

**KAUNAS UNIVERSITY OF TECHNOLOGY
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**A BUSINESS VALUATION MODEL BASED ON
THE ANALYSIS OF BUSINESS VALUE DRIVERS**

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INTRODUCTION

Topicality of the subject. The key feature of modern Lithuanian economic development stage is the impact of two processes. On the one hand, it is the economic transformation from planned to market economy. On the other hand, it is the integration into international economic system, and the economic and social-cultural globalisation. In the course of these processes there occurs a need to take a particularly attentive look at every variable of business environment by anticipating the patterns of their variation and seeking a quantitative evaluation of their effect on business.

In scientific literature value is referred to as the most complete and exact indicator of business condition that reflects changes in internal and external environment of an enterprise. Business valuation is usually related to the establishment of value of an enterprise that is planning to continue its business, which demands to employ forecasted data in calculations. In a dynamic environment where risk and uncertainty are inevitable attributes of the process of the enterprise's business forecast, due to the change of various drivers, business value may fluctuate in a rather wide range. On the one part, risk and uncertainty prompt to think in terms of future scenarios and to anticipate the full range of value dimensions. On the other part, the fluctuation of business value within a wide range predetermines the problematic aspect of rendering the final conclusion on business value. Since business value changes with the change of influencing drivers, the analysis of drivers that have impact on business value becomes urgent. Based on such an analysis it would be possible to calculate the most probable dimension of business value.

Scientific problem. In scientific literature focusing on the issues of business valuation the aspect of the analysis of business value drivers is discussed very fragmentally. Though researchers emphasise the importance of determining the impact of value drivers that influence the dimension of business value, there is no unified approach to the classification and investigation of these value drivers. The linear classifications of influencing business value drivers presented in the works of authors who explore the issues of business valuation are inconsistent and insufficient for the evaluation of business value drivers. Given a linear presentation of drivers is it difficult to see the inter-relations of the influencing business value drivers and business value or to measure quantitatively the impact of change of business value drivers on business value. The analysis of scientific literature shows that references to the application of methods in establishing the impact of drivers on business value are very limited. It is not enough to lean upon the results of the sensitivity analysis, which is presented in scientific literature as the most widely used in determining the impact of drivers on business value, because it only enables to evaluate the impact of one driver change (increase/decrease) on business value, leaving aside possible change of other drivers. Since in a factual situation the

change is usually present in more than one driver, there occurs a need to apply those methods of factorial analysis which would enable a complex evaluation of the impact of change of many drivers on the change of business value. Though scientific literature emphasises the need of evaluating the drivers the change of which may influence the fluctuation of business value dimension, researchers fail to provide a mechanism for incorporating the analysis of business drivers into business valuation. There is a lack of an adaptive model, which would incorporate the classification of business value drivers and the evaluation of the impact on business value into the proves of business valuation and which would enable to determine the final (most probable) business value dimension.

Level of research problem investigation. Issues related to the establishment of the definition of value as an economic category and its measurement have been analysed starting from the 17th century in V.Petti's works, and from 18th century in A.Smith's and D.Ricardo's works. Later investigations of the said category are connected with such names as K.Marks, K.Menger, F.Vizer, E. von Bohm-Bawerk, W.S. Jevons, L.Walras and other economists-researchers representing various economic schools who supported different and, very often, contradictory views to value and its measurement. Only in the 19th century when A.Marshall dissociated from the search of a single source of value and combined the theory of marginal efficiency, the theory of demand and supply and the theory of production costs, the economic theory of value started to simultaneously evaluate the impact of efficiency, demand-supply and costs on value. It gave rise to three classical approaches of business valuation (market, income and costs).

The issues of business valuation, which became a separate branch of property valuation in 1928 only, most thoroughly are analysed in the works of Sh.P. Pratt (1989), A. Griaznova, M. Fedotova (1998), S. Valdaicev (2001), G. Veie, U. Dering (1997) G.M. Desmond, R.E. Kelli (1996) and others. As the result of the analysis of these works it was ascertained that the most expedient way to establish business value is by applying the method of discounted cash flows. The analysis of theoretical and practical aspects of this method highlighted problematic facets of its application determining the complexity of the definition of business value as the final result of business valuation.

Referring to the works of J.H. Schilt (1982, 1991), R.G. Ibbotson, G.P. Brinson (1985), E.F. Brigham, D.K. Shome, S.R. Vinson (1985), E.F. Fama, K.R. French (1992, 1993, 1995, 1996), R.M. Betts, S.J. Ely (1994), G. Hawkins (1999, 2002), B. Dangerfield, L.H. Merk, C.R. Narayanaswamy (1999), R.J. Hodrick, X. Zhang (2001), J.R. Graham, C.R. Harvey (2001), W.D. Miller (2001), K.T. Yeo, F. Qiu (2003) and others, an analysis of risk-return models used in discount rate calculations was carried out and proved that there is no common approach in establishing the costs of equity. It was found out that to a great extent the selection of a model is determined by the information base,

which in Lithuania like in many post-socialistic countries is insufficient. This problem is the most topical in evaluating business under Lithuanian conditions. The performed comparative analysis of the application of risk and profit models under conditions of a country with developed stock market and Lithuania highlighted key differences that demand to apply adaptive measures in establishing owner's capital costs of the majority of Lithuanian enterprises.

The analysis of works by J.J. Ruhl, S. Cowen (1990) J. Moskowitz (1988), A. Rappaport (1998), R. Mills, C. Print (1995), R. Mills, J. Robertson, T. Ward (1992), R.C. Scarlet (1997), A. Black, P. Wright, J. Davies (2001) revealed the importance of value drivers analysis in accepting decisions related to value maximisation as one of the most important goals in enterprise activity, and showed diversity of approaches to influencing value drivers and their classification. In addition, it pointed out the limitation of methodical references to the methods of establishing the impact of drivers on value. All the more as when analysing the issue of the analysis of value drivers the authors (Akalu, 2002; Schor, 2000; Copeland, Collier, Murin, 1999 and others) emphasise that the aspect of establishing the impact of value drivers on business value is complex, little investigated and demands more detailed research.

The performed analysis of research papers focusing on the issues of business valuation proved that the question of drivers that have impact on value is discussed very narrowly. Having analysed the works of Sh.P. Pratt (1989), A. Damodaran (1998), V. Grigorjev, M. Fedotova (1997), A. Griaznova, M. Fedotova (1998), V. Grigorjev, I. Ostrovkin (1998), P. Grabovii (1999), N. Abdulaev, N. Kolaiko (2000) and others it was noticed that there is no unambiguous approach to the classification of drivers (business value drivers) that have impact on business value. Commonly, linear classifications of business value drivers are introduced that cover very different drivers. Though authors (Damodaran, 1998, 2002; Pratt, 1998; Valdaicev, 2001; Scott, 2000) emphasise the importance of the analysis of influencing value drivers for business valuation because the variation of business value depends on the possible change of drivers, this aspect receives very little attention.

In Lithuania, theoretical and practical issues of business valuation are being solved in dissertations (Eiva, 2000; Stravinskas, 2000; Burkšaitienė, 2000; Ulys, 2004). The specificity and problems related to the theory of business valuation and its adaptation to Lithuanian conditions were analysed by D. Burkšaitienė (1998, 2001, 2003), P. Chmieliauskas (2001, 2002), B. Galinienė (1999, 2001, 2002), R. Legenzova (2001). The questions of business valuation under uncertain circumstances are discussed in the works of A. Rutkauskas (1999, 2001, 2002).

The issue of the establishment and investigation of value drivers in the works of Lithuanian authors is discussed very fragmentally. Specific aspects of value drivers were discussed by D. Ulys (2001, 2004), G. Jagelavičius (1998, 1999, 2001), D. Burkšaitienė (2000), Š. Leitonienė (2003). The aspects of evaluating the factors of macro environment and industry environment are

explored in the thesis of S. Eiva (2000) analysing the valuation of large companies.

After performing the analysis of scientific literature it is possible to state that research papers fail to present a business valuation model, which, on the base of the analysis of business value drivers that combines the classification value drivers and their impact on business value, would enable to provide the final (most probable) dimensions of business value.

The subject of research is business value: conception, establishment, determining factors.

The objective of research is to build a business valuation model based on the analysis of business value drivers, which would incorporate the classification of business value drivers and the evaluation (determination) of their impact on business value into the process of business valuation, and would enable to provide the final dimension of business value.

Research tasks:

1. By synthesising the definitions of value and those provided in the theories of valuation, to define value as an economic category in terms of business valuation.
2. Having performed the analysis of theoretical and methodological aspects of business valuation, to substantiate the suitability of business valuation approaches and methods for establishing the value of an enterprise planning to continue its business.
3. To reveal the peculiarities of adaptation of the theory of business valuation under conditions of economical transformation by disclosing key differences of applying this theory in countries with developed stock market and Lithuania, and by emphasising the main problems related to the determination of business value by the method of discounted cash flows.
4. To analyse methodological aspects of the analysis of influencing drivers of business value by disclosing dominating approaches to the definition of value drivers, by systematising classification of influencing value drivers presented in scientific literature on business valuation, and by discussing the methods of establishing the impact of drivers on business value.
5. To build a business valuation model based on the analysis of business value drivers enabling to determine the final dimension of business value.
6. To verify the suitability of the constructed model for the evaluation of a Lithuanian dairy enterprise.

Research methods:

1. In the present doctoral thesis the research and analysis of methodological aspects related to the determination of business value and the analysis of business value drivers employ the methods of systemic analysis of scientific literature, comparative analysis, logical analysis and documentary analysis (including business valuation reports, international and European valuation standards, annual reports of international organisations such as the European Commission, the International Monetary Fund, and Lithuanian legal deeds).
2. When building a business valuation model based on the analysis of business value drivers and carrying out its empirical investigation, the integral method of economical factorial analysis and the method of expert evaluation are used.

