Risk Reflection in Business Valuation Methodology

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This article is to investigate relevant and sophisticated problem concerned with risk reflection in business valuation methodology.

The relevance and sophistication of risk reflection in business valuation methodology is affirmed by the discussions of scientists who analyse the problems of business valuation. Description, classification and valuation of risk within context of business valuation have several approaches in scientific literature. Presented classifications of risk are various and include various types of risk and factors determining risk.

Considering variety of risk classifications it is suggested risk's classification based on decomposition of systematic (external) and unsystematic (internal) risks to the factors that have influence these kinds of risks. Factors of systematic risk are classified according to factors of macro environment and industry environment. Factors of unsystematic risk are divided into two groups: quantitative and qualitative factors. Classification based on approach of risk decomposition allows determining the factors of risk of various levels and also shows the connection between these factors and both systematic and unsystematic risks.

The analysis of scientific literature shows that there is more than one approach to risk reflection in the business valuation methodology. Two alternative ways of risk reflection within the calculations of business value are mentioned in the works of different authors who research the problems of business valuation. The first one is related to risk's reflection in the calculations of cash flow and the second one allows risk valuation in the discount rate. Although various definitions of discount rate are given in scientific literature most authors describe it as rate of return used to transfer free cash flow into current value. Discount rate is the company's financing source price which reflects time factor and risk in the calculation. According to this risk should be reflected in discount rate calculations within context of business valuation.

Risk valuation in the calculations of discount rate is based on discount rate decomposition to different level factors having influence on discount rate. First level factors are cost of equity and cost of debt; second level factors are debt rate of return and equity rate of return; third level factors are interest rate, profits tax, equity rate of return; fourth level factors are risk-free rate, risk premium for factors of macro environment, industry environment and internal environment. It is necessary to evaluate narrowness of risk- return models appliance in practice of business valuation in Lithuania while deter-mining factors of one of discount rate elements – equity rate of return. According to this narrowness it is suggested to calculate cost of equity by summing up securities risk-free rate with expert's determined premium for risk for factors of macro environment, industry environment and internal environment

Scheme of discount rate factorial analysis within context of business valuation created by the authors of this article allows envisaging relation between discount rate and these factors, also research influence of these factors on discount rate and business value.

Keywords: *business valuation, risk classification, risk valuation.*

Introduction

Risk valuation is one of the most important and most sophisticated stages within business valuation by the method of discounted cash flow. It is affirmed by the discussions of different authors (Abel, 1983; Chen, Roll, Ross, 1986; Ferson, Harvey, 1991; Fama, French, 1992; Jegadeesh, Titman, 1993; Smith, Nau, 1995; Kaplan, Peterson, 1998; Fama, 1998; Jacoby, Fowler, Gottesman, 2000; Kothari, 2001; Hodrick, Zhang, 2001; Graham, Harvey, 2001; Haushalter, Heron, Lie, 2002; Pratt, 2002) on this subject telling about sophistication and complication of reflecting risk factor in valuating both business and investment projects. Risk and expected return of funds invested into business are considered as two inherent categories in business valuation. Prognosis of business generated cash flow and cost of capital depend on risk that certain business incurs in the market.

Despite all consideration on problems of risk analysis and valuation in scientific literature presented different approaches of foreign authors to risk classification and determination of its influence on business value allow to maintain that the problem of risk reflection in business valuation methodology is complicated and not completely researched. Besides, foreign scientists working with the problems of business valuation (Randy, 1994; Fama, French, 1997; Cornell, 1999; Pratt, 2002; Brennan, Xia, 2006) admit the complication and sophistication of risk reflection in business valuation methodology.

The problem of risk reflection in business valuation methodology in the works of Lithuanian authors is researched very fragmentary. Some aspects of risk valuation are discussed in Rutkauskas (2001, 2002), Eiva (2000) and works of other authors. Although the impor-

tance of risk valuation is amplified in the national standards of property and business valuation, methodical instructions for risk reflection in calculations of business value that Lithuanian property valuators could apply practically estimating factors that determine risk and estimating this influence for business value are missed.

All this denotes that the problem of risk reflection in business valuation methodology is relevant in both theoretical and practical approaches and requires a detailed analysis.

The **problem** researched in this article is reflected by question: how risk should be estimated in business valuation methodology?

The **purpose** of the article is to report the logical proceeding in the calculations of discount rate of valuated business risk reflection.

The **novelty** of the article is reflected in both developed classification of risks and factors determining risk and scheme of factorial analysis of discount rate in the context of business valuation.

The **object** of research is risk factor in the context of business valuation.

The **methods** of research are systematic and comparative analysis of scientific literature, the method of factorial analysis, logical analysis of practice in business valuation, the method of expert valuation.

