilities in the target company. The only liability following the sale, are taxes that are due immediately after the sale. The sellers are allowed to subtract the initially invested capital to the target from their capital gain received resulting in taxable gain shown in Figure 6.



**Figure 6.** Taxable capital gain formation to the target shareholders in stock sale paid by cash.

#### 4.3.2. Structure 2 – Asset sale

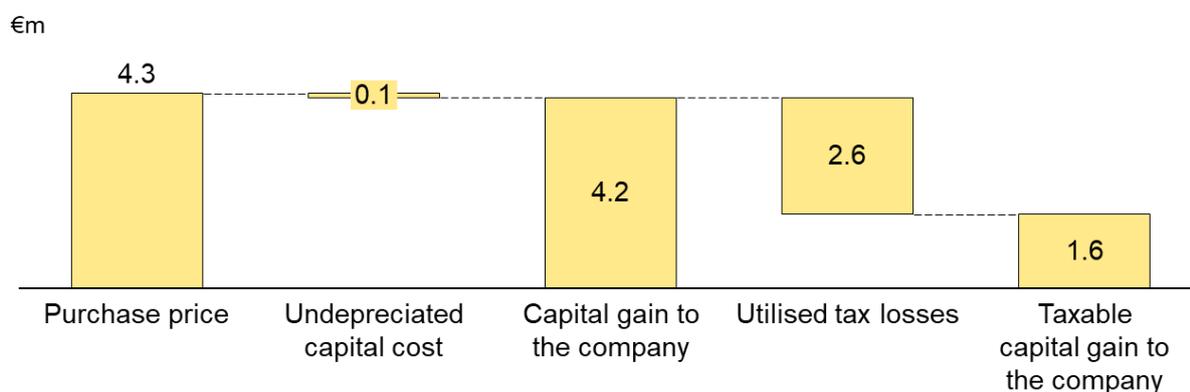
An asset sale differs from the stock sale in terms of the seller: in a stock sale the seller is the target shareholder, whereas in an asset sale the seller is the target company itself. Thus, the seller company remains as a legal entity but has no assets other than the equity after the transaction. Figure 7 shows the situations after an asset sale transaction.



**Figure 7.** The situation after an asset sale.

From the purchase price negotiations' point of view, one interesting asset would be goodwill that the seller has in its balance sheet. The valuation of intangible assets is usually difficult in an asset sale due to the differing views of the buyer and the seller on the profit-making potential of the intangible asset, such as goodwill.

Even though the seller does not normally prefer an asset sale transaction, an asset sale can be reasoned if the target company has confirmed losses that can be deducted from the gain resulting smaller tax consequences. The matter is explained more closely in chapter 2.5. There is no risk in losing the confirmed losses when selling only assets. The formation of taxable capital gain is illustrated in Figure 8.



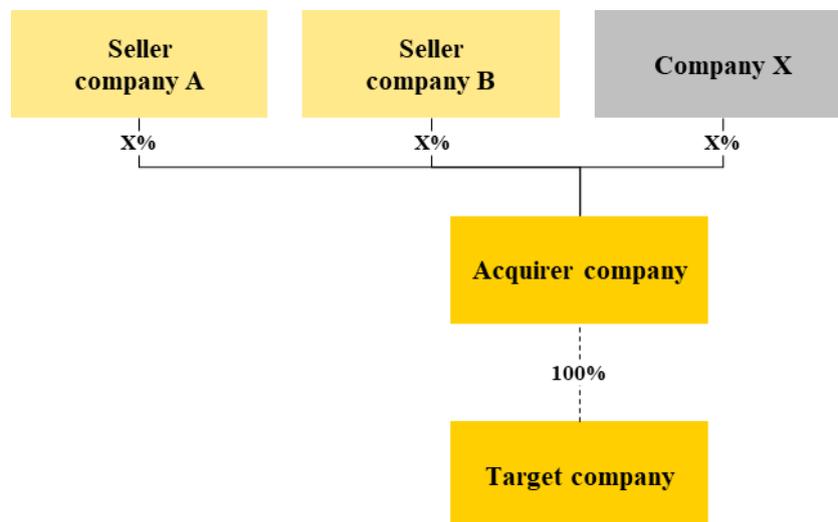
**Figure 8.** Taxable capital gain formation to the company in an asset sale.

Figure 8 shows the taxable gain for the target company, but it does not cover the taxation of the target shareholders. After the company taxes are paid, the gain can be divided further to the

owners. Also, the determination of the purchase price in an asset sale differs from a stock sale. Commonly, the value is determined as the sum of all the assets on sale but for simplicity and comparability, in the case transaction it is assumed that the acquirer buys the whole business and all the liabilities of the seller.

#### 4.3.3. Structure 3 – Share exchange

Share exchange is a special case of a stock sale transaction, where the sellers dispose the shares of the target and receive the acquirer's shares in exchange. The initial transaction is a stock sale where the acquirer company buys the target's shares and it becomes the owner of the target. This situation after the transaction is illustrated in Figure 9.



**Figure 9.** The situation after a stock exchange.

After the initial transaction, the bought target company is merged to the acquirer company according to a subsidiary merger in order to demonstrate the operative profitability of the new entity. As Vermaelen & Xu (2014) suggest, a pro forma balance sheet should be made for stock payments in order to compare the optimal leverage of the combined firm, and the consequences of the acquisition financing. A consolidated financial statement, pro forma, is formed to evaluate the effects of the investment for the seller's shareholders. The Limited Liability Companies Act (624/2006) does not recognize share exchange as a separate transaction and thus, the accounting of the merger is done using a specific consolidation account as

recommended by the accounting board of Finland. (Kirjanpitolautakunta 2017) Pro forma is presented in Table 9.

