ŠIAULIAI UNIVERSITY

Rita Bužinskienė

ASSESSMENT OF THE IMPACT OF INTANGIBLE ASSETS ON THE MARKET VALUE OF COMPANIES

Summary of Doctoral Dissertation
Social Sciences, Economics (04 S)

Šiauliai, 2017

The doctoral dissertation was prepared during the period of 2012-2017 at Šiauliai University in accordance with the doctoral study right granted to Aleksandras Stulginskis University with ISM Management and Economics University, Mykolas Romeris University, Šiauliai University and Vytautas Magnus University on 8 June 2011, Resolution No. V-1019.

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The doctoral dissertation will be defended in an open session of Economics Science Field Board on 10 November 2017 at 11.00 a.m. in Šiauliai University Library, Conference Room (No. 413 a.).
Address: Vytauto St. 84, LT-76352 Šiauliai, Lithuania.

The summary of the doctoral dissertation was sent on 09, October 2017.

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ĮMONĖS NEMATERIALIOJO TURTO POVEIKIO JOS RINKOS VERTEI VERTINIMAS

Daktaro disertacijos santrauka
Socialiniai mokslai, ekonomika (04S)

Šiauliai, 2017

Mokslo daktaro disertacija rengta 2012–2017 metais Šiaulių universitete pagal suteiktą Aleksandro Stulginskio universitetui su ISM Vadybos ir Ekonomikos universitetu, Mykolo Romerio universitetu, Šiaulių universitetu ir Vytauto Didžiojo universitetu (2011 m. birželio 28 d. įsakymu Nr. V-1019) doktorantūros teisę.

Mokslinė vadovė:

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Mokslo daktaro disertacija ginama Aleksandro Stulginskio universiteto su ISM Vadybos ir ekonomikos universitetu, Mykolo Romerio universitetu, Šiaulių universitetu ir Vytauto Didžiojo universiteto ekonomikos mokslo krypties taryboje:

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Daktaro disertacija bus ginama viešame Ekonomikos mokslo krypties tarybos posėdyje 2017 m. lapkričio 10 d. 11 val. Šiaulių universiteto bibliotekos 413 auditorijoje.
Adresas: Vytauto g. 84-413, LT-76285 Šiauliai, Lietuva.

Daktaro disertacijos santrauka išsiųsta 2017 m. spalio 09 d.

Disertaciją galima peržiūrėti Aleksandro Stulginskio universiteto, ISM Vadybos ir ekonomikos universiteto, Mykolo Romerio universiteto, Šiaulių universiteto ir Vytauto Didžiojo universiteto bibliotekose.

THE CONTENT OF THE DISSERTATION

INTRODUCTION

The relevance of the topic. The pace of economic growth, people‘s social welfare and sustainable development of the economy are increasingly dependent on the creation of new knowledge and practical application of it. The activities of the company are related to different types of resources, among which intangible assets are becoming an increasingly important incentive for the company to operate. At the end of the twentieth century the increased interest in intangible assets and its impact on the market value of companies encouraged companies to increase their investment in human resources, research and development, new technologies, etc. In order to maintain a competitive advantage and increase the value of shares in the market, the true value of intangible assets in the balance remains important, as it also determines the value of the companies on the market.

Despite the growing importance of intangible assets in the process of companies‘value creation, most of them are not accounted for and do not reflect in traditional financial accounting. Typically, only some types of intangible assets are recorded in the balance-sheet: goodwill, licenses, copyrights, software, development and research. Issues and uncertainties regarding the estimation of the value of intangible assets are still not resolved. Intangible assets are only accounted for such resources whose costs meet the definition of intangible assets and recognition criteria: future economic benefits, value and control. Solving the problems of determining the value of intangible assets people encounter with a lack of disclosure of accounting information. Proper disclosure of accounting information is based on fairness and equality of rights. Otherwise, incorrectly disclosed information suggests opportunities to unfair competition in the securities market. The reliability of accounting information in the quality area is ensured by external institutions that are focused on disclosure and publicity.

The impact of intangible assets on the market value of companies is based on different scientific theories. The theory of market efficiency states that the market price immediately reflects all available information that may affect the prices of the securities. The theory of representation explores the level of disclosure of accounting information between owners and managers, which depends on information asymmetries that create uncertainty. The theory of signaling indicates that the proper disclosure of accounting information about the value of an intangible assets increases the efficiency of the capital market. Consequently, the need to investigate the value of an intangible assets arise precisely because of its impact on the market value of companies since the disclosure of the fair value of an intangible assets allow it to determine changes

in the company's market value. Information about the fair value of an intangible assets clearly reflects the gap between the fair value and the carrying amount and the ability to reduce it.

In principle, researchers are solving different problems: what value of intangible assets are disclosed in the financial statements; how the intangible assets structure is changing in various industrial sectors; to what extent unrecorded intangible assets value exceeds the fair value of the intangible assets; what is the relationship between the market value of intangible assets and companies? what is the gap between the fair and market value of the companies on the securities market, and so on. However, the vast majority of such studies are related to other countries: the USA, Switzerland, England, France, India, Malaysia, and others. An important role is played by international organizations which, in order to increase the disclosure of financial information and its comparison between economic entities and other market participants, develop and improve common international accounting standards. In Lithuania, this area was explored in a fragmented way. In recent years, there are more studies showing that the topic is relevant in the world and in Lithuania.