Risk Description and Classification within the Context of Business Valuation

Scientific literature most often defines risk as manifestation probability of certain undesirable event. Although risk should be treated as probability of both good and bad results generally it is understood as negative thing. Taking into consideration this circumstance Rutkauskas (2002) defines risk as synonym of uncertainty as this term is not necessarily related to negative results. Looking at valuated business as a certain investment project variation of return from the injected investment reflects the risk. The project with less risk guarantees higher return of injected investment and, on the contrary, if project was related to higher risk than probability of less then expected return is considerably higher. Risk and expected return are understood as very close financial categories in business valuation methodology. According to Miller (2001), value of a company varies directly when level of profit and expected growth of cash flow changes, and changes are conversely compared with changes of risk. According to Randy (1994), predicted cash flow of certain property is discounted considering required property rate of return which depends on riskness of the property. This risk could be reasonably related to probability of negative results in business valuation. According to the opinion of the authors of this article risk in the context of business valuation could be described as probability that business would not generate predicted cash flow. It would determine decrease of business value.

Although the problem of risk valuation is widely discussed in scientific literature still there is no one opinion about kinds of risk. Fairly wide spectrum of kinds of risk is found in scientific literature. Authors present different risk classifications which are generally based on certain features. Grabovii (2000) presents one of possible variants for risk classification when risk is classified pursuant to three hierarchic levels: macro (level of country risk), mezzo (industry risk) and micro (risk of company's activity). These risks are divided into smaller elements and generally are named according to factors determining risks – risk factors. Grabovii (2000) conditionally divides all factors having influence on risk appearance into two groups: objective (controlled) and subjective (uncontrolled). According to Romanov, Butuchanov (2001), these factors are processes or expressions determining appearance of risk of some kind and character of the risk. These factors have influence on certain risk as well as complex effect on certain groups of risks. Variety of factors determining risk is quite big so the classification of factors is much more complicated than the classification of risk. Despite various risk classifications presented in scientific literature the authors of this article think that it is reasonable to classify risk into systematic and unsystematic in business valuation methodology. This classification is based on the nature of factors determining risk. Factors of external environment cause external or systematic risk and factors of internal environment cause internal (unsystematic) risk. Systematic risk does not depend on company's activity and is characteristic for all participants of financial activity and also for all kinds of financial operations. It appears during changes of economic cycle, conjuncture of financial market and during many other events that company is not able to control performing its activities. These kinds of risk related to activity of certain company are assigned to unsystematic risk. Classification of risks and factors determining risk in the context of business valuation is presented in the table below.

The main factors determining systematic risk are classified into two groups – factors of macro environment and factors of industry environment.

According to variety of factors of macro environment presented in scientific literature, these factors in the context of business valuation could be classified into the main groups: economic, political-legal and technological. Analysis of scientific literature allows to state that the main factors of macro environment determining appearance of systematic risk and influencing progress of business valuation process and validity of its results are these: rate of country's economic growth, changes of interest rate, changes of currency rate, level of political stability in the country, tax policy, level of inflation, legal regulation.

As conditions of company's functionality in industry might have big influence on business value, valuators should pay special attention to investigation of competition conditions in industry, realization markets, and factors influencing potential amounts of producible output.

Analysis of scientific literature showed that the main factors of industry environment determining systematic risk are these: factors of competitors, factors of suppliers, factors of consumers.

Classification of Risks and Factors Determining Risk in Context of Business Valuation

Kind of risk	Factors determining risk		
	1st level	2nd level	3rd level
Systematic risk	Factors of macro environment	Economic factors	Rate of country's economic growth
			Interest rate
			Currency rate
			Tax policy
			Level of inflation
		Political-legal factors	External political situation
			Level of political stability in the country
			Legal regulation
		Technological factors	Scientific-technological progress
			Investments in Research & Development
	Factors of industry environment	Competitors' impact factors	Changes of competition level
			Appearance of alternative products (competitors)
		Consumers' impact factors	Duration of relations with consumers
			Volatility of demand
			Company's income per one consumer
		Suppliers' impact factors	Raw materials and transportation's price increase
			Increase of dependence on suppliers
			Inopportune delivery of collecting items
			Quality volatility of materials and raw produce
Unsystematic risk	Factors of internal environment	Quantitative factors	Financial stability
			Profitability
			Structure of finances
			Turnover
			Size of a company
		Qualitative factors	Competence of administrative personnel
			Production diversification
			Realization market diversification
			Consumers' diversification
			Vertical integration