**Table 9.** Pro forma financial statement.

Financial summary, Pro forma (€t)	2020E	2021E	2022E	2023E	2024E	2025E	Terminal
<b>Revenue</b>	<b>64 156</b>	<b>66 136</b>	<b>69 244</b>	<b>71 399</b>	<b>73 589</b>	<b>74 528</b>	<b>77 431</b>
<i>Growth %</i>	-5.51%	3.09%	4.70%	3.11%	3.07%	1.28%	3.89%
<b>EBIT</b>	<b>3 845</b>	<b>4 060</b>	<b>2 598</b>	<b>2 835</b>	<b>3 077</b>	<b>4 187</b>	<b>3 361</b>
% of sales	6.0%	6.1%	3.8%	4.0%	4.2%	5.6%	4.3%
<b>Net income</b>	<b>3 845</b>	<b>3 526</b>	<b>2 078</b>	<b>2 268</b>	<b>2 462</b>	<b>3 350</b>	<b>2 688</b>
% of sales	6.0%	5.3%	3.0%	3.2%	3.3%	4.5%	3.5%
<b>Free cash flow</b>	<b>4 397</b>	<b>4 059</b>	<b>2 628</b>	<b>1 823</b>	<b>2 014</b>	<b>2 776</b>	<b>3 274</b>
<b>Terminal value</b>	-	-	-	-	-	-	<b>49 610</b>
Partial period adjustment	1.00	1.00	1.00	1.00	1.00	1.00	-
Discounting period	0.50	1.50	2.50	3.50	4.50	5.50	6.00
Discounting factor	0.95	0.87	0.79	0.72	0.65	0.59	0.56
Terminal period discounting factor	-	-	-	-	-	-	0.59
Present value of free cash flow	4 192	3 518	2 071	1 306	1 312	1 643	29 370
<b>WACC</b>	<b>10.00%</b>						
<b>Enterprise value</b>	<b>43 412</b>						

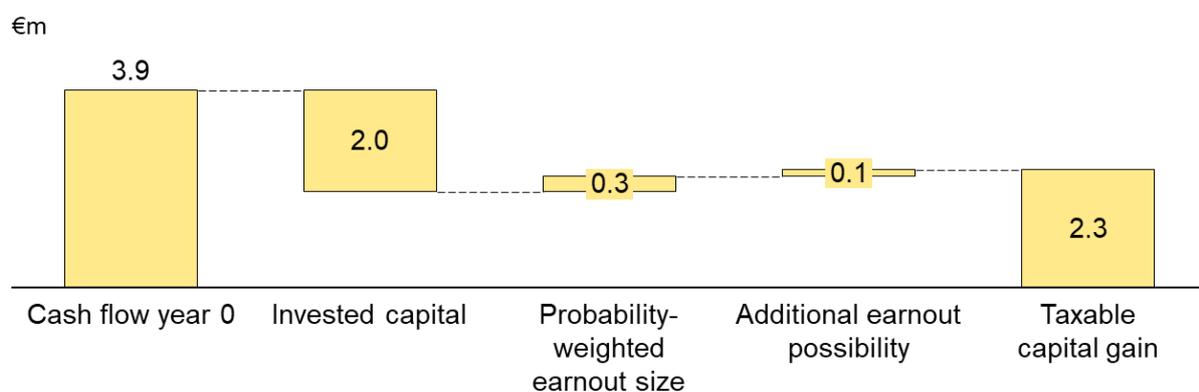
In addition to the combined values of the target and the acquirer that were calculated in chapter 4.2.1., the pro forma valuation includes synergy effect stemming from the operative benefits available for the combined entity. The present value of the synergies is determined accordingly to the discounted cash flow method.

#### 4.3.4. Structure 4 – Earnout payment

Earnout is a normal stock sale transaction except that the acquirer pays with an earnout payment, which means that the seller receives a fixed initial payment at the time of the signing and an earnout payment tied to a changing parameter at some pre-specified later time. The uncertainty of the earnout payment is usually huge, as it is possible not to receive it at all as stated by Kohers & Ang (2000).

Measuring the fair value of contingent payments is difficult because there is no industry standard (Cain et al. 2011). The traditional net present value (NPV) is not capable of capturing the managerial flexibility in the payment method choice. Contingent payments resemble real options because the valuation of the future cash flows requires the option pricing theory and

derivative pricing methods (Lukas et al. 2012). Cain et al. (2011) compute the earnout payment payoffs by first simulating the target performances, and then simulating the possible earnout payments using estimates of the target performance outcomes. In the case transaction, the earnout payment is calculated with the help of probabilities. The earnout payment covers 10 percent of the purchase price, and the initial probability to receive the price is set to 70 percent. A closer risk analysis to the cash flow and the probability is made in chapter 5. The formation of taxable capital gain is shown in Figure 10.



**Figure 10.** Taxable capital gain formation in an earnout structure.

In the calculation of the capital gain for the seller in Figure 10, the 10% earnout size of the initial purchase price is thought to consist of probability-weighted earnout payment of €303t and the additional earnout possibility of €129t. A sensitivity analysis is conducted for the probability measure in chapter 5.4.

#### 4.4. Risk definitions

In order to systematically evaluate the risk profiles of the different structures presented above, a risk matrix is created based on the findings on theoretical background and literature review presented in chapters 2 and 3. Chapter 2 forms the base for the cash flow profiles and the risks stemming from the structure features whereas chapter 3 addresses risks found out in previous literature. The recognized risks are cash flow uncertainty, time value of the cash flows, valuation risk, management risk, counterparty risk and litigation risk. The definitions of all risks are shown in Table 10 and presented in detail later in this chapter.

**Table 10.** Seller's risks in transaction structuring.

<b>Risk</b>	<b>Description</b>	<b>Protection</b>
Uncertainty of cash flow	The uncertainty of size or time of the future cash flows	Fixed cash flow at pre-specified time, avoiding hazy payments
Time value (risk)	Time value of money describes the idea that the money is worth more now than in the future	Estimating future cash flows and discounting them to present value with a chosen discount rate
Valuation risk	The risk of undervaluation of the target, or overvaluation of the acquirer	Target company valuation, Acquirer company valuation
Management risk	The agent problem of target's management acting on their own interest instead of the target shareholders'	Proper incentive setting for target's management
Counterparty risk	The default risk of the acquirer, or risk for employees and customers	Vendor due diligence
Litigation risk	The risk for disagreement, or failure in disclosure obligation and resultant indemnities	Proper due diligence-process and decreasing information asymmetry between the seller and the buyer

Next, these risks are described more closely one by one, and lastly, a risk matrix dimensions to be used in the risk evaluation are presented.