Scientific problem, the level of its investigation. In order to highlight the significance of information about the value of intangible assets and its impact on the market value of companies, the level of the research problem is determined taking into account the problems raised by the investigator, the subject of the research, the methods used and the results sought. Analyzing the research, two scientific approaches were revealed on the theme of the dissertation: *problem of recognition and evaluation of intangible assets as intangible assets in the accounting; and the value and benefits of disclosure of accounting information about the true value of the intangible assets and its impact on the market value of companies.*

The recognition of intangible assets as intangible assets in the financial statements is considered complicated by the definition of this assets, i.e. by identifying it, determining its value, proving future economic benefits and ensuring control. Most researchers (N. Bontis, 1998; O. Granstand and others., 1999; J. D. Teece, 2000; A. Lönnqvist, P. Mettänen, 2002; B. Lev, 2003; D. Volkov, T. Garanina, 2007; A. Jukaitytė-Sungailienė, 2009; M. Crema, A. Nosella, 2014; A. Svensson, 2014; R. Kimouche, A. Rouabhi, 2016, etc.) agree that the totality of intangible assets belonging to the company includes the integrity of the intangible assets, which is disposed by the need and purpose. However, the incompatibility lies with the possibility of accounting for these resources, using recognition criteria in accordance with generally accepted accounting standards. It is precisely because of conservative accounting standards that most intangible assets are not accounted for and are not reflected in the financial statements. Only a small part of the intangible assets account is recognized, measured and

disclosed as intangible assets. Other scientists (T. Shah, A. Khedkar, 2006; I. Mačerinskienė, S. Survilaitė, 2011; S. Sofian, S. Zaleha, A. Rasid, A. Mehri, MS Umar, 2011; K. Rudžionienė, A. Ramanauskaitė, 2012; A. Stankevičienė, A. Liučvaitienė, 2012; O. O. Jaara, K. A. R. Elkotayni, 2016) confirm that most companies account intangible assets as expenses, while the costs necessary to form these assets are regarded as spending of that period, resulting in a decrease of owners personal capital. Notation of intangible assets together with other company‘s expenses have a direct impact on companies‘results: profit and taxes. A similar approach is taken by scientists (A. Lönnqvist, L. Tech, 2002; T. Shah, A. Khedkar, 2006; G. T. R. Lin, J. Y. H. Tang, 2009; A. M. Wight, 2009; I. Mačerinskienė, S. Survilaitė, 2011; A. Stankevičienė, A. Liučvaitienė, 2012; N. Sharma, 2012; R. Kimouche, A. Rouabhi, 2016; N. Ifeanyi, O. Caroline, 2016), who claim that recognition of intangible assets has not yet been sufficiently investigated, and therefore estimation of intangible assets is considered an even more complex task, resulting in the gap between true and present value. Although various methods are created for valuation of intangible assets (J. Surroca, J.A. Tribo, Waddock, 2006; T. Shah, A. Khedkar, 2006; A. M. Wight, 2009; Ch. Abhijeet, G. Richa, 2010; J. Mackevičius, J. Jarmalaitė, 2011; V. Gižienė, Ž. Simanavičienė, 2012; C.D. Passard, K. cKenna, V. Krishnan, 2012; R.R. Gamayuni, 2015, etc.), however, the problem is due to the fact that most methods are difficult to apply in empirical studies.

Researches (J. Wrigley, 2008; C. H. Liao, 2009; Z. Z. Mohamad, H. M. Salleh, N. D. Ismail, I. T. Chek, 2014; R. Kimouche, A. Rouabhi, 2016) approve the view that determining the value of intangible assets is one of the most relevant research fields, as it relates to the asymmetry of accounting information due to inside information about the true value of an intangible assets that also affects its market value. Accounting information is important for the company’s operations. It is shown by three Nobel Prize laureates G. A. Akerlof, A. M. Spence and E. E. Stiglitz studies which were accomplished at the end of the 20th century. They looked at the issues that may arise in the markets as a result of information asymmetries, i.e. What happens to the market if some market participants have more information than others? The lack of accounting information on intangible assets and their potential for exploitation may simply distort the results of traditional financial accounting and prevent investors or other market participants from achieving objective, true accounting records of their assets. Both researchers and investors agree that intangible assets in the knowledge economy are a significant factor in increasing the competitive advantage and shareholder value, which undoubtedly affects company’s market value (D. Aaker, R. Jacobson, 1994; K. Haanes, O. Fjeldstad, 2000; R. R. Gamayuni, 2015; D. M. Ipate, I. Parvu, 2016). What is more, benefits of intangible assets emerged at the begining of the 20th century. In 1978 US scientist