Factor of competition level is relevant to all companies. It requires for expeditious response to changes in the market and also it increases uncertainty of activity and decreases profit margin. The main competitors' factors determining risk are: changes of competition level, appearance of alternative products (competitors). Competition level and weaknesses and strengths of the company comparing to competitors have significant influence on its financial state and risk. Besides, quite strong relation between market price of company's shares and competition exists because the company which has higher market price has possibility to provide its services or products cheaper and may gain competitive advantage. Comparison of valuated company's data with analogous indicators of other industry companies is significant stage of investigation which allows determining rating of valuated company and present reliable prognoses of profitability and required size of input. Hawkins (2002) alleged that the analysis of consumers' factor is important because reliability, variability and continuity of relations with consumers have influence on risk related to company's

capability to generate income. The main factors of consumers determining appearance of systematic risk are these: duration of relations with consumers, volatility of demand, and company's income per one consumer. Duration of relations with consumers is one of indicators of income stability. Companies that have long-lasting and strong relations with consumers are less risky. Another important factor determining risk is part of company's income falling on one consumer, because the loss of consumers whom fall a big part of company's income could be a reason of its failure. Besides, this factor is exceptionally relevant to majority of private limited companies often doing business with several clients. Special attention is required on relations with suppliers. Their influence is reflected by juristic definiteness of agreements and reliability of suppliers. Risk resultant of suppliers' actions is determined by these factors: raw materials and transportation's price increase, increase of dependence on suppliers, inopportune delivery of collecting items, quality volatility of materials, raw produce etc.

Definition of the factors determining unsystematic

risk is based on the analysis of company's internal information. As there is no one opinion in scientific literature presenting factors responsible for internal (unsystematic) risk, according to opinion of the authors of this article factors of internal environment in context of business valuation might be qualitative and quantitative.

Most often mentioned quantitative factors determining unsystematic risk are these: financial stability, profitability, structure of finances, turnover and size of a company. The main criteria of company's financial stability determining risk of insufficient financial stability are rates of liquidity evaluating company's ability to repay obligations. Decreasing rates of liquidity tell about risk of insufficient financial stability. Factor of financial structure determines risk of increased part of liabilities within total capital. The sign of such risk is bigger than usual for industry part of debt in total capital. One of criteria of capital structure is debt ratio which is expressed as ratio between debt and equity and shows what part of debt is in the equity. Criteria of profitability evaluating company's capacity to generate profit are these comparative factors: equity's profitability, asset's profitability, sale's profitability. Decreasing (or even negative) factors of profitability tell about decreasing capacity to transfer every litas earned with income or invested to assets or capital to net profits. If the reason for fall of these factors is decrease of net profits it shows too big input that company is not able to cover. Commonly mentioned in literature factors of turnover are: turnover of equity, inventory turnover, turnover of outstandings, and turnover of liabilities. First two factors allow evaluating the efficiency of company's capital and inventory appliance. Two other factors evaluate efficiency of collecting debts from customers, also evaluates if company is able to repay its debts efficiently. Decreasing value of turnover of outstandings tells about company's problems in paying short-term liabilities.

Beside quantitative factors there are plenty qualitative internal company's factors determining unsystematic risk. Such qualitative factors are mentioned in many analysed sources: competence of administrative personnel, production diversification, and diversification of realization market, consumers' diversification and vertical integration. Competence of administrative personnel is one of the factors determining unsystematic risk which is most often mentioned by authors analysing problems of business valuation. This factor is especially relevant to majority of private limited companies whose qualitative characteristic is based on principles of personnel management. Companies often have very limited manufacturing lines, i.e. production is little diversified. Factor of production diversification determines risk of insufficient production diversification. This risk means that in case of unfavourable change of main production's conjuncture company will not be able to move to manufacture of other production fast and with little input. Namely production diversification is believed to be one of essential methods for decreasing unsystematic risk. Absence of vertical integration is also one of qualitative factors determining unsystematic risk. Some companies face a big problem if their customers decided to produce goods themselves instead of purchasing. Possible risk of loosing

some of income because of this or other reason has obvious relation with business value. If company sales large part of production in one region, country or market segment it is dependable on consumers' solvency, economic situation in this region or country and intensification of competence. It allows stating that insufficient realization markets' and consumers' diversification is one of factors determining unsystematic risk.

After discussing peculiarities of risk classification in the context of business valuation, it is reasonable to investigate the problem of risk reflection in calculations of business value.

Risk Reflection in the Calculations of Discount Rate

Analysis of scientific literature shows that there is no one approach to risk reflection in the calculations of business value. Authors investigating problems of business valuation mention two alternative methods in risk's reflection in business valuation methodology. The first one is related to risk's reflection in the calculations of cash flow. The other provides risk valuation in the calculations of discount rate. Upholders of the first method relate risk valuation to cash flow correction. According to James, Koller (2000), this allows to better understand the process of value creation in the company. These authors think that method of risk reflection in cash flow is more suitable because discount rate evaluates only undiversified risk. Therefore diversified risk should reflect in cash flow. However, accomplished surveys (Keck, Levengood, Longfield, 1998) show that in practice of business valuation risk is usually evaluated adjusting discount rate. It is affirmed by the statement of Yeo, Qiu (2003) that cash flow is discounted by company's cost of capital or rate of return reflecting risk. Pratt (1989) says that often both methods of risk reflection are purposively or instinctively used in practice of business valuation. It might determine doubling of risk. According to the opinion of the authors of this article risk in business valuation methodology should be evaluated by discount rate on purpose to avoid problem of risk doubling. Risk reflects in weighted average cost of capital used in discounting free cash flow because risk influences value of discount rate of valuated business. According to Pratt (2002), definitions "discount rate", "cost of capital" and "required rate of return" mean the same and reflect both time factor and risk in the calculations. The same author mentions that estimation of risk influence on cost of capital (discount rate) is one of very important and complicated financial domains in company.