#### *4.4.1. Uncertainty and time value of the cash flows*

Uncertainty of the cash flows considers factors that affect the variation of the future cash flows and values the secure cash flows higher than the uncertain. Time value describes one of the core principles of finance, the time value of money. It measures the cash flow as a function of time valuing the current cash flow higher than the future cash flow. Measuring the uncertainty aims to make the cash flow profiles of the different structures comparable in terms of present value and probability to receive the cash flow. The cash flow profiles vary in each structure: in some the purchase price is received as cash on the day of the deal closing, and in others the cash flow is uncertain and tied to the future performance of the company. Uncertainty of the cash flows is higher in share exchange and earnout transactions than in traditional cash payments as explained by Lukas, Reuer and Welling (2012), Kohers and Ang (2000), and Viagreno, Gatti and Prencipe (2018).

The chosen discount rate should reflect the risk and insecurity of the future cash flow. The rate should determine the rate of return for the cash flow as a cost for waiting instead of getting the cash flow immediately. Logically, the riskier the cash flow is the bigger the rate and the smaller the discounted cash flow. Usually, discounting factor is calculated based on the costs of capital because it is thought that the future cash flows should cover the financing costs of the company. The rate of return must be bigger than the risk-free rate.

#### *4.4.2. Valuation risk*

La Bruslerie (2012) presented information asymmetry as a factor increasing the uncertainty around the final price in chapter 3.2.2. Information asymmetry is one of the most important factors, why there exists different structuring options in the first place as it affects the valuation of both the target and the acquirer. Choosing deal terms that decrease the information asymmetry between the seller and the acquirer increase the probabilities of getting the purchase price most close to the real value of the target. Synergy risk can be thought to be part of the valuation risk, because synergies are valued as part of the company valuation. The risk of the synergy realization and valuation affects the seller through the price received and in the merger transactions (Moretto & Rossi 2008, Rappaport & Sirower 1999).

Simply put, the valuation risk means the risk that the target results undervalued when and thus the shareholders receive smaller cash flow than the real value of the target company would be. If the purchase price is paid by acquirer's shares, the valuation risk also considers those shares, because the risk is that the acquirer's shares are overvalued. Overvaluation of the acquirer's shares results in a worse exchange ratio and eventually lower share of ownership for the target shareholders. From investment perspective, the target shareholders are required to re-invest the gain received from the sale to receive profit to the existing capital, so it is essential to alternative investment opportunities and compare them to the target's profit-making capabilities a stand-alone unit. (Vermaelen & Xu 2014)

The risk can be managed through careful valuations of the companies, especially in a share exchange transaction where the acquirer's stock can be thought to be an investment made by the target shareholders. In stock payment transaction, also the acquirer's overvaluation is huge risk. Di Giuli (2013) used the standard deviation of the acquirer returns as a proxy of

uncertainty of the value. Cash payment as a transaction consideration only faces the valuation risk through the fact that the acquirer might undervalue it.

#### *4.4.3. Management risk*

The first research stream presented in chapter 3.2.1. addressed the issue of the management's behavior in different transaction situations. Management risk derives from the agent problem between target's management and the shareholders meaning that the management does not necessarily act on the best interest of the shareholders if they are not shareholders themselves. (Cai & Vijn 2007) Thus, the most companies have ownership requirements and option systems tied to the company performance to avoid agent problem. Stocks and stock options still do not completely remove the agent problem, because the manager might wish to liquidate his holdings through a sale of the company and be reluctant towards stock payment. (Schleifer & Vishny (2003), Vermaelen & Xu 2014)

#### *4.4.4. Counterparty risk*

Counterparty risk stems from information asymmetry between the target and the acquirer and is highlighted in share exchange transactions. As Koerniani et al. (2015), and Furfine and Rosen (2011) say, stock-for-stock acquisitions often increase the riskiness for the shareholders due to increased leverage or other financing activities for the acquisition. Higher leverage might lead to higher default risk and probability of bankruptcy.

#### *4.4.5. Litigation risk and indemnities*

Some deal structures have higher probability to end up in disagreement and litigation as stated by Viagreno et al. (2018). The more complicated the contract terms, the more likely the transaction parties are to end up to litigation. Complicated contract terms can be thought to describe the level of disagreement and required confirmations leading to more issues to disagree on. Earnout structures are an example of extremely complicated contracts.

#### 4.5. Risk matrix

The seller's risks described above are evaluated with a three-step scale for each chosen deal structure. The levels of risk are low, moderate and high where low is the best and high is the riskiest dimension. The initial matrix and its dimensions are presented on Table 11.

**Table 11.** Risk matrix dimensions.

	Low (value = 1)	Moderate (value = 2)	High (value = 3)
Cash flow uncertainty	Cash flows are risk-free if received at time zero and by fixed amount	Cash flow uncertainty is moderate if there is only minor variation in the size and time of the cash flow	Cash flow uncertainty is high when the size or time of the cash flow is not determined precisely
Time risk	Discounting value of time to the purchase price is low when it is received now indicating bigger cash flow to the target shareholders	Discounted cash flow is moderate when the cash flows are received in the near future	Discounting value of time to the purchase price is high when it is received far in the future meaning smaller cash flow to the target shareholders
Valuation risk	Valuation risk is low when the information asymmetry is low and/or the return on the alternative investment is secure	Valuation risk is moderate if either the information asymmetry is partially addressed	Valuation risk is high when the information asymmetry is high and/or the return on the alternative investment is uncertain
Management risk	Management risk is low when the management incentives encourage the managers to act on the interests of the shareholders	Management risk is moderate when the incentives to act on behalf of the shareholders are low or moderate	Management risk is high when the manager is not a shareholder of the target company or when he has no other incentives
Counterparty risk	Counterparty risk is low if the financial situation of the acquirer can have only minor if any effect on the target	Counterparty risk is moderate if the financial situation of the acquirer can have a moderate effect on the target	Counterparty risk is high when the financial situation of the acquirer can have a high effect on the target
Litigation risk	Litigation risk is low when the contract terms are standard, and the level of agreement is high	Litigation risk is moderate if the contract terms are not standard, and the information asymmetry exists	Litigation risk is high when the contract terms are complicated, or the information asymmetry is high

The risk matrix is filled for each of the scenarios in the next chapter by color-coding. The matrix dimensions are exclusive, and only one square in each risk can be filled at a time. This square is filled with a color to get a visual illustration of the risk matrix board. The square has also a numerical value that is used in the calculation of the total risk value of the structure. The total risk value of the structure is calculated as the average of the square values.