E. Denison's research results of the period 1929–1976 were published which showed that the quality of labor supply (employees' education, qualifications, knowledge, experience, etc.), application of scientific and technical innovations and the use of new investments have the greatest influence on economic growth. The tangible assets that dominated in the industrial period were increasingly affected by intangible ones, which grew rapidly due to information technologies, electronics and the Internet. Information has become an influential resource for all areas of science, business, production and private life (A. Abu-Musa, 2009). An approach has emerged that in the 21st century, successful competitiveness will depend precisely on the value and cost of managing intangible assets (A. Lönnqvist, L. Tech, 2002; A. Wyatt, M. A. Abernethy, 2003; T. Shah, A. Khedkar, 2006; G. T. R. Lin , J. Y. H. Tang, 2009; C. D. Dean, K. McKenna, V. Krishnan, 2012; N. Sharma, 2012, and others). The ability to constantly renew, create new products, processes or services and expand in new directions is a key factor in the company's value creation (И. А. Бланк, 2002; R. Strazdas, A. Jakubavičius, K. Gečas, 2003; Z. Liepė, A. Sakalas, 2008; O. O. Jaara, K. A. R. Elkotayni, 2016). Not only the academic community, but also national and international organizations like the World Bank, the European Commission, the Organization for Economic Co-operation and Development, the World Economic Forum, the Center for Science and Studies Monitoring and Analysis, the Knowledge Economy Forum, Lithuanian Innovation Center, etc. are interested in increasing the value of intangible assets and their impact on the market value of companies. Their research constantly emphasizes the benefits and importance of intangible assets. All this once again reflects the importance of intangible assets in assessing their impact on the market value of companies.

After analyzing and structuring the problems raised in the scientific literature, **the scientific problem** of the dissertation is formulated - *what evaluation methods are used to measure the value of intangible assets and how to perform the impact of intangible assets on the market value of companies by revealing and purifying property's need for practical application and real possibilities.*

The object of the research – the impact of intangible assets on the market value of companies.

The purpose of the research – after analyzing valuation methods of intangible assets and the impact concepts on the market value of companies, to compile and test the model for determining the impact of an intangible assets on the market value of companies.

Research tasks:

1. To analyze and classify the concepts of intangible assets, by distinguishing the main features forming the meaning of the concepts.
2. To evaluate and define the elements of intangible assets, comparing academic attitudes and legal regulation in financial accounting.

3. To analyze and summarize the methods for determining the value of financial and non-financial information on intangible assets based on the normative accounting theory.
4. Identify and justify the impact of an intangible assets on the market value of companies, taking into account aspects of positive accounting and financial economic theories.
5. To draw up a conceptual model of the impact of intangible assets on the market value of companies and to prepare an intangible assets valuation methodology for assessing the reliability of the model.
6. To check the validity of the completed model in determining the impact of intangible assets on the market value of quoted companies on the Lithuanian stock exchange by applying the financial and non-financial information intangible assets value consolidation.

Scientific research methods. In the theoretical part of the dissertation, general research methods were applied – detailing, systematization, grouping, integration, comparison, analogical search, logical analysis method, graphical modeling, generalization, etc. Empirical research data was collected using random sampling method and content analysis method. The value of intangible assets has been determined by applying historical price and financial instrumentation (FiMIAM) methods. The econometric modeling – models of panel data regression were applied to estimate the impact of intangible assets on the market value of companies. Econometric modeling analysis was performed using MSExcel and GRETL software.

Data sources used in the scientific work. Primary scientific work data sources include scientific publications of the authors of Lithuanian and foreign countries, as well as scientific research papers on the topic of the dissertation. For empirical research, Lithuanian companies' financial statements, annual reports and other financial information were used.

Defensive claims:

1. The appropriateness of the conceptual model of an intangible assets on a company's value depends on developed research methodology, which allows a more accurate assessment of the impact of an intangible assets on the market value of companies.
2. The effect of an intangible assets on the market value of companies may vary, depending on the chosen valuation method, company's factors that are associated with price changes in the shares market and the sector of corporate activities.

Dissertation structure. The logical scheme of the dissertation based on solving a scientific problem and consistently implemented according to the sequence of formulations (Figure 1).

Dissertation consists of an introduction, a set of tables, pictures, concepts and abbreviations, 12 chapters joined into 3 working parts and a list of references. Thesis volume – 148 pages, 21 pictures, 46 tables, 42 appendixes.