We are going to present logical proceedings of risk reflection in the calculations of discount rate of valuated business. Scheme of factorial analysis of discount rate is presented in figure using "family tree" diagram.

Different level elements of discount rate having influence on discount rate reflect in the figure making on the basis of decomposition of discount rate.

We now are going to make a comment on elements presented in figure. Taking into account that most often business is financed using debt and equity we make assumption that discount rate (DN) depends on both cost of

debt and cost of equity forming weighted average cost of capital (SVKK). It is showed in this formula:

$$SVKK = SKK + NKK, \tag{1}$$

where:
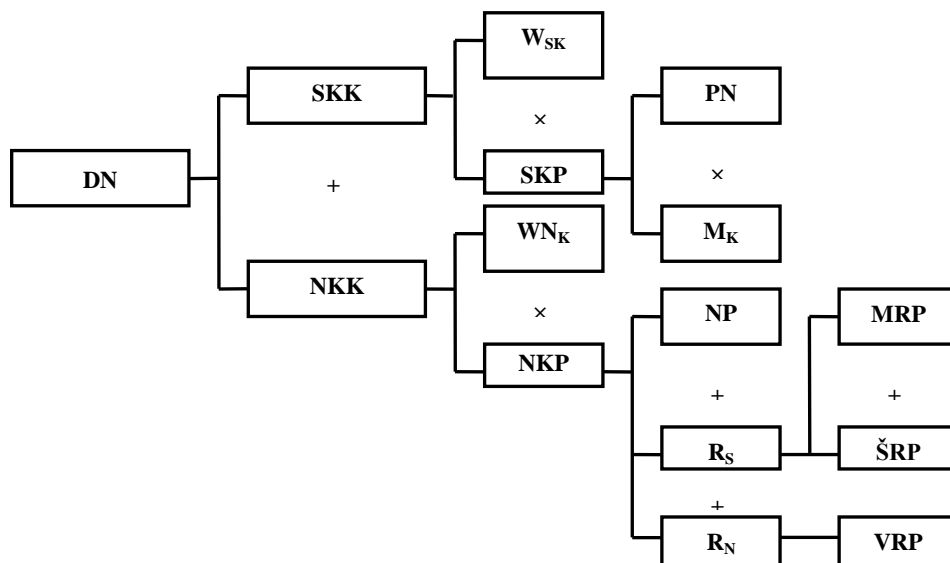
SKK – Cost of debt (%)
NKK – Cost of equity (%)

Figure. Scheme of Factorial Analysis of Discount Rate

As part of every source of company's financing in general capital structure has undoubted influence on value of discount rate, we accomplish cost decomposition of every financing source. Cost of debt (SKK) is estimated using this formula:

$$SKK = W_{SK} * SKP, \tag{2}$$

where:

W_{SK} – Weight of debt in capital structure
SKP – Profit (interest) rate of debt (%)

Cost of equity (NKK) is expressed in this formula:

$$NKK = W_{NK} * NKP, \tag{3}$$

where:

W_{NK} – Weight of equity in capital structure
NKP – Profit rate of equity (%)

Profit (interest) rate of debt (SKP) is understood as weighted average loan interest rate. Interests paid for loan in opposition to received dividends are tax-free. Price of a loan after paying taxes is important. Debt's rate of return is expressed in this formula:

$$SKP = PN(1 - M), \tag{4}$$

where:

PN – Price of a loan (%)
M – Profit tax

Different models called risk-return models in scientific literature might be used to calculate cost of equity (NKK) as one of the components of weighted average cost of capital. Selection and practical appliance of these models is widely discussed in scientific literature. On one hand variety of risk-return models gives freedom of choice. But on the other hand it might cause different results as appliance of some models is based on objective market information while other models are more subjective. According to narrowness of applying risk-return models based on market information in the practice of business valuation in Lithuania, the authors of this article consider appropriate to calculate cost of equity for majority companies in Lithuania using build-up model based on evaluation of factors determining risk. Pursuant to this model equity rate of return is expressed as sum of risk-free rate of securities (NP) and premium for both systematic and unsystematic risk:

$$NKP = NP + R_S + R_N, \tag{5}$$

where:

NP – Risk-free rate (%)
R_S – Premium for systematic risk (%)
R_N – Premium for unsystematic risk (%)

The authors of this article consider appropriate to separate factors of macro environment, industry environment and internal environment determining appearance of respectively systematic and unsystematic risk as there is no one opinion about risk determining factors, their size and number in scientific literature. Hereby a need to define factors determining both systematic and unsystematic risk and calculate size of premium for risk comes up while estimating discount rate. It requires that valuator had deep understanding about working of company. Especially that estimation of premium for risk factors depends on certain environment of country, industry and company.