## 5. ANALYSIS OF THE DEAL STRUCTURE SCENARIOS IN CASE TRANSACTION

The analysis of the deal structures is presented in this chapter. The actual cash flows calculated and shown, and the risks in each structure are described and analyzed in detail. Also, the price sensitivity of the valuation to the used parameters is demonstrated and the sensitivity analysis of the cash flow received in terms of the used discount rates is presented for each scenario. Eventually, the deal structures are compared through present value of cash flows and the total risk value.

### 5.1 Structure 1 – Cash payment

A stock sale transaction that is paid by cash is the base structure to which the other structures are compared. Pure cash payment is the simplest payment option for the seller, because the seller receives the whole purchase price as cash and the cash flow is certain to be received at the time of the sale. Thus, the discounting factor is 1 and the time risk is non-existent. Formation of taxable gain was explained in chapter 4.3.1. The resulting cash flow is demonstrated in Figure 11.



**Figure 11.** Cash flow to the owners in cash payment of stock sale transaction.

Even though the cash flow is certain, it does not mean that the cash flow is large enough compared to the target company's real value. Thus, the seller is exposed to a valuation risk. Valuation risk can be decreased by providing the acquirer all the available information on the target and this way decreasing the information asymmetry. Providing all the known information

also decreases the litigation risk because the seller has declared all the information it knows or should have known. The whole risk matrix for cash payment is shown in Figure 12.

	Low (value = 1)	Moderate (value = 2)	High (value = 3)
Uncertainty of cash flows			
Time risk			
Valuation risk			
Management risk			
Counterparty risk			
Litigation risk			

**Figure 12.** Filled risk matrix of cash payment.

The total risk of the cash payment is low, only 1.3 as calculated as the average of the six dimension's values. Though, one notable risk is the management risk. Cash payment allows the manager to sell and liquidate his stock and option holdings in the target company as explained by Vermaelen & Xu (2014) and Cai & Vijh (2007) in chapter 3.2.1. Counterparty and litigation risk are low in a standard cash payment if the seller acts sincerely and reveals all the necessary information during the due diligence process to the acquirer. Counterparty risk does not affect the target shareholders because they are not under the influence of the acquirer after the sale.

The valuation and thus the price received is highly dependent on the used discount rate, that is, WACC level. To demonstrate the valuation risk and the sensitivity to the used valuation parameters, the sensitivity analysis is conducted to the weighted average cost of capital (WACC) for the target. WACC was determined to the case companies in chapter 4.2.1. where the companies were valued. But as the company valuation is highly affected by the discount rate, the sensitivity analysis is conducted for this measure. The other parameter that the sensitivity is used for is the capital invested by the seller indicating the acquisition cost that can be subtracted from the taxable gain and thus decreasing the tax consequences and increasing the received cash flow by the sellers. This makes the case situation more comparable to other

transaction cases with different amount of taxes due: in the fully taxable, or in the non-taxable cases. The situation where the invested capital is low, the taxes are bigger and the received cash flow is smaller whereas in the situation where the invested capital is bigger than the purchase price, no taxes need to be paid. The sensitivity analysis of WACC and the capital invested is presented in Table 12.

**Table 12.** Sensitivity analysis of the cash flows in cash payment.

		Capital invested by the sellers (€t):						
		500	1000	1500	2000	2500	3000	3500
<b>Target WACC:</b>	15.0%	2696	2796	2896	2996	3096	3196	3296
	14.0%	2937	3037	3137	3237	3337	3437	3537
	13.0%	3220	3320	3420	3520	3620	3720	3820
	12.0%	3558	3658	3758	3858	3958	4058	4158
	11.0%	3968	4068	4168	4268	4368	4468	4568
	10.0%	4476	4576	4676	4776	4876	4976	5076
	9.0%	5120	5220	5320	5420	5520	5620	5720

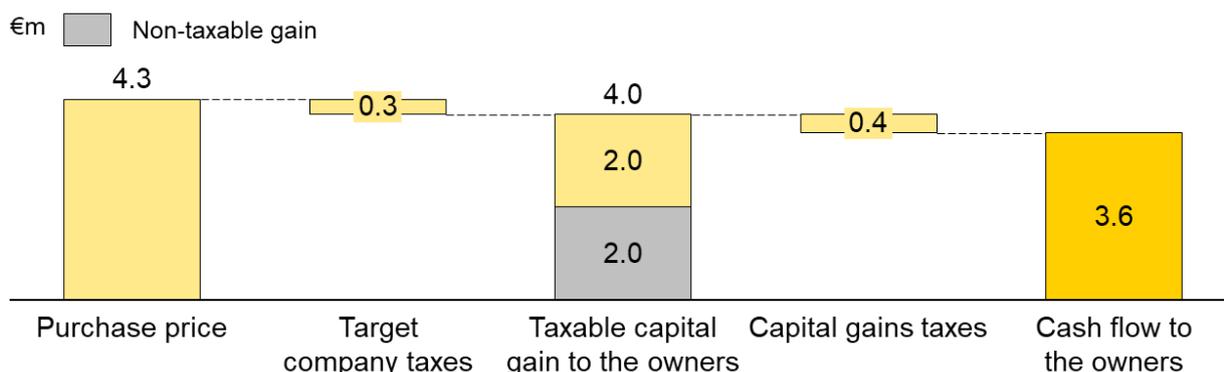
**Cash flow received by the seller:**

3 420 - 4 368 (€t)    
 3 037 – 4 976 (€t)    
 2 696 – 5 720 (€t)

The sensitivity analysis suggests that the most probable range in the cash flow received is between €3 420t and €4 368t. With the current level of invested capital (€ 2 000t) the effect of the target's WACC results in variation from €2 996t to €5 420t. This means that assuming similar cash flow estimates, and a 15 percent return requirement, the target receives cash flow of €2 996t. Note that this is different measure than the purchase price as the taxes are subtracted and the cash flow is discounted.