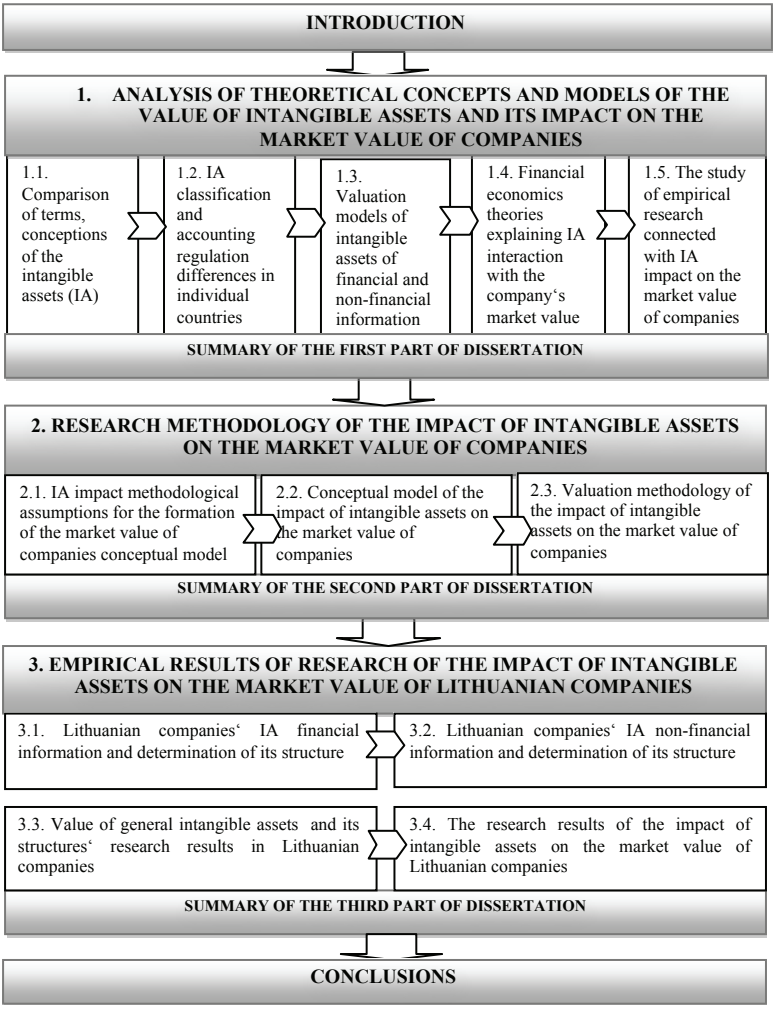

Figure 1. The logical scheme of the dissertation

Defensive claims:

1. The appropriateness of the conceptual model of an intangible assets on a company's value depends on developed research methodology, which

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2. The effect of an intangible assets on the market value of companies may vary, depending on the chosen valuation method, company‘s factors that are associated with price changes in the shares market and the sector of corporate activities.

Restrictions on the study.

1. An analysis of the intangible assets' concept covers only the essential similarities and distinctions inherent in that assets and, therefore, is separate from identifications and comparison with intellectual capital and the interpretation of other synonymous terms.
2. Due to the complexity of valuation methods, to measure non-financial information‘s value of intangible assets were chosen to use market capitalization methods, dissociating from analysis of other valuation methods.
3. The dissertation examines the impact of an intangible assets on the market value of companies and is, therefore, dissociated from the analysis of the company's business value concept. The concept of company's market value is equated to the company's capitalization term.
4. Company‘s market value is calculated irrespective of the profitability of the company's shares, liquidity, their division or merger, as well as the reasons for the rise or fall of stock market prices.
5. When modeling the impact of an intangible assets on the market value of companies, it is dissociated from external factors, but additionally companies‘factors are integrated, which determine price of the stock market.

The novelty, significance and practical applicability of scientific work.

1. Analyzing concept definitions of intangible assets, some differences are found when comparing terms of this property. There is still no consensus on the interpretation of intangible assets from the point of view of science. In order to increase the clarity and precision of the concept of this property from a scientific point of view, it is suggested that the definition of the concept of intangible assets be formulated taking into account the economic significance of the intangible resources, the economic benefits provided, the added value created and the growth potential of the company's market value.
2. When analyzing the content of international accounting standards and commonly accepted accounting principles between different countries, the similarities and differences between the acknowledgements of intangible assets in accounting are disclosed. Based on the results obtained, an intangible assets classification has been compiled incorporating eight elements of intangible assets that are distinguished from many other proposed ones, since they show different sub-elements of intangible assets of financial and non-financial information, linking them to investing in

people, market research, intellectual property, technologies, innovations, relationships, etc. This classification can be successfully applied in different branches of enterprises, to expand and supplement the theoretical and practical concepts of the company's financial management.

3. In the past, when performing empirical studies, value of financial information for intangible assets was most frequently used. The dissertation proposes to evaluate not only the value of financial information for intangible assets but also the value of non-financial information for intangible assets, thus revealing the true value of intangible assets that is available to the company. The obtained extended intangible assets valuation information may be valuable to both the owners of the company and investors, as this value plays an important practical role in assessing the impact of intangible assets on the market value of companies.
4. The conceptual model of the impact of intangible assets on the market value of companies is based on theoretical assumptions of normative and positive accounting, effective market, signalization and representation, which underpin the practical relevance of the developed model. The model reveals the significance and exclusivity of the intangible assets, which allows a more precise estimation of the impact of this assets on the market value of companies. This way, it is proposed to increase the transparency and reliability of financial and non-financial information in the capital market. This model can be developed in other areas of research.
5. The methodology for assessing the value of an intangible assets and its impact on a company's market value is distinguished by the complex integration of the procedures for determining the value of financial and non-financial information of intangible assets, and the econometric models proposed for the market value of an assets, reflect the components of different structures. The methodology for assessing the impact of an intangible assets on a company's market value includes the specific conditions necessary to determine the value of an intangible assets and its impact on the market value of companies. The methodology can be applied in Lithuanian and foreign companies and useful for business objects, financial market participants and other economic entities. This methodology can be the basis for developing the dissertation theme in more diverse concepts, changing scientific methods, redefining goals.

Further direction of research development

The impact of intangible assets on the market value of companies model developed by the dissertation on the basis of the assessment methodology can be applied when researching: (a) the impact of intangible assets on the company's business value, competitive advantage, value added; (b) the effects of intangible assets, including new or altered factors that may affect the company's market value.