Sources used in the research work:

1. The analysis of value as an economical category, classical approaches of business valuation, peculiarities of approach application to conditions of economical transformation, and methodological aspects of analysis value drivers is based on the works of foreign and Lithuanian authors.
2. The empirical investigation of the model based on the analysis of business value drivers is grounded on the data of National Stock Exchange, the information of the analysed enterprise and the information of the Lithuanian Statistical Department.

Scientific newness and practical importance:

1. A definition of value in the aspect of business valuation is presented emphasising one of the key features of business value – its complexity that encompasses the ability of value to wholly reflect changes taking place both in internal and external environment of an enterprise.
2. When solving the issue of discount rate proof was given to the limitation of the application of risk and profit models given in scientific literature to the Lithuanian business valuation practice, which is caused by the insufficiency of information base. It was proposed to calculate the costs of owner's capital by adding to non-risky interest rate the expertly established risk premiums for the drivers of macro-, branch- and internal environment.
3. Having proved the limitation of linear classifications of influencing business value drivers, a classification of business value drivers was formed by grouping the drivers that have impact on business value into levels one to five. This classification is based on the decomposition of business value established by the method of discounted cash flows. Such a graded presentation of drivers enables to have an insight to the inter-relations of business value drivers and business value and to evaluate the impact of each driver change not only on the change of the business value but also on the change of a higher level driver.

4. For the establishment of the impact of business value drivers on business value an integral method of economic factorial analysis was adapted, which allowed to wholly evaluate the impact of different level drivers on business value.
5. Theoretical and empirical researches resulted in the creation of a business valuation model based on the analysis of business value drivers, which incorporates the classification of business value drivers and the establishment of their impact on value into the process of business valuation, and enables to provide the final result of business valuation – a dimension of business value.
6. Based on the constructed classification of business value drivers (from first to fifth level) and (the algorithm of analysis) the algorithm for establishing their impact on business value, it is possible to make classifications of lower level drivers (depending on the necessity) and to evaluate their impact on business value.
7. By applying the proposed mode of reflecting systematic and non-systematic risk in the discount rate based on an expertly estimation of risk, it is possible to calculate the impact of qualitative drivers of internal and external environment on the change of business value.
8. The application of the constructed computer-based model in practice provides an opportunity not only to establish the value of the object under valuation, but also to model the situation by making a quantitative estimation of the impact of changes in internal and external environment on business value.

Structure of the dissertation. The dissertation consists of an introduction, three chapters and conclusions. The work comprises 170 pages. It includes 29 figures, 49 tables and 6 appendices. The dissertation refers to 196 literary sources.

Approbation of research results. The research results are announced in 7 scientific publications including 2 Lithuanian publications enrolled in the list approved by the Lithuanian Department of Science and Education. The results of the thesis-related research have been introduced in 5 International conferences.

CONTENTS OF THE DISSERTATION

Part One. BUSINESS VALUE AND METHODOLOGICAL ISSUES OF ITS ESTABLISHMENT

This part focuses on the concept of value as an economical category in the aspect of business valuation as well as theoretical and methodological aspects of the establishment of business value. It also discusses the peculiarities of business valuation under conditions of economical transformation and explores the issues of classification and analysis of business value drivers.

Chapter 1.1 – Value as an economical category in aspect of business valuation analyses the issues of historical development of the economical category of value. The attitude of various authors towards value and its measurement is reviewed.

Having performed an analysis of economic literature, it was found out that value both in terms of its definition and establishment is a complex economical category. It is proved by the variety of approaches to value and its measurement expressed by representatives of different economic schools (Petti, Smith, Ricardo, Marks, Menger, Vizer, Von Bohm-Bawerk, Jevons, Walras, Marshall and others) what shows the importance of this category maintained through several centuries and how problematic its measurement is. The question about the essence of value is still taking central place in the searchers of researchers; the reply to it determines the perception of such important economical categories as price, costs, wage, profit and rent and of the whole economic system (Vodomerov, 1999). Many authors consider the establishment of value as one of the key problems in the science of economics.

The analysis of literature on business valuation revealed that the valuation theory, which dates back to the end of the 19 th century, has no unified approach to value, what causes the ambiguity of interpretations of the concept of value. Different definitions of value presented by authors who analyse the issues of business valuation testify the complexity of the definition of value as a synthesis of the concepts of value used in the value theory and the valuation theory.

Referring to definitions of value given in scientific literature, the author of the doctoral dissertation provides the following definition of value in the aspect of business valuation. Value is a complex business rate expressed in monetary measurement units, which is calculated according to a respective business valuation method. The proposed process-based definition of value in the aspect of business valuation takes into consideration that value wholly reflects internal situation of an enterprise and the changes taking place in its external environment. Moreover, regardless its subjective nature, business value is expressed in monetary units. Business value is also conditioned by the business valuation method used.

Chapter 1.2 – Theoretical and methodological aspects of business valuation discusses business valuation approaches and the establishment of business value by the method of discounted cash flows, and presents a comparative analysis of risk-return models.

Sub-chapter 1.2.1 – Classical business valuation approaches analyses business valuation approaches and methods and peculiarities of their application in business valuation.

When estimating the contribution of various economic schools to the formation of the value theory and the valuation theory, the primary attention was given to three economic theories that grounded three classical business valuation approaches (market, income and costs). These theories include the theory of property formation (cost theory); the theory of market exchange; and the theory of efficiency. Though the analysis of works of the authors analysing business valuation issues (Pratt, 1989; Griaznova, Fedotova 1998; Valdaicev, 2001; Veie, Dering, 1997; Desmond, Kelli, 1996) disclosed the variety of options for the classification of business valuation methods, it was discovered that the majority of the authors classify the methods with reference to the said three business valuation approaches. Moreover, the application of these three approaches is defined in the European and International valuation standards, which are recommended as the grounds for business valuation. Regardless the diversity of business valuation methods presented in literary sources, it is emphasised how important it is to make a correct choice in selecting a valuation approach and method, because the final result, i.e. business value, will depend on it. Having analysed the peculiarities related to the application of business valuation approaches, it was detected that the dominating approach of business valuation is the income approach based on causal relationship between future income of an enterprise and its value, and projecting the application of methods based on discount and capitalisation technologies. Referring to the works of authors (Pratt, 1989; Griaznova, Fedotova 1998; Terechin, 1998; Grigorjev, Ostrovkin, 1998; Abdulaev, Kolaiko, 2000; Valdaicev, 2001; Ripol-Saragosi, 2001 and others), an analysis of business valuation methods was carried out, which underlined their advantages and disadvantages and showed that for business valuation it is the most expedient to apply the method of discounted cash flows. Examination of the works by H.O. Nourse (1990), D. Chan (1997), V. Terechin (1998), T. Copeland, T. Koller, J. Murrin (1999) assisted in defining the expediency of the calculation technique of discounted cash flows used in establishing the value of an enterprise planning to continue its business as other methods are characteristic of lower accuracy, integrity, objectivity and functionality. According to Sh.P. Pratt (1989), the method of discounted cash flows theoretically is the most accurate and most widely used in practice. Discounted cash flows reflect a business situation and the impact of internal and external environment, while all factors in one or another way influencing the business are reflected in the dimensions of free cash flows and discount rates.

Sub-chapter 1.2.2 – Business valuation according to the method of discounted cash flows focuses on the method of discounted cash flows with reference to the works of authors (Pratt, 198; Copeland, Koller, Murrin, 1995; Damodaran, 2002; Valdaicev, 2001 and others), by discussing the specificity of defining four elements (cash flow, forecasted period, continuous value and discount rate) related to the application of the method. The performed analysis highlighted the variety of handling and defining the said elements and disclosed problematic aspects of the calculation of the said elements. It was established that business valuation by the method of discounted cash flows demands to employ in calculations the forecasted data of the enterprise. In a dynamic environment where risk and uncertainty are inevitable attributes of the process of the enterprise's activity forecast, business value may fluctuate in a rather wide range. On the one part, risk and uncertainty prompt to think in terms of future scenarios and to anticipate the entire range of value dimensions. On the other part, the fluctuation of business value within a wide range predetermines the problematic aspect of rendering the final conclusion on business value. Since business value changes with the change of influencing drivers, there occurs a need to perform an analysis of business value drivers.