## 5.2. Structure 2 – Asset sale

An asset sale is an expensive structure for the seller because of the double taxation. First, the target company is taxed by the gain it receives from the sale of an asset. And when the profit is dealt out of target company, the owners are taxed further. The cash flow received by the owners is illustrated in Figure 13.



**Figure 13.** Cash flow to the owners in an asset sale transaction.

Compared to a stock sale transaction an asset sale can be thought to be riskier for the target shareholders, as the target company acts as the initial seller, not the shareholders. This way the management of the target company may sell target’s assets without the acceptance of its owners – the board acceptance is enough. Thus, the management risk is set to highest level in the risk matrix in Figure 14. Though, the board’s decision-making capacity can be limited with the corporate by-laws. There is no regulation in the Limited Liability Companies Act (Act 624/2006) considering the decision-making in transactions, and the risks for minor shareholders are emphasized. There exist though some legal protection in the regulation, but leaning on the court process is difficult and expensive for the shareholder.

	Low (value = 1)	Moderate (value = 2)	High (value = 3)
Uncertainty of cash flows	Low		
Time risk	Low		
Valuation risk		Moderate	
Management risk			High
Counterparty risk		Moderate	
Litigation risk	Low		

**Figure 14.** Filled risk matrix of an asset sale transaction.

Also, the counterparty risk is higher due to the possibly more complicated negotiations about the assets and liabilities on sale. The seller faces a risk that the acquirer does not want to buy all the assets, rather chooses the best and leaves the rest for the seller. The stock sale is easier in this matter because the acquirer buys the common stock, and it does not affect the assets or liabilities of the target company. Litigation risk is though, low, because in an asset sale all the transferring liabilities are clearly set in the contract and there should not be any surprises for the acquirer that it could take to court.

Similarly to the cash payment transaction, the valuation is dependent on the discount rate, and should be adjusted to valuation risk by conducting a sensitivity analysis. The results of sensitivity analysis are shown in Table 13.

**Table 13.** Sensitivity analysis of the cash flows in asset sale.

		Capital invested by the sellers (€t)						
		500	1 000	1 500	2 000	2 500	3 000	3 500
Target WACC:	15.0%	2 606	2 706	2 806	2 906	3 006	3 106	3 206
	14.0%	2 799	2 899	2 999	3 099	3 199	3 299	3 399
	13.0%	3 025	3 125	3 225	3 325	3 425	3 525	3 625
	12.0%	3 296	3 396	3 496	3 596	3 696	3 796	3 896
	11.0%	3 624	3 724	3 824	3 924	4 024	4 124	4 224
	10.0%	4 030	4 130	4 230	4 330	4 430	4 530	4 630
	9.0%	4 545	4 645	4 745	4 845	4 945	5 045	5 145

**Cash flow received by the seller:**

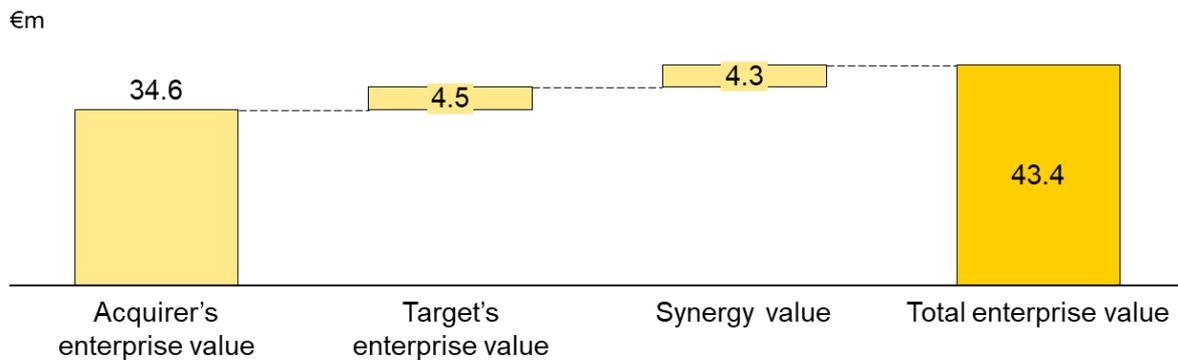
3 225 - 4 024(€t)
2 899 – 4 945 (€t)
2 606 – 5 145 (€t)

Sensitivity analysis suggests that if the acquirer uses a high return requirement, i.e. 15%, for the target, and the target's invested capital is at €2000t the sellers receive cash flow of € 2 906t, which is almost €100t less than in the situation of cash payment.

### 5.3. Structure 3 – Share exchange

The risk for the sellers is the highest in stock payment type of transaction mainly because the cash flow is postponed to the unspecified future and the target shareholders commonly lose the control for the acquirer shareholders. In addition, the size of the ownership received as a transaction consideration depends on the valuations of the companies. The valuation risk may

be said to double compared to the other structures because in addition to the undervaluation risk of the target, the target shareholders are now faced with also the risk of overvaluation of the acquirer. Both, the seller and the acquirer must be valued using similar techniques by an outside expert in order to receive as objective valuation as possible. The exchange ratio was determined in chapter 4.2.1. and resulted in 11.61 percent ownership for the target with the valuation levels presented in Figure 15.



**Figure 15.** The valuation of the combined entity.

Figure 15 describes the formation of the enterprise value of the combined entity: in addition to the stand-alone values of target and the acquirer, synergy effect is included in the total valuation of the combined entity. Synergies include operative synergies in the size of €2 735t and additive synergies of €1 549t resulting from higher target valuation as part of the lower risk combined company. Lower discount rate is used in the combined company valuation than as when the target was valued as a stand-alone unit. This leads to a higher valuation of the target. If the total synergies €4 248t are taken into account when determining the share of ownership as suggested by Burch et al. (2012), and Moretto and Rossi (2008), the share of ownership received by the target increases from 11.6% to 13.0%. If this share of ownership is multiplied with the enterprise value of the combined company, this means a received value in size of €5 041t to €5 644t. The sensitivity of the share of the ownership to the target and acquirer valuations through WACC rates is illustrated in Table 14.