GENERAL REVIEW OF THE CONTENT OF THE DISSERTATION

In the first part of dissertation analysis of the content of the concepts of intangible assets to define the identities and distinctions of these concepts from the point of view of science. The classification of intangible assets has been analyzed, the elements of this assets and their sub-elements are classified. The presented differences of intangible assets at the accounting regulation of different countries (USA, United Kingdom, Russia, India, Canada, Luxembourg, France, Sweden, Germany, Denmark, Lithuania). The methods for determining the value of financial and non-financial information of intangible assets have been analyzed. In order to identify and justify the impact of an intangible assets on the market value of a companies, account was taken of the aspects of financial economic theories, research by researchers and methodology of their research.

The concept of intangible assets developed in the end of the XX century (Dumitrescu, 2012). Analysing the definitions and descriptions of the concept of intangible assets presented by scientists, it was noticed that this concept was interpreted differently, without consideration of the scientific research aspect (Table 1).

Table 1. **Description definition of intangible assets**

Authors	Description
Sacui, Szatmary, 2015	Intangible assets can be described as assets that are based mainly on information and knowledge
Andriessen, 2005; Garanina, Pavlova, 2011; Crema, Nosella, 2014	Intangible assets helps to build and to increase a value of company
Blair, Wallman, 2003; Volkov, Garanina, 2008; Villanueva, 2011; Vidrascu, 2015	Intangible assets makes it possible to expect economic benefits in the future
Lev, 2001; Ipate, Parvu, 2016	Intangible assets play an important role in maintaining the competitive advantage of a company
Lev, 2003; Volkov, Garanina, 2008; Jukaitytė-Sungailienė, 2009; Crema, Nosella, 2014, Svensson, 2014; Kimouche, Rouabhi, 2016 and oth.).	Intangible assets consist from intangible resource, which belong and used according to the purpose in the company

The concept of intangible assets ussualy is used in the financial science. In economics studies this concept often interprets as a knowledge assets. But most scientists intangible assets identifies as part of intellectual capital in the management science. And this interpretation of the term is also can found in the fields of economics and law. This forms incorrect approach to the using of the concept of intangible assets. Pursuing to avoid ambiguities, hereby we offer to form the definition of intangible assets highlighting the essential exclusivities of such assets:

1. *The content of intangible assets is formed by intangible resources owned by an enterprise;*
2. *The value of intangible assets is disclosed recognising or not recognising intangible assets as assets in accounts;*
3. *The economic benefit of intangible assets is established by the created added value in the performance of an enterprise;*
4. *The economic benefit of intangible assets determines changes in the market value of an enterprise.*

In order to maintain a competitive advantage and enhance value of the shares, the real structure of intangible assets in the company is very important. Shortage of information on intangible assets and the use of structure of its potential make it possible to manipulate the results of traditional financial accounting, while investors and other market participants are not reached by objective information reflecting real state of financial information of organization. The acknowledgement of intangible assets and its accounting for the balance sheet is considered to be difficult and complicated. In most cases the costs incurred by companies which are not accounted as intangible assets are included in either cost of production or recognized as operating expenses, thus reducing not only the quality of accounting information, but also the property of the owners published in the financial statements. As stated by D. Aboody, B. Lev (2000), if there are indications that in the publicly disclosed financial statements there is lack of information about the intangible assets, it means the information presented is not fully disclosed. This leads to incorrect valuation of intangible assets (Lev, 2001). Most scientists agree, that intangible assets are often divided into the following categories: *Marketing –related, Human-centered, Contract-based, Technology-based*, *Innovative-related*, *Customer-related, Artistic-related* and *Goodwill*. Each type of assets disclose a special characteristics in the literature of scientific: *1. Marketing –related – it is a type of intangible assets, which is used to promote a sales of goods or services. 2. Human-centered – it is a type of intangible assets, which includes a potential of creative and competent personnel, their experience, knowledge, education and so on. 3. Contract-based – it is a type of intangible assets, which mainly includes a rights of contractual and licenses. The main objective of this property to ensure the protection and control. 4. Technology-based – it is a type of intangible assets, which includes a rights of contractual or non-contractual and can be used as infrastructure of technological. 5. Innovative-related – it is a type of intangible assets, which inculdes a investment of development of products or service. 6. Customer-related – it is a type of intangible assets, which take a relationship of customers and suppliers. 7. Artistic-related – it is a type of intangible assets, which including the right to receive the benefits of artistic creation. 8. Goodwill – it is the type of intangible assets, which includes*

a intangibles when company is consolidation or acquisition to other company (Wyatt, Abernethy, 2003; Corrado, 2005; Grace T. R, 2009; Willey, 2011; Pekkola, 2011; OECD, 2013 and oth.).