Having analysed the works of Sh.P. Pratt (1989, 1998, 2000), R. Platner (1992), E.F. Fama, K.R. French, (1992), S. Randy (1994), P.D. Kaplan, J.D. Peterson (1998), R.J. Hodrick, X. Zhang (2001), J.R. Graham, C.R. Harvey (2001), S.P. Kothari (2001), representatives of the Ibbotson Association, K.T. Yeo, F. Qiu (2003), G. Kancerevyčius (2004), it was found out the most complicated stage of the method of discounted cash flows, which caused rather much problems in business valuation, is related to the establishment of discount rate. Having discovered that the calculation of cost of equity is the most problematic both in theoretical and practical terms, a comparative analysis of risk-return models used in establishing the costs of equity is provided in *sub-chapter 1.2.3 – Analysis of risk-return models in the aspect of business valuation*. The analysis of works by various authors (Chen, Roll, Ross, 1986; Pratt, 1989; Ferson, Harvey, 1991; Fama, French, 1992; Jegadeesh, Titman, 1993; Kaplan, Peterson, 1998; Turner, Morrell, 2003 and others) revealed the complexity of the issue of risk estimation and its relevance in estimating business by the method of discounted cash flows. It was established that the calculation of the costs of equity, as one of the key components of average capital costs, may employ various models, which in scientific literature are generally called the risk-return models. In scientific literature the selection and application of these models is being widely discussed and rather much criticised by the authors analysing practical aspects of their application. On the one hand, the variety of risk-return models provides freedom of choice to a valuator. On the other hand, it may cause different results because the application of certain models is based only on objective market information (the CAPM model), and others bear a higher degree of subjectivity (build-up model). By affirming that the majority of risk-return models are closely

interrelated, A. Damodaran (2002) emphasises that the question of choosing the most suitable risk-return model is the field of major discussions during the last two decades. By generalising the discussions taking place on academic level in connection with the choice of a model to establish cost of equity, it is possible to assume that it is determined by sufficiency of information base, data accessibility, the level of development of national stock market and the valuator's ability to adequately evaluate company-related risk factors. Since broad academic discussions related to the use of risk-return models are usually based on the examination of factual practical examples, the author of the doctoral dissertation is of the opinion that it is necessary to talk about the application of these models by example of a specific country, industry or company. It would enable not only to select the most suitable method for discount rate establishment under factual economic conditions, but also to make decisions about its possible corrections.

In the practice of business valuation in developed countries, namely the application of models for cost of equity determination that has been used several decades already, the dependence on the sufficiency of information base and the economic situation of the country in which the particular business is being evaluated conditioned the need to analyse the aspects of Lithuania's transitional period, which are discussed in **chapter 1.3 – Peculiarities of business valuation theory adaptation to conditions of economical transformation.**

The review of the works by L. Balcerowicz (1998), S. Fischer, A. Gelb (1991), E. Gaidar (1998), G. Kolodko (2000), Z. Lydeka (2001), A. Aslund (2001) and others revealed the variety of approaches to the transitional period from planned to market economy. Despite the consent of various authors on the elements of the transitional period, which include liberalisation, macroeconomic stabilisation and privatisation, there appear different attitudes towards the announcement of the end of the transitional period. When surveying of works by Lithuanian authors (Lydeka, 2001, Vilpišauskas, 1999, Vasiliauskas, 2002, Samonis, 2002, analysts of Vilniaus Bankas AB) and foreign authors (Gaidar, 1998, Kolodko, 2000, Aslund, 2001, analysts of International Monetary Fund) who focus on the specificity of transition from planned to market economy, a multiple approach to the definition of the current Lithuanian economical phase became evident. Notwithstanding the 2001 report of the European Commission concluding that market economy functions in Lithuania, it is possible to assume that Lithuanian social and economical situation is not adequate to the situation in the countries of market economy or other post-socialist countries. Moreover, Lithuanian situation is not identical to the one of other post-socialistic states. The long-run strategy of Lithuanian economy development until 2015 testifies a considerable retardation of Lithuania from EU countries according to the level of economical development. It is anticipated to overcome this retardation in 30 to 40 years. It is assumed

that within ten years Lithuania will entirely adjust to the European economical situation.

The undergoing processes of post-socialistic transformation predetermined the appearance of business valuation as a branch of property valuation the need for which began with the privatisation of state-owned property. Having reviewed the tendencies of economical transformation it is established that during a number of years Lithuanian economy acquired a set of features characteristic to the economy of developed countries; however, it is expedient to have in view that this period is specific, because when applying classical business valuation approaches, problems that are not urgent in business valuation practice of developed countries may be encountered.

Leaving aside problematic aspects of the application of other approaches, the discussion on the peculiarities of applying in Lithuania the income approach that projects the use of two business valuation methods (discounted cash flow and capitalisation) revealed essential problems related to cash flow forecasts and discount flow determination. Having performed a comparative analysis of the methods of cost of equity determination applied in foreign and Lithuanian markets, numerous differences were causing problems in the practice of applying these methods to Lithuanian business valuation. First of all, developed countries have companies, which render information on market risk premium, beta coefficients and company size premium. Based on this information it is possible to rather quickly calculate the costs of the company under valuation. Meanwhile in Lithuania there are no such information companies. Besides, the stock market is rather young here. Therefore, historical information is very limited. These differences are mainly determined by such factors as sufficiency of information base, data accessibility and development of national stock market.

Chapter 1.4 – Business value drivers, their analysis analyses the approaches that are dominating in scientific literature in regard to business value drivers, their classification and impact on business value.

The works of A. Rappaport (1986), T. Copeland, T. Koller, J. Murrin (1995), R.C. Scarlet (1997), M.M. Akalu (2002), J. Ruhl, S. Cowen (1990), R. Mills, C. Print (1995) and others prove that scientific literature is prevailed by the variety of approaches to value drivers and their classification. Some researchers refer to the concept of value-based management, which gained recognition only in 1980, and its originator's A. Rappaport list of value drivers by adding to it one or several drivers. Others in general provide no drivers by suggesting only to classify them into external and internal drivers. It proves that in scientific literature there is no unified opinion about establishing and classifying the drivers that have impact on value.

The survey of works analysing the issues of business valuation (Pratt, 1989; Damodaran, 1998; Grigorjev, Fedotova, 1997; Griaznova, Fedotova, 1998; Grigorjev, Ostrovkin, 1998; Grabovii, 1999; Abdulaev, Kolaiko, 2000 and others) revealed that the issue of establishing the classification of value

drivers and their influence on business value was little analysed. Though authors (Damodaran, 1998, 2002; Pratt, 1998; Valdaicev, 2001, Scott, 2000) emphasise the significance of the establishment and investigation of value drivers on business value, the aspect receives very little attention.

The analysis of the works by J. Ruhl, S. Cowen (1990) J. Moskowitz (1988), A. Rappaport (1998), R. Mills, C. Print (1995), R. Mills, J. Robertson, T. Ward (1992), R.C. Scarlet (1997), A. Black, P. Wright, J. Davies (2001) demonstrated that scientific literature lacks generalisations of the models for value drivers investigation because in methodological terms references to methods for establishing the impact of drivers on value are very limited. Moreover, authors (Akalu, 2002; Schor, 2000; Copeland, Coller, Murin, 1999) recognise that the issue of the analysis of value drivers is little discussed. This fact explains the importance and need of this kind of research. It is not enough to lean upon the results of the sensitivity analysis, which is presented in scientific literature as the most widely used in determining the impact of drivers on business value, because it only enables to evaluate the impact of one driver change (increase/decrease) on business value, leaving aside possible change of other drivers. Since in a factual situation the change is usually present in more than one driver, there occurs a need to apply those methods of factorial analysis which would enable a complex evaluation of the impact of change of many drivers on the change of business value.

The analysis of theoretical and practical aspects of analysis of value drivers enables to assume that in scientific literature the presented methodology of business valuation lacks deeper researches that would systematise the influencing value drivers and establish their impact on value. This predetermines the need to build a business valuation model, which would incorporate the analysis of business value drivers into the process of business valuation and would enable to provide the final dimension of business value.

Part Two. CONSTRUCTION OF A BUSINESS VALUATION MODEL BASED ON THE ANALYSIS OF BUSINESS VALUE DRIVERS

This part focuses on the course of building a business valuation model based on the analysis of business value drivers, analyses the issues of internal and external information which is referred to when estimating business, presents a classification of business value drivers, forms an instrumentation for value drivers analysis and introduces the structure of the model.

Chapter 2.1 – The course of model building discusses the issue of building a business valuation model based on the analysis of business value drivers. It presents a logic course of model building by naming its basic phases. It also expresses an attitude towards the classification of business value drivers and the establishment of their impact on business value.

Having established that the methodology of business valuation lacks exhaustive researches in the systemisation of influencing drivers of business

value and in the establishment of their impact on business value, a conceptual scheme for the classification of business value drivers is presented (see Fig.1). The presented scheme is based on the decomposition of business value, established by the method of discounted cash flows, into its influencing drivers.

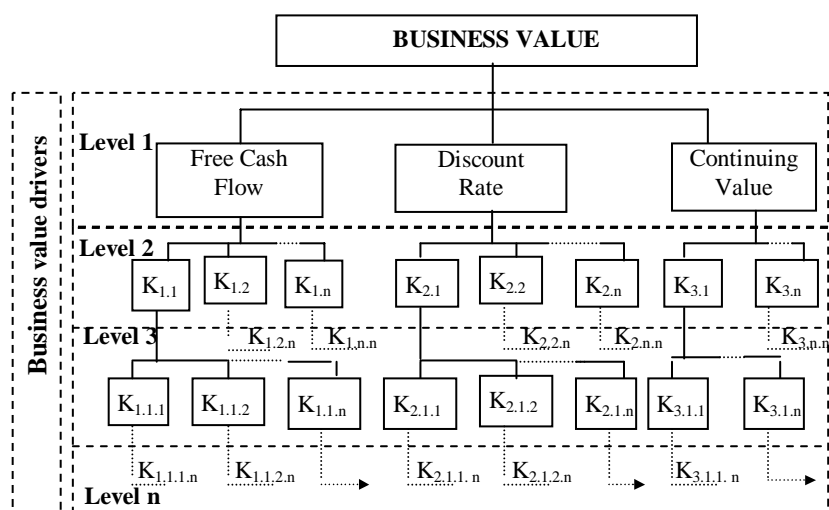


Figure1. A conceptual scheme of the classification of business value drivers

The classification of drivers formed subject to the principle of business value decomposition, depending on the particularity of the research, enables to make more or less detailed classifications of value drivers, which proves the universality of this classification principle.