**Table 14.** Sensitivity analysis for the seller's share of ownership.

		Acquirer WACC:						
		13.0%	12.0%	11.0%	10.0%	9.0%	8.0%	7.0%
Target WACC:	15.0%	11.8%	10.9%	10.0%	9.1%	8.2%	7.2%	6.2%
	14.0%	12.7%	11.7%	10.8%	9.8%	8.8%	7.8%	6.7%
	13.0%	13.7%	12.7%	11.7%	10.6%	9.6%	8.4%	7.3%
	12.0%	14.9%	13.8%	12.7%	11.6%	10.4%	9.2%	7.9%
	11.0%	16.3%	15.2%	14.0%	12.8%	11.5%	10.1%	8.8%
	10.0%	18.0%	16.7%	15.5%	14.1%	12.7%	11.3%	9.7%
	9.0%	20.0%	18.7%	17.3%	15.8%	14.3%	12.7%	11.0%

In addition to the valuation risk and parameters, the risk profile of the merging companies must be considered carefully when choosing a merging partner. A low risk, mature, company is more willing to merge with riskier and more profitable targets and exchange its lower return shares to the target's shares, as this means an increase in the expected return for its shareholders. If the target is less risky, the expected return for the acquirer shareholders decreases and the exchange ratio is negative, and the merger does not take place. (Moretto & Rossi 2008)

In the case transaction, the target's risk should be decreased as a result of the share exchange as it is acquired by a bigger company having a firmer financial situation. Though, the risk is that the synergies will not be realized. In general, counterparty risk is big in share exchange transactions because the target loses the control of its own assets and becomes part of a bigger entity. Litigation risk is low as the target is integrated to the acquirer it would not be profitable to go to court. Management risk is seen as moderate because as Ghosh and Ruland (1998) stated, the managers who don't have significant ownership on the target, has no incentive to negotiate for stock payment because it does not affect their situation. If the manager was also an owner of the company, it would encourage him to act on the favor of the shareholders like himself. Thus, with proper incentive schemes, the target manager will act according to the interests of the shareholders. The total risk map of the share exchange is shown in Figure 16.

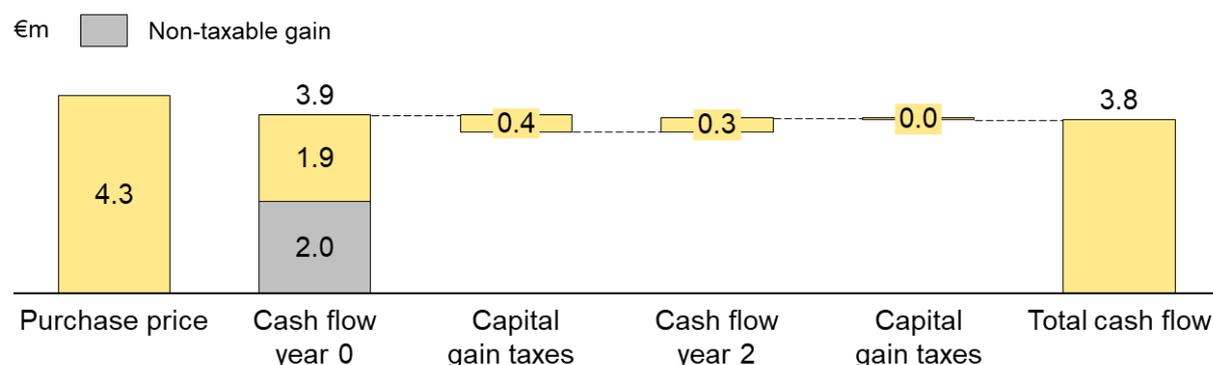
	Low (value = 1)	Moderate (value = 2)	High (value = 3)
Uncertainty of cash flows			High
Time risk			High
Valuation risk		Moderate	
Management risk		Moderate	
Counterparty risk			High
Litigation risk	Moderate		

**Figure 16.** Filled risk matrix of share exchange.

The risk matrix suggests a total risk value of 2.3 out of three, which is high due to the multiple uncertainties in the structuring. The total value is calculated as the average of the unique values.

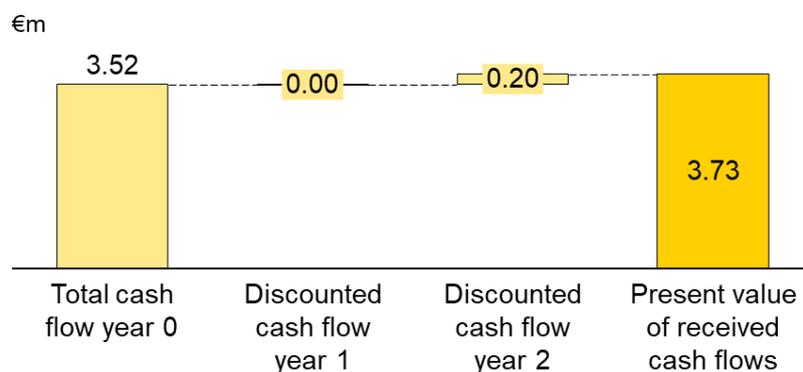
#### 5.4. Structure 4 – Earnout payment

By definition, an earnout payment should divide the risks from the acquirer to the seller, and thus the hypothesis is that that the risk is bigger in earnout payment than in pure cash payment. Though, the earnout structure could also provide bigger returns than normal cash payment, but the target shareholder cannot trust on this as the uncertainty is high. To probability of receiving the earnout payment in year 2 (cash flow year 2) is initially set to 70%, and the resulting cash flow is illustrated in Figure 17.