There are a few possible variants of formula decomposition for calculating equity rate of return. If information of securities market is sufficient then equity rate of

return might be calculated using this formula:

$$NKP_1 = NP + RRP + \check{S}RP + VRP ,\qquad(6)$$

where:

RRP – Premium for market risk (%)
ŠRP – Premium for industry risk (%.)
VRP – Premium for internal risk (%.)

Premium for market risk and industry risk in this formula evaluates both external (macro environmental) risk that every company in the market meets industry risk which influences companies of certain industry. Premium for internal (unsystematic) risk reflects risk related to certain company. This premium also evaluates size premium which is quite significant estimating discount rate of small companies (usually private limited companies). Such calculation of equity rate of return allows estimating discount rate more reasonably for the companies whose investments are not quoted in the securities market because premiums for both market risk and industry risk would be determined on the basis of objective market information. Premium for internal risk might be determined more objectively considering both qualitative and quantitative factors that cause internal risk. We are going to make more comments on elements presented in formula (6).

Collection and analysis of external information which causes appearance of external risk is exceptionally important process because validity of the results of business valuation report depends on quality of this process. Also it is expensive and labour-intensive process. Therefore method of expert valuation which has fair level of subjectivity is used to evaluate external risk in practice. Different conclusions about company's value are obtained namely because of different evaluation of external risk. As this risk is characteristic to all companies in the market, premium for systematic risk should reflect in the premium for market risk showing riskness of market comparing with risk-free rate if cost of equity were estimated using build-up model. This premium evaluates risk that investor incurs investing to securities of various companies (shares) instead of government securities considered risk-free investment. Factors of industry become the indicator of estimated premium for industry risk in build-up model because they determine risk of industry. Of course it is simpler to speak about factors determining industry risk than solving the problem of premium for risk determined by these factors. In order to validate more estimation of premium for industry risk, this risk might be determined in accordance with methodology used by Ibbotson Association and based on calculations of industry index. This would allow evaluating riskness of analysed industry comparing to market risk. Such estimation of premium for industry risk would be based on market information. It would evaluate if investigated industry is more or less risky than market. Premium for internal risk shown in formula (6) is estimated while evaluating factors which determine unsystematic risk. Although different factors that cause unsystematic risk are provided in literature investigating problems of business valuation, criteria that could be used to estimate the size of premium

for one or another factor determining unsystematic risk are still missing. According to the opinion of the authors of this article these criteria might be factors of valuation of company's financial state which are calculated on basis of financial statement documents (balance sheet, income statement). Business valuation results of financial state analysis are one of the most important criteria while evaluating validity of company's made business plan. These results are important to validate size of discount rate estimated by build-up model. According to Hawkins (1999) importance of financial analysis in business valuation is determined by the fact that it helps valuator predicting company's income and estimating risk which is evaluated by discount rate. The author states that degradation of company's financial state might decrease the attraction of its shares. Grabovii (2000) relates importance of results of financial analysis with the fact that it helps to realize realistic condition and risk of a company. According to the author, results of this analysis directly influence estimation of discount rate. According to the opinion of the authors of this article factors of unsystematic risk presented in the scientific literature might be relatively divided to two groups in the calculations of discount rate: quantitative and qualitative. Some of them are expressed as quantitative criteria (relative financial indicators) that might be compared with average industry values to estimate size of premium for factors of unsystematic risk. The others are expressed as qualitative criteria. Estimation of quantitative factors of unsystematic risk and premium for risk determined by these factors would be based on results of analysis of financial state. It is possible to refer to the results of expert valuation while determining premium for qualitative factors. Of course, it is not enough only to calculate financial ratios. Their comparison is necessary in order to adjudicate the results of calculations. A few variants for comparison are possible: a) comparison with standard; b) comparison with industry average; c) comparison with analogous company-competitor; d) comparison with last period. Authors of this article consider appropriate comparison with average indexes of industry. Such comparison would allow validating size of premium for risk. Opinion of Valdaicev (2001) should be taken into consideration. He thinks that average industry ratios (that are normal for certain industry) should be estimated on the basis of declared documents of financial statement of only financially strong and attractive for investment companies. Only ratios of such companies might be acknowledged normal for certain industry. Besides, financial attraction and stability of these companies must be determined by stock market but not experts. It would be expressed by market price stability of their shares or even growth (in stable price). According to the mentioned-above author, even if prices are falling in all stock market, shares of such companies should drop in less degree. Although estimation of premium for quantitative factors of unsystematic risk, based on comparison of relative financial ratios of valuated company with average values in industry, is quite attractive, methodology how to accomplish such comparison and estimate size of premium for factors of risk is still missing in scientific literature. As preparation of such methodology requires deeper research, it is going to be an

object for further investigation.