By discovering the limitation of references to the methods that may be used for value drivers investigation as well as the complexity of these methods' selection and application, the author of this dissertation proposes for the investigation of value drivers to adapt the *integral method* of economical factorial analysis. The main distinguishing feature of the integral method is its preciseness and homogeneity. A significant specificity of this method is that factorial system may consist of a various number of elements. The form of inter-relation of these elements may also be diverse. If compared with other ways of determined factorial analysis, the integral method is distinguished by its universality. Apart from that, drivers' impact on the indicator in question is fully evaluated. Therefore, when using the integral method, any subjective assumptions about drivers' impact on the indicator in question is avoided.

Chapter 2.2 – Information analysis in business valuation provides an analysis of information that is used for business valuation by revealing its impact on free cash flows and discount rate.

Since scientific literature is dominated by the variety and multitude of approaches to information sources, attention was given to the division of

information into external and internal. External information represents company functioning conditions in a region, industry or economy in general. Internal information is used to define the activity of the company under valuation.

In *sub-chapter 2.2.1 – External information*, referring to the works of various authors (Mescon, Albert, Khedouri, 1992; Fahey, Narayanan, 1986; Resin, 1999; Abdulaev, Kolaiko, 2000; Efremov, 2001; Kotler, McDougall, Armstrong, 1988 and others), external information is analysed by dividing it into macro environment information and industry environment information. Taking into account the variety of dominating approaches to external environment factors and generalising available structures of macro environment, the macro environment factors in terms of business valuation are classified into the following groups: 1) economical, 2) political-legal, and 3) technological. These factors are analysed in the aspect of their impact on free cash flows and discount rate.

By reviewing the works of different authors (Vasiliauskas, 2002; Mescon, Albert, Khedouri, 1992; Stoner, Freeman, Gilbert, 1999, Jucevičius, 1998) it was discovered that despite the variety of approaches to a industry analysis, most often they are related to the M. Porter's model of five competitive forces and stand for its modifications. According to the author of the doctoral dissertation, the impact of drivers of a industry on its business value should be analysed in the following driver groups: competitor's impact drivers; consumer's impact drivers; supplier's impact drivers. Industry environment as well as macro environment are analysed in the aspect of their impact on business value.

Sub-chapter 2.2.2 – Internal information analyses the internal information of a company, which is significant in establishing business value by the method of discounted cash flows.

The analysis of literary sources showed that approaches to the internal environment analysis are very diverse and non-unified. Having analysed the works of (Jucevičius, 1998; Samotchkin, 2000; Nesterov, 1998; Vengrauskas, Perminienė, 2002; Efremov, 2001; Behrens, Hawranek, 1995), the internal environment is analysed in terms of the following aspects: marketing; production; staff and finances. The analysis of the works of authors focusing on the issues of business valuation revealed that the importance of the analysis of the evaluated entity's financial condition as one of the most important stages in business valuation. This importance is testified by the fact that the analysis of financial condition enables to evaluate the factors that had impact on the financial activity of the company and to establish the risk; it also serves as an important indicator of future operation. The results of the financial analysis have direct influence over the forecast of the company's income and expenditures and the determination of discount rate. Based on these results it is possible to see the prospects of company activities and to make further calculations needed for the final establishment of business value.

Chapter 2.3 – Classification of business value drivers provides a classification of business value drivers. This classification is based on the decomposition of business value, established by the method of discounted cash flows, into lower level drivers (see Fig.2).

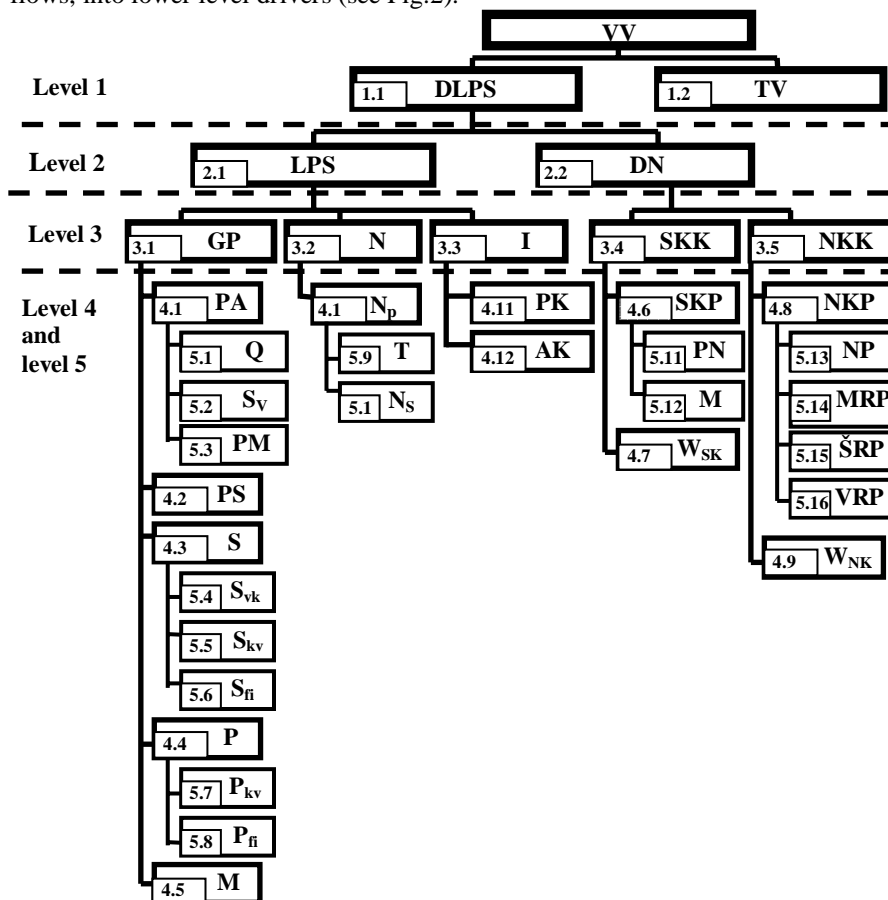


Fig.2 A scheme of business value drivers classification

First level drivers are discounted free cash flows (DLPS), which estimate the current value of free cash flows in a forecasted period, and the continuing value (TV). The establishment of second level drivers (free cash flows (LPS) and discount rate (DN)) is based on the decomposition of discounted free cash flows. Since structurally free cash flows are expressed by estimating the amount of net profit (GP), depreciation (N) and investments (I), the latter are considered as third level drivers that influence free cash flows. The discount rate drivers are established taking into account the sources of company capital

financing, i.e. debt and equity. It enables to call the costs of debt (SKK) and the costs of equity (NKK) as the third level (discount rate) drivers. Fourth level (net profit) drivers include sales (PA), cost of goods sold and performed works (PS), operating expenditure (S) income (I) and profit tax (M), which are defined according to the principle of net profit calculation used in accounting. The fourth level drivers (costs of debt and costs of equity) are established taking into consideration that these costs are determined by the rate of debt return (SKP) and equity return (NKP) and the structural distribution of these financial sources, i.e. a part of each of them in the overall amount of financial sources (W_{SK} , W_{NK}). The decomposition of sales points out fifth level (sales) drivers, which include the quantity (pieces) of manufactured products (Q), cost of goods sold and performed works per unit (S_v) and sales margin (in Lt) (PM). When establishing the fifth level (rate of equity return) drivers the structural model of calculating the equity costs was taken into consideration. Referring to the performed comparative analysis of risk-return models, the costs of equity are calculated by summing up risk-free interest rate (NP) and risk premiums as the factors of macro-, industry- and internal environment (MRP, ŠRP, VRP).

Based on the constructed classification of business value drivers (from first to fifth level) it is possible to make the classifications of lower level drivers (depending on the necessity) and to evaluate their impact on business value.

Chapter 2.4 – Instrumentation for business value drivers analysis provides grounds for the application of the integral method in analysing value drivers.

Taking into account the specificity of the integral method that is applied in value drivers analysis, some drivers in calculations are expressed in coefficients (coefficient of continuing value, coefficient of discount rate, coefficient of depreciation and etc.). The use of coefficients is based on the need to apply multiplied expressions in calculations, what enables to perform the analysis of business value drivers by using the integral method. First, the impact of lower level drivers on higher level drivers is established. For this purpose, referring to the derived mathematical expressions of drivers, matrixes of post-integral formulas are created enabling to create formulas for the calculation of drivers' impact. Calculations are based on basic calculation formulas given in scientific literature (Bakanov, Sheremet, 1997; Liubushin, Leshtcheva, Djakova, 2000) that simplify the application of the integral method.

Since the lower level drivers have influence not only on the higher level drivers but also on business value, an algorithm for value drivers analysis (see Fig.3) was formed to provide formulas for the calculation of the impact of different level drivers on business value.

It is worth mentioning that all required calculations are carried out by using Excel program package. It provides a possibility, when changing primary data, to establish not only the value of the estimated business, but also the impact of drivers on the change of this value.