**Figure 17.** Cash flow from earnout payment with 70% probability of receiving the earnout.

The formation of taxable gain is explained in chapter 4.2.2. In addition to the probability, the earnout payment must be properly discounted as the cash flow is received in the future. Here the discount rate used is the WACC of the target, and the present value of the cash flows subtracted by the taxes are presented in Figure 18.



**Figure 18.** Present value of the cash flows of an earnout payment.

There is no standard way to value the earnout payment, but the probability measure combined with the sensitivity analysis provides a range of estimations on the cash flow analysis. The probability shall be interpreted in a way that in the case of 0.7 probability the 10% earnout payment is multiplied by the probability and this value is discounted to the present value, to the time of the sale. The sensitivity analysis of received cash flows in terms of probability and target's WACC is illustrated in Table 15.

**Table 15.** Sensitivity analysis on the cash flow of an earnout payment.

		Earnout probability:						
		0.10	0.30	0.50	0.70	0.90	1.10	1.30
<b>Target WACC:</b>	15.00%	2 773	2 816	2 855	2 895	2 934	2 973	3 012
	14.00%	2 992	3 040	3 083	3 127	3 171	3 214	3 258
	13.00%	3 250	3 303	3 351	3 400	3 449	3 498	3 547
	12.00%	3 559	3 616	3 671	3 727	3 782	3 837	3 892
	11.00%	3 932	3 997	4 060	4 123	4 185	4 248	4 311
	10.00%	4 395	4 468	4 541	4 613	4 685	4 758	4 830
	9.00%	4 982	5 067	5 151	5 236	5 320	5 405	5 489

**Cash flow received by the seller:**

3 351 - 4 185 (€t)
3 040 - 4 758 (€t)
2 773 - 5 489 (€t)

In addition to valuation risk, the uncertainty of cash flows is high in an earnout payment. In the case transaction the risk could also be set to be moderate because the share of the earnout payment is small in relation to the total payment. Another important risk to consider is the litigation risk as the earnouts are known to be prone to end up in the litigations (Viagreno et al. 2018). This can be addressed by careful and thorough negotiations, where the earnout clauses are agreed by the target and acquirer. But the question is, if the cost of often long and complicated negotiations, and the risk for litigation, is worth the earnout payment structure, and the possibly decreasing information asymmetry.

Commonly, the earnout payment is initiated by the acquirer. There is no interest for the seller to suggest an earnout clause, as the risk of acquirer taking control after the initial sale is huge. This leads to the counterparty risk, which is moderate in the earnout structure as the target is under the influence of the acquirer company during the earnout period which is two years in the case transaction. Management risk is moderate because the target's management has a big impact on receiving the earnout payment as they have the possibility to contribute to the target's performance to which the earnout payment is tied on. The whole risk matrix for earnout payment structure is presented in Figure 19.

	Low (value = 1)	Moderate (value = 2)	High (value = 3)
Uncertainty of cash flows			
Time risk			
Valuation risk			
Management risk			
Counterparty risk			
Litigation risk			

**Figure 19.** Filled risk matrix of an earnout payment structure.

The total risk value for the earnout payment is 2.3. – similar to the share exchange. An initial feel on the size of the risk is that it is slightly overrated in the situation of the case transaction but might be accurate for a structure where the share and size of the earnout payment is bigger in relation to the total purchase price.

### 5.6. Comparison of deal structures

The four deal structures were analyzed through three measures: received discounted cash flow for the sellers, sensitivity analysis of the received cash flows and the risks faced by the seller. Table 16 summarizes the findings.

**Table 16.** Summary of cash flow and risk analysis on different deal structures.

Structure	PV of cash flows (target valuation €4 543t)	Required price for cash flow of €3 858t	Sensitivity analysis range for WACC value (€t)	Total risk value
Cash payment	3 858	4 543	2 696 – 5 720	1.3
Asset sale	3 596	4 953 (9.0%)	2 606 – 5 145	1.8
Share exchange	5040	3373 (-2.6%)	2 692 – 8 682	2.3
Earnout payment	3 726	4 715 (3.8%)	2 773 – 5 489	2.3

Table 16 is structured as the cash payment representing the base structure to which the other deal structures are compared to. The first column represents the present value of discounted cash flows with the target valuation of €4 543t, as they were presented in the chapters 5.1.-5.5 above. The second column tells the required purchase price in order to receive the same cash flow in size as in the cash payment. For example, to receive the same cash flow from an asset sale as from the stock sale with cash payment, the price should be 9.0% higher than in cash payment structure resulting in the valuation of €4 953t. On the contrary, share exchange structure profits from the synergy value of the combined entity, and thus the target valuation could be decreased by 2.6% resulting in the purchase price of €3 373t and still eventually be as valuable.

The sensitivity analysis gives similar range for each scenario as the same target WACC is used as the changing parameter in all the scenarios. Capital invested is used as the other changing parameter for cash payment and the earnout payment in order to examine the benefit of tax-deductions to the received cash flows. In share exchange, the acquirer valuation is used as the other uncertain variable whereas the uncertainty in earnout parameter is measured by the probability of receiving the payment.

Lastly, the total risk values are calculated as the average of the risk matrix dimensions. According to this measure, the cash payment can be interpreted as the less risky structure as was assumed based on the theoretical review. Asset sale is not risky, but it has the smallest cash flow, whereas the share exchange can be said to be the most profitable in terms of value received even though the cash flow is not received at the time of the sale and this feature makes it very risky for the target shareholders. Same applies for the earnout payment structure.

## 6. SUMMARY AND CONCLUSIONS

This chapter summarizes the whole thesis by answering questions on what has been studied, how has it been studied, and what has been found as a result of the research. The chapter also provides answers to the research questions presented in chapter 1. The purpose of this thesis was to understand the effects of different deal structuring options to the seller in terms of risk and value. This thesis aimed at contributing to the limited amount of literature on the subject. The success of these objectives is also evaluated.

To begin with, the reader was made familiar with the basic concepts of different deal structuring options, and the state-of-the-art literature was explored to find out what the previous research had found from the subject. Based on the theoretical background, four deal structures were chosen to closer evaluation and those were demonstrated through a case transaction. The empirical research was conducted as a single-case study utilizing quantitative modelling and thorough analysis on the case.