Assets in relation with marketing reflect economical information about the market support and the development thereof: trademarks, names, brands, customer portfolio, websites, trade style, etc. Assets invested into a human being include employee's knowledge, skills, experience, training, salary costs and other resources, which are necessary to maintain the employees' motivation and loyalty. Intellectual ownership assets are significant due to the protection and control of copyrights, licences, patents, projects and other resources. Technology assets include software, hardware, databases, technology patenting, etc. A huge flow of intangible resources prevails in innovation assets. Such resources demonstrate the investment targets of an enterprise and the solutions thereof. Such assets include development and research expenses, scientific and technological researches, the development of new products, the improvement thereof, market research, organisational structures, business culture, etc. Communicational/relationship assets reveal the potential of buyers and suppliers, their cooperation relationships, agreements, etc. Artistic assets demonstrate the creative dissemination of products: books, newspapers, musical works, advertising videos, pictures, photographs, videos, etc. Goodwill is accounted, where an enterprise acquired another enterprise pursuing and expecting some economical benefit in future. This element includes the reputation, image, business culture, customer loyalty and other resources of the acquired enterprise. The reviewed structure of intangible assets demonstrates the totality of intangible resources, which increase the created added value and existing competitive level of enterprises in the market (Corrado et al, 2005; Lin, Tang, 2009; Wiley, 2011; Sacui, Szatmary, 2015; Ifeanyi, Caroline, 2016).

Investigating the inter-relationship of intangible assets and the market value of an enterprise, the aspect of accounting information disclosure is also very important. The effect of the presenting of accounting information to the market on the prices of the shares of a company is based on the basic financial economics theories: efficient market, agency and signalling. The theory of efficient market is based on the statement that intangible assets must reflect the fair value. The behaviour of the participants of the market is assessed according to obtained information. In the efficient market, the price has already included everything, what happened before that moment, and changes depending on obtained information and the response of the participants of the market. The essence of the informative efficiency of the market lies here: the capital market performs efficiently, where the change of security, stock exchange prices is contingent, unpredictable. A completely random change of prices is inherent to capital markets. It is impossible to predict it as it is impossible to predict events, which

could make influence on the change of prices. And vice versa, a capital market shall not be considered efficient, if the change of prices is predictable using old information or the information, which is available only to a few participants of the market (Rupulytė, 2013; Gudonytė, 2012; Klimašauskienė, Moščinskienė, 1998).

The theory of efficient market does not explain, why enterprises select particular accounting methods. The explanation of the selection of particular models is taken from the agency theory. According to scientists' statement, the agency theory accentuates interrelationships between principals and agents, for example, shareholders and managers, the relationships, which depend on the asymmetry of information creating uncertainty (Deegan, 2003; Dreven, Stanton and McGowan, 2007). Whereas the managers of an enterprise have access to such information, which is not always available to owners, the asymmetry of information emerges and the possibilities of the managers to act in their own favour increase, which is not always the best reflection of the needs of the shareholders (Schroeder, Clark, Cathey, 2001). While some refer on the whole, and others on only publicly available accounting information, the problem of the asymmetry of information arises. And when unfair traders receive more profit with less risk, the inequality of investors grows. Over time, the confidence in security market decreases as well as the liquidity and market efficiency decrease (Andrulytė, Jurkšas, 2015). The asymmetric information considers three relevant problems: *1. Not everyone has the same (identical) information. 2. Everyone has less information than the actual one. 3. Where the parties to a transaction have any undisclosed publicly information, which is not presented by the both parties to the transaction.* Pursuing to avoid the asymmetry of information, it is purposeful the signalling theory. The idea of this theory is to encourage managers using some particular signals to communicate information to consumers so that they could make right decisions (Martirosianienė, Stončiuvienė, Zinkevičienė, 2016; Alves, Martins, 2010).

According to the theory of signalling, the information about future revenue of an enterprise and growth possibilities is in the managers' disposition. The value of the asymmetry of information depends on the intensiveness of the signal and this may cause an incorrect assessment of newly emitted equity. The asymmetry of available information may cause the unfavourable selection of investments (Schroeder, 2010; Alves, Martins, 2010; Dragota, Semenescu, 2008). Scientists (Alves, Martins, 2010) state that a huge asymmetry of information is inherent to companies with lots of intangible assets. Then managers shall be encouraged to disclose as accurate information as possible to capital markets via financial solutions, the structure of the capital and dividend policy. A signal effect signalises about the future revenue of the company, therefore a high dividend payout ratio increases the value of the company (Dumbravaitė, 2006). Hence, if

the market value of enterprises depends on the signal presented by the managers of the company to the capital market, then we can make an assumption that the companies, which signalise high quality information about intangible assets, may get a positive response from the capital market. In the event if investors do not now the fair value of intangible assets, they cannot assess accurately the price of shares issued to the market, whereas any clear information about investments into intangible assets is not available (Klimašauskienė, Moščinskienė, 1998; Schroeder, Clark, Cathey, 2001; Deegan, 2003; Dumbravaitė, 2006; Dragota, Semenescu, 2008; Kancerevyčius, 2009; Alves, Martins, 2010; Rupulytė, 2013; Gudonytė, 2012).

The researches of scientists, who having considered a market's response to information about account changes (depreciation, investment taxation, inventory accounting methods, etc.) present two major types of changes: *1. Changes, which cover only the method of data publication. They do not make any effect on prices, whereas they do not affect the cash flows of the firm and meanwhile do not change its economical value; 2. Changes, which may change the market value of an enterprise via cash flows.* These are real changes and they change market prices (Rudžionienė, 2012).