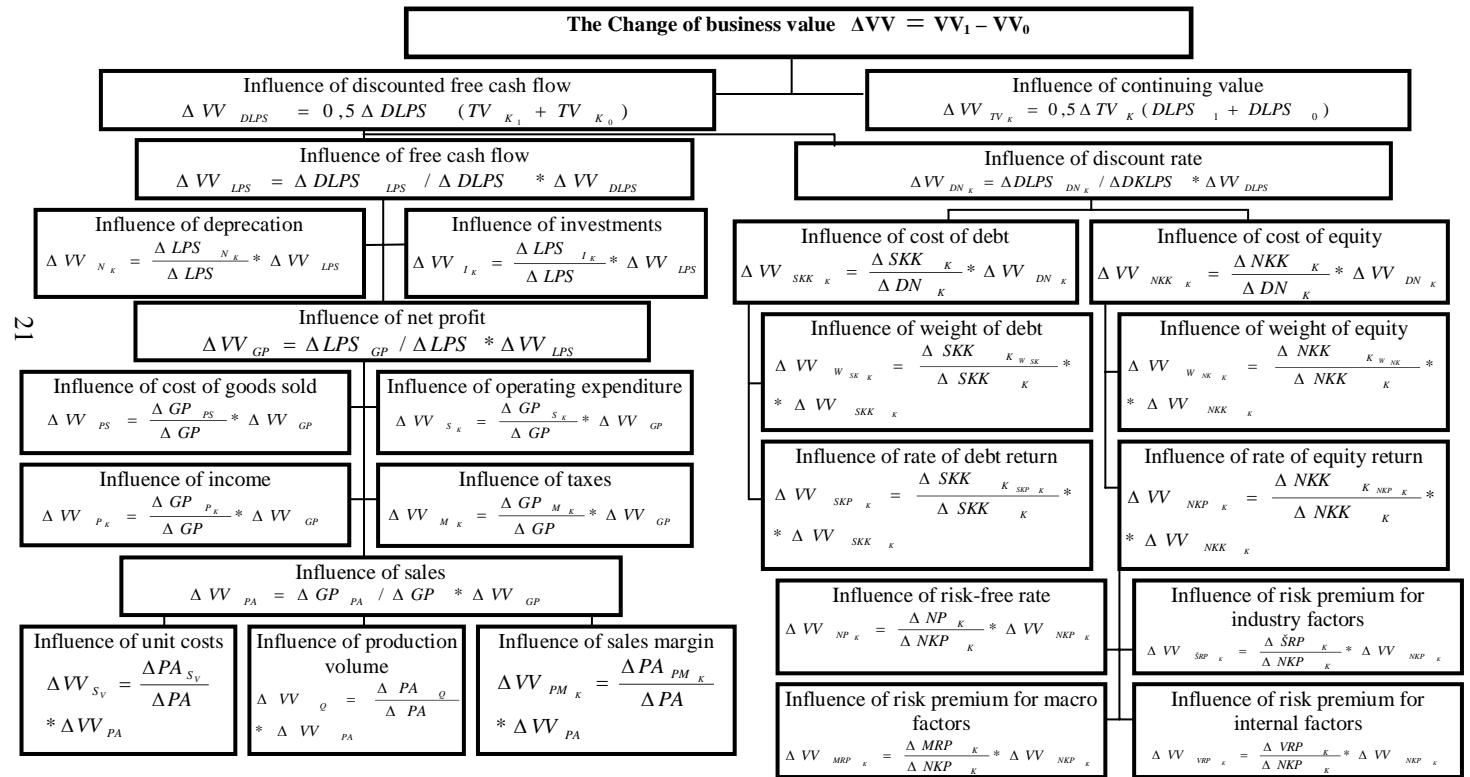


Fig. 3. The algorithm for value drivers analysis

Chapter 2.5 – The structure of a business valuation model based on the analysis of business value drivers introduces the business valuation model that incorporates the analysis of business value drivers and enables to establish the final dimension of business value.

Referring to the course of building the model (chapter 2.1), the classification of business value drivers (chapter 2.3) and the instrumentation for business value drivers analysis (chapter 2.4), a business valuation model based on the analysis of business value drivers is built (see Fig.4) encompassing the analysis of internal and external information of the evaluated object, the establishment of business value by the method of discounted cash flows, the classification and analysis of the drivers that have impact on value, and enabling to establish the final dimension of business value. Structurally, the model is built out of the following basic elements: 1) identification of the evaluated object, 2) classification of business value drivers, 3) analysis of business value drivers, and 4) determination of the final dimension of business value.

As it was proved by the analysis of theoretical questions, when evaluating business by the method of discounted cash flows it is necessary to accumulate and analyse rather wide information. This information consists of the information on macro-, industry- and internal environment. After accumulating and analysing the said information, business value is established. The establishment of business value comprises the investigation and estimation of economical and financial activity based on the analysis of retrospective and perspective information. Another very important aspect is risk evaluation, which is performed by seeking to substantiate discount rate. Since this step of the first stage includes the establishment of business value, the calculation of free cash flows and discount rate is necessary. Free cash flows are defined based on the information provided in the company's business plan anticipating an optimistic and a pessimistic version of business development. The discount rate determination is based on risk estimation.

The classification of business value drivers is based on the decomposition of business value established by the method of discounted cash flows. Drivers are classified into levels. The model comprises the drivers of level 1 to 5, but depending on the depth of a research further division into lower level drivers is possible.

The analysis of value drivers also consists of the determination of the impact of drivers on the change of business value. The impact of drivers is determined by using the integral method of factorial analysis allowing to quantitatively estimate the impact of drivers on the analysed rate. For this purpose matrixes of post-integral formulas of different level drivers that have influence on value are created; these matrixes enable to prepare formulas to determine the impact of drivers on a higher level driver. In addition, formulas to calculate the impact of value drivers on business value are created.

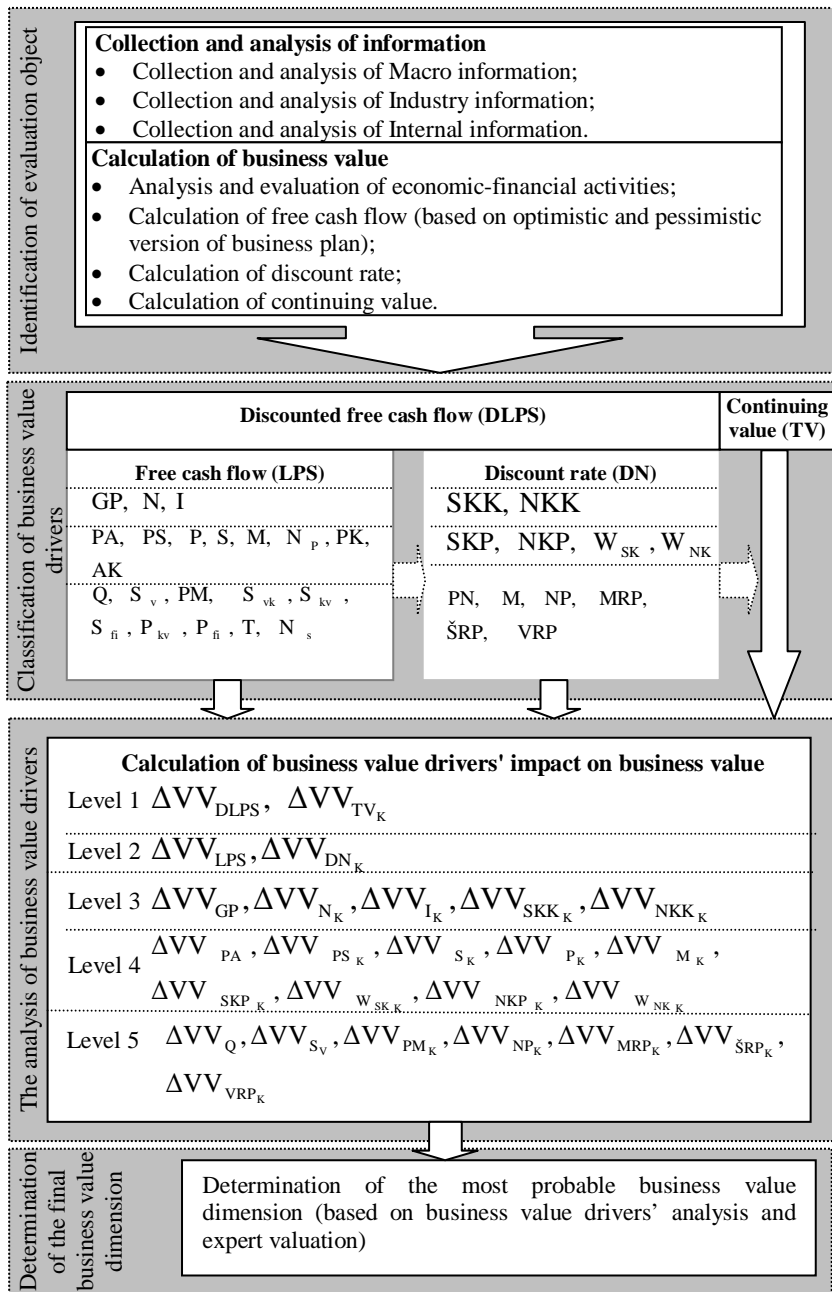


Fig 4. The structure of a business valuation model based on the analysis of business value drivers

The final (most probable) dimension of business value is determined based on the results of the analysis of business value drivers and expert valuation.

The presentation of a business valuation model based on the analysis of business value drivers necessitates to provide an experimental investigation.

Part Three. EMPIRICAL INVESTIGATION OF A BUSINESS VALUATION MODEL BASED ON THE ANALYSIS OF BUSINESS VALUE DRIVERS

This part provides an empirical investigation of a business valuation model based on the analysis of business value drivers by example of Lithuanian enterprises working in dairy industry. Following the structure of the constructed model, **chapter 3.1 – Identification of the evaluated object by example of dairy enterprises** provides the analysis of information about the evaluated object and the determination of its value.