Estimation of qualitative factors and calculation of premium for risk of these factors should be based on expert evaluation.

If information of securities market is not enough equity's rate of return might be calculated using this formula:

$$NKP_2 = NP + MRP + \check{S}RP + VRP ,\qquad (7)$$

where:

MRP – Premium for risk of macro environment factors (%)

ŠRP – Premium for risk of industry environment factors (%)

VRP – Premium for risk of internal environment factors (%)

Using this formula estimation of premium for risk of factors of macro environment, industry environment and internal environment is based on valuations of experts. For this purpose, according to specification of a company, factors of internal environment and factors of external environment (macro environment and industry environment) are separated. Experts of valuated company should accomplish valuation of factors. While performing expert valuation of factors determining risk the most important factors of external and internal environment having influence on company's business should be estimated at the beginning. Experts should evaluate influence of factors on company's activity for predicted period and determine weight of every of these factors. Possible values for factors evaluation: 1 – very positive; 2 – positive; 3 – negative; 4 – very negative. Valuation of factor influence in 1 point means little probability for changes of this factor. Valuation 4 means that probability for changes of this factor is big. Weight for every factor is determined according to values of importance chosen by experts. Possible values of importance for such factors: 4 – very important; 3 – important; 2 – insignificant; 1 – very insignificant. Such evaluations of experts are useful not only to determine the size of discount rate but also to valuate validity of prognosis made by a company. The authors of this article consider method of reflecting factors determining risk in calculations of discount rate appropriate to evaluate a lot of companies in Lithuania, especially companies whose investments are not quoted in the securities market and there is no possibility to use models based on market information in the calculations.

Conclusions

1. One of the most complicated stages while doing business valuation by discounted cash flow method is risk evaluation. Discussions between scientists and practicians tell about this. The complexity in risk's reflection in business valuation methodology is determined by attitudes to the risk and variety of factors that cause it and absence of methodology of adaptive risk reflection in calculations of business value.

2. Although problems of risk analysis and valuation are widely pending in scientific literature, there is no one attitude to risk description and classification in the context of business valuation. Pursuant to risk descriptions given in scientific literature, risk in business valuation might be described as probability that business cannot secure predicted free cash flow. It will have negative influence on business value.

3. Because of variety of approaches to risk classification in scientific literature, risk is considered to be classified to systematic (macro environment, industry environment) and unsystematic (internal environment) risk. Such classification is related to the nature of factors determining risk. Factors of external environment determine systematic risk while factors of internal environment determine unsystematic risk.

4. As there is no one attitude to risk reflection in business valuation methodology in scientific literature, the authors of this article suggest to evaluate risk in the calculations of discount rate. Higher risk determines larger discount rate and smaller risk determines smaller discount rate.

5. According to narrowness of appliance of risk-return models based on securities information in practice of business valuation, it is suggested to calculate cost of equity-one of elements of discount rate – summing up securities risk-free rate with estimated by expert premium for risk of factors of macro environment, industry environment and company's internal environment.

6. With reference to scheme of factorial analysis of discount rate made on principle of decomposition it is possible not only to identify the factors determining risk, but also, explore influence of those factors to the discount rate and business value using economical-mathematical analysis methods.

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Rizikos atspindėjimas verslo vertinimo metodologijoje

Santrauka

Straipsnyje analizuojamas tiek teoriniu, tiek praktiniu požiūriais aktualus klausimas – rizikos atspindėjimas verslo vertinimo metodologijoje. Šio klausimo aktualumą rodo mokslininkų, nagrinėjančių verslo vertinimo klausimus bei praktikų – verslo vertintojų diskusijos. Nors mokslinėje literatūroje rizikos analizės, vertinimo klausimams skiriama nemažai dėmesio, nėra vieno požiūrio į rizikos apibūdinimą ir klasifikavimą verslo vertinimo kontekste. Nepaisant to, kad Nacionaliniuose turto ir verslo vertinimo standartuose pabrėžiama rizikos vertinimo svarba, pasigendama rizikos atspindėjimo verslo vertės apskaičiavimuose metodinių nurodymų, kuriuos Lietuvos turto vertintojai galėtų taikyti praktikoje, nustatydami riziką lemiančius veiksnius bei vertindami šią įtaką verslo vertei.

Straipsnyje nagrinėjamą mokslinę problemą išryškina klausimas: kaip vertinti riziką verslo vertinimo metodologijoje?

Siekiant išspręsti iškeltą problemą, suformuluotas tikslas – išnagrinėjus teorinius ir praktinius rizikos vertinimo klausimus, pateikti rizikos atspindėjimo vertinamo verslo diskonto normos apskaičiavimuose loginę eigą.

Straipsnio naujumą rodo sudaryta rizikos ir riziką sąlygojančių veiksnių klasifikacija verslo vertinimo kontekste bei diskonto normos faktorinės analizės verslo vertinimo kontekste schema.

Tyrimo **objektas** – rizikos veiksnys verslo vertinimo kontekste.