Research of science which analyzed the impact of intangible assets of the company's market value can be found in the different countries: Indonesia (Hidayati et al. 2012; Gamayuni, 2015), Albania (Prasnikar et al, 2012), French (Tanfous 2013, Kimouche, Rouabhi, 2016); Slovenia (Prašnikar, 2010), India (Dutzi, 2012; Bottaro et al, 2013); Malaysia (Salamudin et al., 2010; Shukor et al., 2009) and others. The findings of scientific researches revealed that the value of intangible assets did not always have a positive and strong relationship with the market value of an enterprise. The established negative relationship confirmed that the real value of intangible assets was not disclosed. The undisclosed value of intangible assets exaggerate the value of the return on investment, and this reflects the lack of information about the true value of the intangible assets. The main reason identified by scientists was the limited application of the general accounting principles in accounting. The balance value of assets does not reveal the true value of intangible assets in the disposition of an enterprise.

METHODOLOGY OF RESEARCH AND METHODS

In the second part of the dissertation, the conceptual model of the impact of intangible assets on the market value of companies is based on theoretical methodological assumptions (Figure 2).

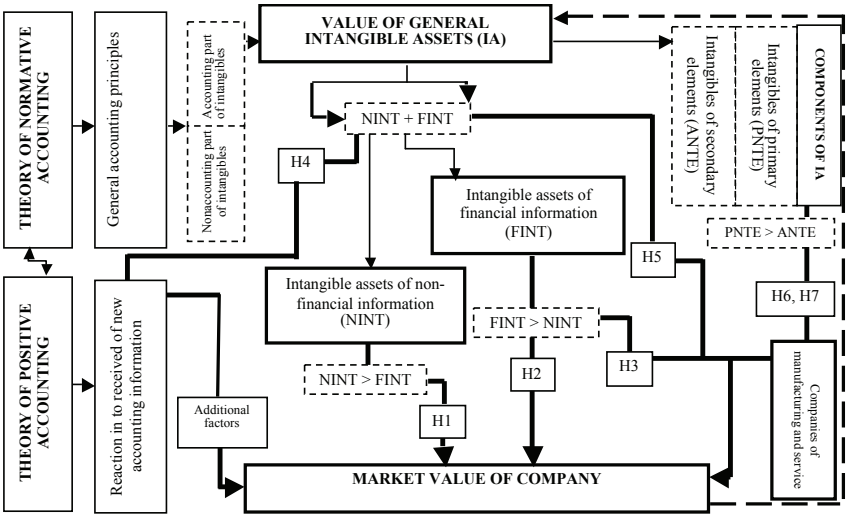

Figure 2. The model of the impact of intangible assets on the market value of companies

The aim of the model is that the impact of intangible assets on the market value of companies increases when leaders of companies provide clear and understandable accounting information about the value of intangible assets that they have the right to dispose this assets in activities of companies. The reaction of investors to the information published by managers is positive and significant. In order to evaluate the reliability of the model, an algorithm for this model was developed, which includes seven steps (Figure 3).

The theory of normative accounting solves problems related to improving the quality of accounting information. Combining traditional historical pricing and fair value pricing systems, it is possible to determine not only the value of intangible assets (IA) but also flexibly adjust to changes in market prices. This theory is closely related to the general accounting principles, since the estimation value of IA depends on a properly chosen pricing policy that is necessary to disclose the true value of the intangible asset. The requirements of the general accounting principles for determining the value of IA do not always correspond to the real situation and can not always be applied to the accounts

of companies. For this reason, the value of IA involves two main accounting segments: accounted and non-accounted by intangible assets. The greater part of intangible assets is non-accounted because most of the intangible assets are written down to operating expenses. Due to strictly regulated legislation, the most important part of accounting information remains incomplete information for consumers.

The accounting disclosure aspects are analyzed by the positive accounting theory, which emphasizes the relationship between accounting information and stock price developments. Publicly disclosed information is regulated by the general accounting principles (GAP) and is therefore reflected in the company's balance sheet as the value of the financial information intangible asset (FINT). In contrast, non-public information is associated with the value of non-financial information intangible assets (NINT).

The researchers raised various scientific hypotheses in assessing of the impact of intangible assets on the market value of companies. Some researchers focused on the evaluation of trends in the growth of intangible assets, others - on the degree of immateriality (gap) and its impact on the market value of companies (R. Kimouche, A. Rouabhi, 2016; R. R. Gamayuni, 2015; M. B. Tanfous, 2013; W. Bottaro ir kt., 2013; A. J. Prasnikar ir kt., 2012; A. Hidayati ir kt., 2012; M. A. Dutz, 2012; J. Prašnikar, 2010; N. Salamudin ir kt., 2010; D. Supriyo, 2009; A. Shukor ir kt., 2009 ir kt.). In mostly the value of intangible assets of financial information has been used in empirical studies. So it is unclear what the impact of intangible assets of non-financial information on the market value of companies, what the impact of value of general intangible assets when evaluating distribution of this value in different groups of companies.

Depending on the circumstances presented above, is raised the hypothesis of the first research:

H1. The impact of value of intangible assets of non-financial information on the market value of companies is stronger than the value of intangible assets of financial information.