Sub-chapter 3.1.1 – Information collection and analysis consists of the analysis of external and internal environment of a dairy enterprise as of the object under evaluation. The analysis of external environment is performed by aiming to evaluate the situation of Lithuanian dairy enterprises and to establish the main risk factors of external environment. The performed analysis proved that the undergoing process of post-socialist transformation had influence on the Lithuanian dairy industry sector. The changes resulted in the formation of three main groups of milk processing enterprises, namely SC "Rokiškio Sūris", SC "Pieno Žvaigždės, SC "Žemaitijos Pienas", which process over 80 percent of the total bought-up milk. The analysis of macro environment disclosed the main factors that determine risk, including changes in currency rates; unstable state regulatory measures in dairy industry; inconsistent state policy towards dairy sector; frequent changes in legislation; and international market fluctuations.

It was found out that enterprise-related risk factors in the dairy industry include high degree of competence; too small dairy farms; insufficient quality of raw material; and high degree of seasonal prevalence.

The analysis of financial situation of enterprises based on the calculation of financial coefficients showed a considerable worsening of the enterprises' situation in 2002, while due to unfavourable international market conjuncture exports decreased resulting in the decrease of sales. However, the calculations of financial coefficients in 2003 proved the improvement of the enterprises' financial situation. Moreover, the alterations in stock market prices and turnovers of the same dairy enterprises show that in 2003 the stock market prices were growing and the stock trade of the said enterprises was more active. One of the factors that influenced the growth of stock prices is the improvement of the enterprises' financial situation after the decline in 2002.

In *sub-chapter 3.1.2 – Estimation of business value*, based on the information of the evaluated object, its value is determined.

First, referring to financial accounting documents of the evaluated enterprise, its financial situation is analysed. The performed analysis of the financial situation and its comparison with the financial situation of the three largest Lithuanian dairy enterprises revealed a problematic financial situation of the enterprise. The company has liquidity problems, though it is a profitably working enterprise the net sales profitability of which in 2003 was higher than of all the three largest companies in the dairy industry. A major part of the enterprise's assets consists of loaned capital, which is not good. The enterprise has very weighty liabilities that considerably exceed the equity. By comparing its financial situation with that of the three largest dairy enterprises, it is possible to state that the situation of the analysed enterprise is worse. On the other hand, taking into consideration the improved situation in 2003 and larger perspectives gained with joining the EU, it is possible to assume that the situation of the enterprise should improve.

Referring to the forecast presented by the enterprise, optimistic and pessimistic versions for the period 2004-2008 in regard to free cash flows and discount rate are calculated. The discount rate is reflected by weighted average cost of capital. These costs are calculated by estimating the costs of debt and costs of equity. Based on the variety of risk-return models introduced in scientific literature and considering specific application of these models under Lithuanian conditions, the costs of equity are defined by summing up risk-free interest rate and premiums for the factors of macro-, industry- and internal environment. Leaning upon the performed analysis of external and internal information, the external and internal factors that determine risk were accentuated. Their evaluation was performed by experts, the employees of the enterprise. Subject to calculations the business value of the evaluated object was determined, which in comparison of the pessimistic and optimistic versions fluctuates from 33,801 to 48,344 thousand Lt. Accordingly, subject to the comparison of the two options of enterprise development, the change of the business value amounts to 14,543 thousand Lt.

In chapter 3.2 – Business value drivers analysis, based on the performed calculations, the classification of business value drivers (chapter 2.3) and the created analysis instrumentation (chapter 2.4), the impact of value drivers on the change of business value is defined.

Sub-chapter 3.2.1 – Analysis of discounted free cash flows and continuing value provides calculations of the impact of first level drivers – discounted free cash flows and continuous value expressed as the coefficient of continuing value – on the alteration of business value. It was established that both the change of discounted free cash flows and of the business value had positive impact on the change of business value. Due to the increase of the discounted free cash flows, by comparing the optimistic version with the pessimistic one, the business value increased by 6,403 thousand Lt. Meanwhile because of the

increase of the continuing value, which makes over 70 percent of the business value, the latter increased by 8,141 thousand Lt.

Since the change of the discounted free cash flows is determined by the alteration of the free cash flows and discount rate, calculations of the impact of second level drivers on the change of business value showed that the increase of the free cash flows caused the increase of business value by 1,723 thousand Lt. The discount rate, which in calculations is expressed in the coefficient of discount rate, increased business value by 4,679 thousand Lt. It proves that the change of the discount rate has a considerably bigger impact on the change of business value.

Sub-chapter 3.2.2 – Analysis of free cash flow drivers provides calculations on the impact of second, third, fourth and fifth level drivers on the change of a higher level driver and business value.

Calculations of the impact of third level drivers (net profit, depreciation, investments) on the change of business value showed that net profit had considerable positive influence on business value by increasing it by 11,498 thousand Lt. Meanwhile the coefficients of depreciation and investments negatively influenced the change of business value by decreasing it by 5,662 and 4,112 thousand Lt respectively.

Calculations of the impact of fourth level drivers (sales, cost of goods sold and performed works, operating expenditures, income, taxes) on the change of business value showed that positive influence on the change of business value was connected to the change of sales, operating expenditures and taxes. The biggest influence on the increase of business value was caused by the change of operating expenditures expressed in the coefficient of operating expenditures. The comparison of optimistic and pessimistic versions showed that due to the change of the coefficient of operating expenditures the business value increased by more than 7 million Lt. Negative influence on the change of business value was caused by the change of income expressed in the coefficient of income and cost of goods sold and performed works expressed in the coefficient of cost of goods sold and performed works. As the change of the coefficient of cost of goods sold and performed works had bigger negative influence on business value, it decreased business value by more than 2 million Lt.

Fifth level drivers (production volume, unit cost of goods sold and performed works, sales margin) had different impact on business value. Relevant calculations showed that major influence on the change of business value was related to the change of production volume, which increased business value by nearly 5 million Lt. The change of unit cost of goods sold and performed works increased business value significantly less or slightly over 600 thousand Lt. The change of sales margin, expressed in the coefficient of sales margin, had the least and negative influence on business value by decreasing it by 237 thousand Lt.

Sub-chapter 3.2.3 – Analysis of discount rate drivers provides calculations of the impact of second to fifth level drivers on a higher level driver and business value.

Calculations of the impact of third level drivers (costs of debt and costs of equity) on the change of business value showed that the change of equity costs expressed in the coefficient of equity costs had positive and bigger influence on the change of business value than the change of debt costs expressed in the coefficient of debt costs due to which the business value decreased by more than 2000 thousand Lt.

The results of investigations on the impact of fourth level drivers (rate of debt return, rate of equity return, weight of debt, weight of equity, which are expressed in relevant coefficients, showed that negative influence on the change of business value was caused by the change of weight of debt expressed in the coefficient of debt weight, which decreased business value by nearly 2,500 thousand Lt. On the contrary, the rate of debt return and rate of equity return increased business value by over 7,000 thousand Lt.

All fifth level drivers (risk-free interest rate, risk premium for macro factors, risk premium for industry factors and risk premium for internal factors, which in calculations are expressed in relevant coefficients) had positive impact on the increase of business value when comparing an optimistic and a pessimistic version. The biggest impact was attributed to the change of risk premium for macro factors that increased business value by more than 2 million Lt. The least impact on business value was caused by the change of risk-free interest rate. Due to the change of the said rate business value increased by nearly 200 thousand Lt.

3.3 chapter – Determination of the final dimension of business value based on the results of the analysis of business value drivers and establishment of the final (most probable) dimension of business value by employing an experimental investigation.

Based on the results of calculations, table represents the rates of the coefficient determining the impact of drivers on the change of business value. These rates are determined by estimating the portion of the change of each driver, which it occupies in the total variation of business value (comparing optimistic and pessimistic versions).

Table

The Influence of Business Value Drivers on Changes of Business Value

No.	Driver	Abbreviation	Influence coefficient
1.1	Discounted free cash flow	DLPS	0.44
1.2.	Continuous value	TV	0.56
2.1.	Free cash flow	LPS	0.12
2.2.	Discount rate	DN	0.32
3.1.	Net profit	GP	0.79
3.2.	Depreciation	N	-0.39
3.3.	Investments	I	-0.28
3.4.	Cost of debt	SKK	-0.14
3.5.	Cost of equity	NKK	0.46
4.1.	Sales	PA	0.36
4.2.	Cost of goods sold and performed works	PS	-0.15
4.3.	Operating expenditure	S	0.53
4.4.	Income	P	-0.01
4.5.	Taxes	M	0.06
4.6.	Rate of debt return	SKP	0.03
4.7.	Weight of debt	W_{SK}	-0.17
4.8.	Rate of equity return	NKP	0.29
4.9.	Weight of equity	W_{NK}	0.17
5.1.	Production volume	Q	0.34
5.2.	Cost of goods sold and performed works per unit	S_v	0.04
5.3.	Sales margin	PM	-0.02
5.13.	Risk-free interest rate	NP	0.01
5.14.	Risk premium for macro factors	MRP	0.16
5.15.	Risk premium for industry factors	ŠRP	0.08
5.16.	Risk premium for internal factors	VRP	0.04

As we may see in the table, first and second level drivers had positive influence over the change of business value. Drivers of lower levels (3 to 5) had ambiguous influence on the change of business value. As when comparing a pessimistic version with an optimistic one, business value increased by more than 40 percent. In structural view the influence of drivers that increase business value considerably exceeded the influence of those decreasing the change of business value. It is worth noticing that when establishing the impact of different level drivers on business value, the total impact of lower level drivers is equal to the impact of higher level drivers.

As in business valuation it is necessary instead of providing several dimensions of business value to determine the final dimension of business value, the results of driver analysis serve to determine the most presumable estimate of business value drivers. Taking into consideration the established

driver impact on business value, the final dimension of business value is established by making corrections in the fifth level drivers and certain fourth level drivers as they predetermine the dimensions of higher level drivers. The evaluation was carried out by experts. Taking into consideration the importance of drivers on business value, experts who are the employees of the evaluated enterprise provided forecasts of data needed to make calculations on free cash flows and discount rate, the final business value was determined, which amounted to 41,745 thousand Lt. This dimension is the most probable dimension of the evaluated object's business value the determination of which is based on the analysis of business value drivers.