Tyrimo **metodai** – sisteminė ir lyginamoji mokslinės literatūros analizė, faktorinė analizė, loginė verslo vertinimo praktikos analizė, ekspertinio vertinimo metodas.

Verslo vertinime rizika ir įdėtų lėšų į verslą laukiama grąža suprantamos kaip dvi neatsiejamos kategorijos. Verslo generuojamų pinigų srautų prognozė ir kapitalo kaštai priklauso nuo rizikos, kurią patiria konkretus verslas rinkoje.

Kadangi mokslinėje literatūroje nėra vieno požiūrio į rizikos apibrėžimą, verslo vertinimo kontekste rizika gali būti apibūdinta kaip tikimybė, kad verslas neužtikrins prognozuojamų laisvųjų pinigų srautų. Tai turės neigiamos įtakos verslo vertei.

Įmonių finansų klausimus nagrinėjančių mokslininkų darbuose pateikiamos rizikos klasifikacijos, apimančios įvairias rizikos rūšis. Tokia rūšių įvairovė sietina su veiksnių, sąlygojančių rizikos atsiradimą, gausa. Riziką lemiančių veiksnių įvairovė gana didelė, ir jų klasifikavimas kur kas sudėtingesnis nei rizikos klasifikavimas. Atsižvelgiant į daugumos autorių, analizuojančių verslo vertinimo klausimus, pateikiamas rizikos klasifikacijas, straipsnio autorių nuomone, verslo vertinimo kontekste riziką tikslinga klasifikuoti į sisteminę riziką (išorinę) ir nesisteminę riziką (vidinę). Toks klasifikavimas remiasi riziką sąlygojančių veiksnių prigimtimi. Išorinės aplinkos veiksniai lemia išorinę, arba sisteminę, riziką, o vidinės aplinkos veiksniai – vidinę (nesisteminę) riziką. Sisteminė rizika nepriklauso nuo įmonės veiklos ir būdinga visiems finansinės veiklos dalyviams bei visoms finansinių operacijų rūšims. Ji atsiranda keičiantis ekonominio ciklo stadijoms, finansinės rinkos konjunktūrai bei daugeliu kitų atvejų, kurių įmonė, vykdydama savo veiklą, negali paveikti. Nesisteminei rizikai priskiriamos rizikos rūšys, susijusios su konkrečios įmonės veikla. Sisteminės ir nesisteminės rizikos klasifikacija gali remtis šių rizikos rūšių dekompozicija į joms įtakos turinčius įvairių lygių veiksnius. Pagrindiniai sisteminę riziką sąlygojantys veiksniai – pirmojo lygio veiksniai – yra įmonės makroaplinkos veiksniai ir šakos aplinkos veiksniai. Tolesnė makroaplinkos veiksnių ir šakos aplinkos veiksnių dekompozicija, leidžia išskirti antrojo lygio veiksnius, sąlygojančius sisteminę riziką. Antrojo lygio sisteminę riziką sąlygojantys makroaplinkos veiksniai: ekonominiai veiksniai, politiniai ir teisiniai veiksniai, technologiniai veiksniai; šakos aplinkos veiksniai: konkurentų veiksniai, tiekėjų veiksniai, vartotojų veiksniai. Trečiojo lygio sisteminę riziką sąlygojantys makroaplinkos veiksniai: šalies ekonominio vystymosi tempai, palūkanų normos kitimas, valiutos kurso pasikeitimas, politinio stabilumo šalyje laipsnis, mokesčių politika, infliacijos lygis ir kiti veiksniai. Trečiojo lygio sisteminę riziką sąlygojantys šakos aplinkos veiksniai: pasikeitęs konkurencijos lygis, atsiradę alternatyvūs produktai (konkurentai), santykių su vartotojais trukmė, nestabili paklausa, vienam vartotojui tenkanti įmonės pajamų dalis, pabrangęs medžiagų, žaliavų, transportavimas, didesnė priklausomybė nuo tiekėjų, nelaiku pateikiami komplektuojamieji gaminiai, nestabili medžiagų, žaliavų kokybė ir kiti veiksniai. Kadangi mokslinėje literatūroje nėra vienos nuomonės pateikiant vidinę (nesisteminę) riziką lemiančius veiksnius, šio straipsnio autorių manymu, verslo vertinimo kontekste vidinės aplinkos veiksniai gali būti klasifikuojami į kiekybinius ir kokybinius veiksnius. Trečiojo lygio nesisteminę riziką sąlygojantys kiekybiniai veiksniai: finansinis stabilumas, pelningumas, finansų struktūra, apyvartumas, įmonės dydis. Kokybiniai veiksniai: valdymo personalo kvalifikacija, produkcijos diversifikacija, realizavimo rinkų diversifikacija, vartotojų diversifikacija, vertikali integracija. Priklausomai nuo poreikio, toliau sisteminę ir nesisteminę riziką lemiančius veiksnius galima skaidyti. Rizikos dekompozicijos principu sudaryta rizikos ir riziką sąlygojančių veiksnių klasifikacija ne tik leidžia nustatyti įvairių lygių veiksnius, bet parodo šių veiksnių ir sisteminės bei nesisteminės rizikos ryšius.