### 6.1. Conclusions

The main objective of the thesis was to answer the question: How does the deal structure affect the risk and value faced by the seller? The supporting sub-questions were: What kind of factors the seller needs to take into account in the structure of a merger or acquisition deal and how to evaluate the effect of these factors? What has previously been found in academic research considering the impact of the deal structure to the risk and value faced by the seller?

The previous literature formed a base for the phenomenon and explained majority of the risks faced by the seller. The role of the empirical research in this matter was to demonstrate how the risk faced by the seller should be taken into account when valuing the cash flows received from the purchase price. The recognized risks that were analyzed in the empirical research were management risk, valuation risk, counterparty risk and litigation risk. Management risk means the risk that the management acts on its own interest instead of the target shareholders. The risk is high in cash transactions because it allows the manager to cash out the illiquid stock and option holdings. But the owner manager might also have incentives towards the stock payment if he appreciates the influencing potential in the combined firm. (Cai et al. 2007; Ghosh et al.

1998; Kobeissi et al. 2010; Vermaelen et al. 2014). Valuation risk means either the undervaluation risk of the target resulting in a lower purchase price than the target's real value, or overvaluation of the acquirer affecting the exchange ratio in the share exchange transaction. Valuation risk can be addressed through decreasing information asymmetry and adjusting the valuation parameters. (Burch et al. 2012; Finnerty et al. 2012; La Bruslerie 2012; Vermaelen & Xu 2014) Litigation risk comes from the high probability of the earnout payments to end up in the court due to the complex contracts. Counterparty risk is especially related to the stock-for-stock transactions where the target becomes a part of the acquiring entity and is under the influence of the target.

Finally, we can conclude, how the four examined deal structures affect the risk and value faced by the seller: 1) Stock sale paid by cash is the less risky deal structure and is affected mostly by the valuation and management risks. The cash flow is certain to be received at the time of the sale so the value for the seller is known; 2) An asset sale is a bit riskier compared to the cash payment, as it is under high management risk due to that the target shareholders' acceptance on the sale is not required. In addition, the asset sale provides the least cash flow due to the double taxation; 3) A share exchange transaction intuitively is the riskiest deal structuring method and the literature agrees on that. When paid by shares, the overvaluation of the acquirer's shares is an additional risk to consider compared to the other payment types. The target is also exposed to the counterparty risk as it will be affected by the acquirer's actions. Though, the available synergy benefits decrease the required purchase price by the target shareholders and compared to the cash payment, the payment could be -2.6% smaller in share exchange transaction. 4) The result of the analysis indicates that the earnout payment is as risky as the share exchange due to the high uncertainty of cash flows and high litigation risk. The received value for the sellers is smaller in this transaction. Though, the earnout payment may be constructed in a way that it provides a real profit-making incentive to the target to meet the performance target.

Based on the empirical research we can agree to the consensus of the researchers that the deal structure affects the purchase price (Kohers & Ang 2000; Bugeja & da Silva Rosa 2010; Burch et al. 2012; Chen & Hilpert 2015; Erickson & Wang 2007; Finnerty et al. 2012; La Bruslerie 2012; Vermaelen & Xu 2014; Viagreno et al. 2018).

## 6.2. Reliability and validity

As mentioned in chapter 4, case-study as a research method does rarely provide generalizable results as the nature of the research is more in the unique details of the phenomenon than in common characteristics. This might affect the reliability and validity of the results.

As validity refers to the quality of the research and the extent to which the findings are actually relevant to the phenomenon in question, the conducted case study research can be said to addressing the issue moderately. (Mills et al. 2010, p. 959) The choice of the case transaction may be questioned in terms of validity as if it represents the phenomenon in question in the best possible way. In order to make more comprehensive analysis on the deal structures, multiple different transaction situations would be needed. But the purpose of the case study was to demonstrate the possible option that the sellers have, not to be an exclusive list of all the possible options in all the possible transaction situations. The research provides a credible answer to the research questions, so validity can be said to be at least moderate even though the results are not generalizable.

As reliability refers to the consistency of measures, the issue in the conducted study that could affect the reliability is the measurement of the cash flows and risks and the used parameters in the valuations (Mills et al. 2010, p. 960-961). The recognized risks and the measure of those risks through a risk matrix can be questioned in terms of reliability as the results are based on the author's interpretation of the data. The valuation measures and parameters serve as assistant measures, as they are constant in all the deal structures and thus do not affect the results of the research. The valuation parameters are not meant to reflect the absolute reality, as those measures rather serve as an example of how to assess the risk related to the valuations. Measuring the received cash flow from the purchase price can be said to be reliable measures as there is no subjective interpretation in the parameters.

## 6.3. Future research

As proved, also the seller faces risks in transaction structuring process that affect the optimal structure of the seller. The risks recognized in this thesis could be studied in detail. In order to generalize the results, a statistical approach would be required. Also, interesting research stream would be to examine the equilibrium transaction structure that truly addresses the

information asymmetry of the both parties and decreases the risk of both transaction parties to minimal. The initial hope was that this thesis could have provided a generalizable tool for small company owners that could be used as a modelling tool for different deal structuring options. But the initial research on recognizing the risks and value creation potential was that massive that the generalizable tool is still something to wish for.

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## APPENDICES

**Appendix 1.** Mathematical proof on exchange ratio calculations.**Target**

Enterprise value (€t)	4 543
÷ Shares outstanding (pcs)	50
<hr/>	
Value per share (€t)	<b>90.9</b>

**Acquirer**

Enterprise value (€t)	34 585
÷ Shares outstanding (pcs)	1010
<hr/>	
Value per share (€t)	<b>34.2</b>

Target's shares outstanding	50
× Exchange ratio	2.65
<hr/>	
New shares issued	<b>133</b>

Acquirer's shares outstanding	1 010
× New shares issued	133
<hr/>	
Total shares	<b>1 143</b>

$$\text{Target's ownership received as payment} = \frac{133}{1\ 143} = 11.6\%$$

$$\text{Target's ownership received as payment} = \frac{4543}{34\ 585 + 4\ 543} = 11.6\%$$