CONCLUSIONS

On the grounds of theoretical investigations on business valuation and the analysis of business value drivers the author of this dissertation has created a business valuation model based on the analysis of business value drivers and carried out an empirical research of the model by example of a Lithuanian dairy company. This enabled to formulate the following conclusions of the dissertation work:

1. After performing the analysis of the concepts of value, which revealed the variety of value and approaches to this economical category in the theory of valuation and showed the complexity of the definition of value, a definition of value as an economic category was formulated in the aspect of business valuation: Value is a complex business rate expressed in monetary measurement units, which is calculated according to a respective business valuation method.
The proposed process-based definition of value in the aspect of business valuation takes it into consideration that value wholly reflects internal situation of an enterprise and the changes taking place in its external environment. In addition, regardless its subjective nature, value is expressed in monetary units. Moreover, business value is conditioned by the business valuation method applied for its determination.
2. The performed analysis of theoretical and methodological aspects of business valuation revealed the importance of selecting business valuation approaches and methods. It was established that to calculate the business value of an enterprise planning to continue its business it is the most expedient to apply the method of discounted cash flows based on the discounting of free cash flows. The analysis of peculiarities related to the adaptation of the theory of business valuation under economical transformation conditions highlighted the limitation of applying risk and profit models in the practice of Lithuanian business valuation to calculate the discount rate; this limitation is caused by the insufficiency of information base. Taking into consideration the said limitation it is proposed to calculate the costs of owner's capital by adding to non-risky

security interest rate the expertly established risk premiums for the drivers of macro-, branch- and internal environment. The suggested mode to reflect systematic and non-systematic risk in the discount rate enables to evaluate the impact of both qualitative and quantitative factors such as political situation, level of supply, quality of raw material, staff qualification or production diversification on the change of business value.

3. The analysis of scientific literature focusing on the issues of business valuation proved that regardless the declared significance of establishing influencing business value drivers, there is no unified opinion towards the classification of these drivers and the estimation of their impact on business value. The performed theoretical investigations enable to affirm the following:
 - The introduced linear classifications of influencing business value drivers are inconsistent and insufficient to evaluate the drivers that have impact on business value. Given a linear presentation of drivers is it difficult to see the inter-relations of the influencing business value drivers and business value or to measure quantitatively the impact of change of business value drivers on business value.
 - Methodological references to the methods of establishing the impact of drivers on business value are very limited. The sensitivity analysis, which is presented in scientific literature as the most widely used in determining the impact of drivers on business value, does not allow to evaluate wholly the impact of change of the majority of drivers on business value.
4. Taking into consideration the number of approaches to influencing business value drivers, the variety of classifications of drivers constructed in a linear mode and the lack of references to the methods of establishing the impact of drivers on business value, a graded classification of value drivers was formed by grouping the business value drivers into levels one to five. The classification of value drivers is subject to the decomposition of business value established by the method of discounted cash flows, because all the drivers that have impact on business value are reflected in the rates of free cash flows and the discount norm. The classification of drivers by employing the principle of decomposition combines the drivers into a system that reflects the inter-relations of different level drivers and business value. By using the principle of decomposition it is possible to form the classifications of value drivers of a desirable detailed degree. To establish the impact of drivers on business value an integral method of economical factorial analysis was applied, which enables to evaluate wholly the impact of different level drivers on business value and on a higher level driver.
5. Having stated that the methodology of business valuation presented in scientific literature lacks deeper researches in systematising the drivers that

have influence on business value and in establishing their impact on business value, and leaning upon the performed theoretical investigations a business valuation model based on the analysis of business value drivers was constructed. The main idea of the constructed model is that for the determination of the final dimension of business value the business valuation performed by the method of discounted cash flows incorporates the classification of business value drivers grouping them into level one to five and the estimation of their impact on business value. Structurally, the model comprises the identification of the object under valuation (selection and analysis of information about the evaluated object and determination of business value), the classification of business value drivers (based on the decomposition of business value, which is established by the method of discounted cash flows, and drivers of level one to five), the analysis of business value drivers (by employing the integral method of factorial analysis to establish the impact of drivers on business value), and the determination of the final dimension of business value (determination of the most probable dimension of business value based on the results of the analysis of business value drivers and expert valuation). The model provides an opportunity of not only establishing the business value, but also modelling various situations of business continuation conditioned by the changing factors of external and internal environment of the enterprise.

6. The adaptability of the constructed business valuation model based on the analysis of business value drivers was verified by establishing the value of a Lithuanian dairy enterprise. Based on the structure of the model an analysis of external and internal environment of the object under valuation was carried out followed by the calculations of free cash flows and discount rate of optimistic and pessimistic options. Business value was determined for optimistic and pessimistic options; influencing business value drivers were classified; by employing the integral method of factorial analysis the impact of value drivers on business value was calculated. Experts, the employees of the evaluated enterprise, taking into consideration the importance of value drivers for business value, carried out the forecasts of data necessary for calculations of free cash flows and discount rate. Referring to these forecasts the final dimension of business value was determined. In our case it is the most probable dimension of the evaluated object's business value the determination of which is based on the analysis of business value drivers. This proves the practical adaptability of the business valuation model based on the analysis of business value drivers created in the present doctoral dissertation to determine the final dimension of business value.
7. By summarising the results of the doctoral dissertation it is ascertained that the business valuation model based on the analysis of business value drivers expands the boundaries of the theory of business valuation by linking the analysis of business value drivers with business valuation. The

model may be applied in the practice of both business valuation and value-based management because of the following reasons: (1) with minor corrections it may be applied to the analysis of drivers that have impact on the business value of various objects; (2) based on the results of the analysis of business value drivers it is possible to determine the final dimension of business value; (3) it provides an opportunity to use the results of business valuation in accepting decisions related to value maximisation. This enables to state that the doctoral dissertation has a potential for further researches directed to the establishment of the impact of other value drivers on business value and the implementation of value-based management in an enterprise.

List of Publications and Proceedings

Publications corresponding to the list of Lithuanian Department of Science and Education

1. Chmieliauskas P., Kazlauskienė V. Diskonto normos nustatymo ypatumai vertinant verslą Lietuvos rinkoje //Inžinierinė ekonomika. 2003 m. Nr.1 (32), p. 7-13. (ISSN 1392-2785).
2. Kazlauskienė V., Chmieliauskas P. Value drivers and research methodology in the aspect of business valuation //Inžinierinė ekonomika. 2004m. Nr.1 (36), p. 25-31. (ISSN 1392-2785).

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VERSLO VERTĖS VEIKSNIŲ ANALIZĖ PAGRĪSTAS VERSLO VERTINIMO MODELIS

Reziumė

Temos aktualumas. Šiuolaikinio Lietuvos ekonomikos vystymosi etapo esminis bruožas – dviejų procesų sandūra. Iš vienos pusės, tai ekonomikos transformacija iš planinės į rinkos sistemą. Iš kitos pusės – integracija į tarptautinę ekonominę sistemą ir ekonominė, socialinė-kultūrinė globalizacija. Vykstant šiems procesams išskyla poreikis į visus verslo aplinkos kintamuosius pažvelgti itin atidžiai, numatant jų kitimų dėsningumus bei siekiant kiekybiškai įvertinti jų įtaką verslui.

Vertė mokslinėje literatūroje vadinama pilniausiu ir tiksliausiu verslo būklės indikatoriumi, atspindinčiu įmonės vidinėje ir išorinėje aplinkoje vykstančius pokyčius. Verslo vertinimas paprastai siejamas su planuojančios tęsti savo verslą įmonės vertės nustatymu, reikalaujančiu skaičiavimuose naudoti prognozuojamus duomenis. Dinamiškoje aplinkoje, kuomet rizika ir neapibrėžtumas tampa neišvengiamais įmonės veiklos prognozavimo proceso atributais, dėl įvairių veiksnių kitimo, verslo vertė gali svyruoti pakankamai plačiame diapazone. Iš vienos pusės, rizika ir neapibrėžtumas skatina mąstyti būsimų scenarijų kategorijomis ir numatyti visą vertės reikšmių diapazoną. Kita vertus, verslo vertės svyravimas plačiame diapazone, sąlygoja galutinės išvados apie verslo vertę pateikimo problematiškumą. Kadangi verslo vertė kinta keičiantis jai įtakos turintiems veiksniams, tampa aktuali verslo vertei įtakos turinčių veiksnių analizė, remiantis kuria būtų galima nustatyti galutinį verslo vertės dydį.

Mokslinė problema. Mokslinėje literatūroje, kurioje nagrinėjami verslo vertinimo klausimai, verslo vertės veiksnių analizės aspektas paliečiamas labai fragmentiškai. Nors mokslininkai pabrėžia vertės veiksnių, lemiančių verslo

vertės dydį, įtakos vertei nustatymo svarbą, nėra suformuotos vieningos nuomonės dėl šių veiksnių klasifikavimo ir analizės. Autorių, nagrinėjančių verslo vertinimo klausimus, darbuose pateikiamos linijinės verslo vertę lemiančių veiksnių klasifikacijos yra nenuoseklios ir nepakankamai įvertina verslo vertės veiksnius. Esant linijiniam veiksnių pateikimui sudėtinga išvelgti verslo vertę lemiančių veiksnių ir verslo vertės sąryšius bei kiekybiškai išmatuoti vertės veiksnių pasikeitimo įtaką verslo vertei. Mokslinės literatūros analizė rodo, kad nuorodos į vertės veiksnių įtakos verslo vertei nustatymo metodus yra labai ribotos. Nepakanka remtis jautrumo analizės, kuri mokslinėje literatūroje pateikiama kaip dažniausiai naudojama nustatant veiksnių įtaką verslo vertei, rezultatais, nes ji leidžia įvertinti vieno veiksnio pasikeitimo (didėjimo/mažėjimo) įtaką verslo vertei, nevertinant kitų veiksnių galimo kitimo. Kadangi realioje situacijoje paprastai kinta ne vienas, o keletas veiksnių, iškyla poreikis taikyti tuos faktorinės analizės metodus, kurie leistų kompleksiskai įvertinti daugelio veiksnių pasikeitimo įtaką verslo vertės pokyčiui.