Mokslinės literatūros analizė rodo, kad nėra vieno požiūrio į rizikos atspindėjimą verslo vertinimo metodologijoje. Įvairių autorių, nagrinėjančių verslo vertinimo klausimus, darbuose minimi du alternatyvūs rizikos atspindėjimo verslo vertės skaičiavimuose būdai.

Pirmasis siejamas su rizikos atspindėjimu pinigų srautų apskaičiavimuose. Antrasis numato rizikos vertinimą diskonto normoje. Nors mokslinėje literatūroje pateikiama įvairių diskonto normos apibūdinimų, ją autoriai dažniausiai apibūdina kaip pelno normą, kuri naudojama laisviesiems pinigų srautams transformuoti į esamąją vertę. Diskonto norma yra įmonės finansavimo šaltinių kaina, kuri apskaičiavimuose rodo laiko veiksnį bei riziką. Atsižvelgiant į tai, verslo vertinimo kontekste, rizika turėtų atsispindėti diskonto normos apskaičiavimuose. Didesnė rizika sąlygos didesnę diskonto normą, mažesnė – mažesnę.

Kadangi mokslinėje literatūroje nėra vieno požiūrio į rizikos atspindėjimą diskonto normoje, straipsnyje rizikos vertinimas diskonto normos apskaičiavimuose remiasi diskonto normos dekompozicija į jai įtakos turinčius skirtingų lygių veiksnius. Pirmojo lygio diskonto normai įtakos turintys veiksniai yra skolinto kapitalo kaštai ir nuosavo kapitalo kaštai. Antrojo lygio diskonto normai įtakos turintys veiksniai: skolinto kapitalo pelno norma, nuosavo kapitalo pelno norma; trečiojo lygio – paskolų palūkanų norma, pelno mokestis, nerizikinga palūkanų norma (vyriausybės vertybinių popierių – obligacijų – palūkanų norma), rizikos priedai už makroaplinkos, šakos aplinkos, vidinės aplinkos veiksnius. Nustatant vieno iš diskonto normos elemento – nuosavo kapitalo pelno normos veiksnius, būtina įvertinti rizikos-pelno modelių taikymo ribotumą Lietuvos verslo vertinimo praktikoje. Atsižvelgiant į šį ribotumą, siūloma nuosavo kapitalo kaštus apskaičiuoti, prie nerizikingų vertybinių popierių palūkanų normos pridedant ekspertiškai nustatytus rizikos priedus už makroaplinkos veiksnius, šakos aplinkos veiksnius ir įmonės vidinės aplinkos veiksnius. Riziką sąlygojančių veiksnių ekspertinį vertinimą turėtų atlikti vertinamos įmonės ekspertai. Atliekant šį vertinimą, visų pirma turėtų būti nustatomi svarbiausi įmonės veiklai įtakos turintys išoriniai ir vidinės aplinkos veiksniai. Ekspertai turėtų vertinti veiksnių įtaką įmonės veiklai prognozuojamu laikotarpiu bei nustatyti kiekvieno jų reikšmingumą. Galimos tokios veiksnių vertinimo reikšmės: 1 – labai teigiamas; 2 – teigiamas; 3 – neigiamas; 4 – labai neigiamas. Veiksnio įtakos įvertinimas 1 balu reiškia mažą rizikos dėl šio veiksnio pasikeitimo tikimybę. Įvertinimas 4 balais rodo, kad rizika dėl šio veiksnio kitimo yra didelė. Kiekvieno veiksnio reikšmingumas nustatomas atsižvelgiant į ekspertų pasirinktas veiksnių reikšmingumo reikšmes. Galimi šie veiksnių reikšmingumo vertinimai: 4 – labai reikšmingas; 3 – reikšmingas; 2 – nereikšmingas; 1 – labai nereikšmingas. Tokie ekspertų vertinimai naudingi ne tik nustatant diskonto normos dydį, bet ir vertinant įmonės sudarytų prognozių pagrįstumą.

Šio darbo autoriai mano, kad riziką lemiančių veiksnių atspindėjimo diskonto normos apskaičiavimuose būdą tikslingiausia taikyti vertinant daugelį Lietuvos įmonių. Ypač tas įmones, kurių vertybiniai popieriai nėra kotiruojami vertybinių popierių biržoje ir nėra galimybės apskaičiavimuose taikyti rinkos informacija besiremiančių modelių.

Remiantis dekompozicijos principu sudaryta diskonto normos faktorinės analizės schema galima ne tik nustatyti riziką lemiančius veiksnius, bet, panaudojus ekonominės-matematinės analizės metodus, tirti šių veiksnių įtaką diskonto normai ir verslo vertei.