Nors mokslinėje literatūroje pabrėžiamas veiksnių, kurių pasikeitimas gali lemti verslo vertės dydžio svyravimą, įvertinimo būtinumas vertinant verslą, mokslininkai nepateikia verslo vertės veiksnių analizės inkorporavimo į verslo vertinimą mechanizmo. Pasigendama adaptyvaus modelio, kuriame, į verslo vertinimo procesą inkorporuojant verslo vertės veiksnių klasifikavimą ir įtakos verslo vertei įvertinimą, būtų galima nustatyti galutinį (labiausiai tikėtiną) verslo vertės dydį.

Mokslinių tyrimų objektas – verslo vertė: samprata, nustatymas, lemiantys veiksniai.

Mokslinio tyrimo tikslas – sudaryti verslo vertės veiksnių analize pagrįstą verslo vertinimo modelį, kuris į verslo vertinimo procesą inkorporuotų verslo vertės veiksnių klasifikavimą, jų įtakos verslo vertei įvertinimą ir įgalintų pateikti galutinį verslo vertės dydį.

Tyrimo uždaviniai:

1. Sintetinant vertės ir vertinimo teorijose pateiktus vertės apibrėžimus, apibūdinti vertę kaip ekonominę kategoriją verslo vertinimo aspektu.
2. Atlikus verslo vertinimo teorinių ir metodologinių aspektų analizę, pagrįsti verslo vertinimo požiūrių ir metodų tinkamumą nustatant planuojančios tęsti veiklą įmonės vertę.
3. Atskleisti verslo vertinimo teorijos adaptavimo ypatumus ekonomikos transformacijos sąlygomis, parodant esminius šios teorijos taikymo išvystytos vertybinių popierių rinkos šalyse ir Lietuvoje skirtumus bei išryškinant esmines verslo vertės nustatymo diskontuotų pinigų srautų metodu problemas.

4. Išnagrinėti verslo vertei įtakos turinčių veiksnių analizės metodologinius aspektus, atskleidžiant mokslinėje literatūroje vyraujančius požiūrius į vertės veiksnių apibrėžimą, susisteminant verslo vertinimo literatūroje pateiktas vertei įtakos turinčių veiksnių klasifikacijas, aptariant veiksnių įtakos verslo vertei nustatymo metodus.
5. Sukurti verslo vertės veiksnių analize pagrįstą verslo vertinimo modelį, įgalinantį nustatyti galutinį verslo vertės dydį.
6. Patikrinti sukurto modelio tinkamumą vertinant Lietuvos pieno pramonės įmonę.

Tyrimo metodai:

1. Tiriant ir analizuojant metodologinius verslo vertės nustatymo ir verslo vertės veiksnių analizės aspektus, disertaciniame darbe naudojami mokslinės literatūros sisteminės, lyginamosios ir loginės analizės, dokumentų (verslo vertinimo ataskaitų, Tarptautinių ir Europos vertinimo standartų, tarptautinių organizacijų: Europos Komisijos, Tarptautinio pinigų fondo metiniai pranešimai, LR teisės aktai) analizės metodai.
2. Sudarant verslo vertės veiksnių analize pagrįstą verslo vertinimo modelį ir atliekant jo empirinį tyrimą naudojami ekonominės faktoriškos analizės integralinis metodas, ekspertinio vertinimo metodas.

Moksliniame darbe naudoti šaltiniai:

1. Nagrinėjant vertę kaip ekonominę kategoriją, klasikinius verslo vertinimo požiūrius, jų taikymo ypatumus ekonomikos transformacijos sąlygomis, verslo vertės veiksnių analizės metodologinius aspektus, remtasi užsienio šalių ir Lietuvos autorių darbais.
2. Atliekant verslo vertės veiksnių analize pagrįsto modelio empirinį tyrimą, remtasi Lietuvos Nacionalinės vertybinių popierių biržos duomenimis, analizuojamos įmonės informacija, Lietuvos statistikos departamento informacija.

Mokslinis naujumas ir praktinė reikšmė:

1. Pateiktas vertės apibrėžimas verslo vertinimo aspektu, pabrėžiantis vieną iš esminių verslo vertės bruožų – kompleksiskumą, įvertinantį tai, kad vertė kompleksiskai atspindi tiek įmonės vidinėje, tiek išorinėje aplinkoje vykstančius pokyčius.
2. Sprendžiant diskonto normos pasirinkimo problemą, įrodytas mokslinėje literatūroje pateikiamų rizikos-pelno modelių taikymo Lietuvos verslo vertinimo praktikoje ribotumas, sąlygojamas informacinės bazės nepakankamumo ir pasiūlyta nuosavo kapitalo kaštus apskaičiuoti prie nerizikingų palūkanų normos pridėdant ekspertiškai nustatytus rizikos priedus už makroaplinkos veiksnį, šakos aplinkos veiksnį ir vidinės aplinkos veiksnį.

3. Įrodžius linijinių būdu sudarytų verslo vertei įtakos turinčių veiksmų klasifikacijų ribotumą, sudaryta verslo vertės veiksmų klasifikacija, išskiriant pirmo-penkto lygio verslo vertei įtakos turinčius veiksmus, kuri paremta verslo vertės, nustatomos diskontuotų pinigų srautų metodu, dekompozicija. Toks pakopinis veiksmų pateikimas leidžia išvystyti verslo vertės veiksmų ir verslo vertės sąryšius bei įvertinti kiekvieno veiksmo pasikeitimo įtaką ne tik verslo vertės, bet ir aukštesnio lygio veiksmo pokyčiui.
4. Verslo vertės veiksmų įtaka verslo vertei nustatyta pritaikius ekonominės faktoriaus analizės integralinį metodą, leidžiantį kompleksiskai įvertinti skirtingų lygių veiksmų įtaką verslo vertei.
5. Teorinių ir empirinių tyrimų rezultate sukurtas verslo vertės veiksmų analize pagrįstas verslo vertinimo modelis, į verslo vertinimo procesą inkorporuojantis verslo vertės veiksmų klasifikavimą, jų įtakos vertei nustatymą ir įgalinantis pateikti galutinio verslo vertinimo rezultato – verslo vertės dydį.
6. Remiantis sudaryta verslo vertės veiksmų klasifikacija (nuo pirmo iki penkto lygio) ir jų įtakos verslo vertei nustatymo algoritmu, galima sudaryti žemesnių lygių veiksmų (priklausomai nuo poreikio) klasifikacijas ir įvertinti jų įtaką verslo vertei.
7. Taikant pasiūlytą sisteminės ir nesisteminės rizikos atspindėjimo diskonto normoje, laisvuosius pinigų srautus transformuojančios į verslo vertę, būdą, kuris remiasi ekspertiniu rizikos įvertinimu, galima apskaičiuoti kokybinių išorinės ir vidinės aplinkos veiksmų įtaką verslo vertės pasikeitimui.
8. Sukurto kompiuterinio modelio taikymas praktikoje suteikia galimybę ne tik nustatyti vertinamo objekto vertę, bet ir modeliuoti situaciją, kiekybiškai išmatuojant įmonės vidinėje ir išorinėje aplinkoje vykstančių pokyčių įtaką verslo vertei.

Pirmojoje darbo dalyje nagrinėjama vertės kaip ekonominės kategorijos samprata verslo vertinimo aspektu, apžvelgiamas įvairių autorių požiūris į vertę, jos matavimą, aptariami verslo vertinimo požiūriai, verslo vertės nustatymas diskontuotų pinigų srautų metodu, atliekama rizikos-pelno modelių palyginamoji analizė, aptariami verslo vertinimo ypatumai ekonomikos transformacijos sąlygomis, nagrinėjami verslo vertės veiksmų analizės klausimai.

Antroje dalyje pateikiama verslo vertės veiksmų analize pagrįsto verslo vertinimo modelio sudarymo eiga, atliekama informacijos, kuri naudojama vertinant verslą, analizė, atskleidžiant jos įtaką laisviesiems pinigų srautams ir diskonto normai, pateikiama verslo vertės veiksmų klasifikacija, sudaromas verslo vertės veiksmų analizės instrumentarijus bei pateikiamas verslo vertės veiksmų analize pagrįstas verslo vertinimo modelis, apimantis verslo vertės

veiksnių klasifikavimą, jų įtakos verslo vertei įvertinimą ir įgalinantis nustatyti galutinį verslo vertės dydį.

Trečioje dalyje atliekama informacijos apie vertinamą objektą analizė, nustatoma jo vertė, remiantis atliktais skaičiavimais ir verslo vertės veiksnių klasifikacija bei sudarytu verslo vertės veiksnių analizės instrumentarijumi, įvertinama pirmo-penkto lygio vertės veiksnių įtaka verslo vertės pasikeitimui, nustatomas galutinis verslo vertės dydis.

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