The first hypothesis of the study is to determine the impact of the intangible assets of financial and non-financial information on the market value of companies and comparing their stronger of impact to each other. It is likely that the value of intangible assets of non-financial information on the market value of companies is stronger and higer than the value of intangible assets of financial information. In the opinion of the author of disertation, the reaction of investors to the value of intangible assets of financial information can occur in various forms of impact: direct or reverse. This may be due to the fact that this information only include the publication of data and doesn't relate to changes in cash flows. In addition, the intangible assets of financial information (FINT) is valued at the historical price and the intangible assets of non-financial information (NINT) is valued at the market price, hence the value of FINT represents the lower part of intangible

assets (FINT < NINT). If the intangible assets of financial information would be valued at market price, but not at historical price (FINT > NINT), the impact of intangible assets of financial information on the market value of companies can change to the efect of direct.

According to arguments of theoretical, the hypothesis of the second research is raised, which is being extends the hypothesis of the first research:

H2. With a relative increase in the value of financial information of an intangible asset, the impact of financial information intangible asset (FINT) will be greater on the market value of companies. The second hypothesis of the research assumes that the relatively higher growth of FINT despite the fact that this value is lower, but in comparison with the previous year its ratio is increasing, has a greater impact on the market value of companies. It is likely that, to a certain level, the relatively high FINT value can have a direct impact on the market value of companies. When analyzing the changes in the value of intangible assets of financial and non-financial information and its impact on the market value of companies, the question arises whether the impact of this asset depends on the industry and the nature of the company's operations. In order to verify this fact, the third hypothesis of the research is formulated:

H3. The impact of the value of intangible asset of financial and non-financial information on the market value of companies is stronger in the manufacturing companies than in the service companies. The third hypothesis of the research complements the first hypothesis, which is intended to determine the difference between the impact of the financial and non-financial information of intangible assets in different groups of companies. When dealing with accounting information, the issue of transparency is often raised. It is understood that the value of accounting information depends on the disclosure of information about the general value of the intangible asset. If managers are not motivated to properly disclose this information, based on the signaling theory, there is an opportunity to increase the information asymmetry between executives and investors. Therefore, publically belied information, together with a legal presentation provides more transparent accounting information about intangible assets, increases investors' confidence, and this determines the company's market value. The fourth hypothesis of the research is raised:

H4. As the value of general intangible assets (IA) increases, the market value of companies increases. This hypothesis is based on the fact that the changes that are associated with the provision of new accounting information to the market depend on the accuracy of the information, revealing the general value of intangible asset. The fifth hypothesis of the research is formulated to assess different effects of IA on the market value of companies in different industries:

H5. The impact of general intangible assets on the market value of companies is stronger in the manufacturing companies than in the service

companies. The fifth research hypothesis is related to the fourth one, and the aim is to compare the effect of IA on the market value of companies in the manufacturing and service groups.

It has been observed that in the scientific literature, individual subelements of intangible assets are often analyzed, but there is a lack of research to assess the impact of intangible asset elements on the market value of companies. The management's decision to provide information on intangible assets would further enhance information efficiency in the capital market. The sixth hypothesis of the research is raised:

H6. The intangibles of primary elements cause stronger effects on the market value of companies than intangibles of secondary elements. An intangible asset that is properly used for its intended purpose helps ensure the company's success. The disclosure of the impact of the above mentioned intangible assets on the market value of companies in different industries further elaborates on the seventh hypothesis of the research:

H7. The impact of the elements of primary and secondary intangibles on the market value of companies is stronger in the manufacturing companies than in the service companies. Taking into account the composition of intangible assets and the diversity of its subelements, the aim is to confirm that the intangibles of primary elements not only have a stronger impact on the market value of companies than secondary ones, but also have a different effect on the groups of manufacturing and services companies. In order to obtain reliable research results, the model must include other additional factors that affect the company's market value. This will prevent the intangible assets from affecting the firm's market value. The conceptual model of the impact of intangible assets on the market value of companies does not escape certain restrictions. The main limitation of this model, based on the theory of normative accounting, is related to the determination of the value of the financial information intangible asset. The value of FINT is governed by the general accounting principles and constitutes the total value of the intangible assets. This value can not be changed to the value of another type of property.

The assessment of the impact of an intangible asset on the market value of companies is diverted from the theoretical and practical insights of representation and signaling. The dissertation does not evaluate the relations between the manager and the shareholder, their interests and conflict situations. The formation of capital structure, dividend policy in the financial signaling aspect and the existence of asymmetry of information between executives and market participants are not taken into account. The model involves changes in the meaning of disclosed (FINT) and undisclosed (NINT) information. It is important to note that the model of the impact of an intangible asset on the market value of companies, developed by the dissertation, is suitable for listed companies, but may also be used by other ones with certain reservations:

1. Based on empirical research, the impact of an intangible asset can be measured not only on the market value of companies but also profitability, added value, competitive advantage, etc. Against this background, the company's market value can be changed according to the chosen research direction. 2. For the calculation of non-financial information for intangible assets, one should choose another valuation method or a relative index, between the market value and the equity value (RV / NK), should be changed to the relative value of the business value and equity value (VV / NK).

Testing an empirical analysis of the validity of the model for the impact of intangible assets on the market value of companies, a model algorithm is developed (Figure 3).

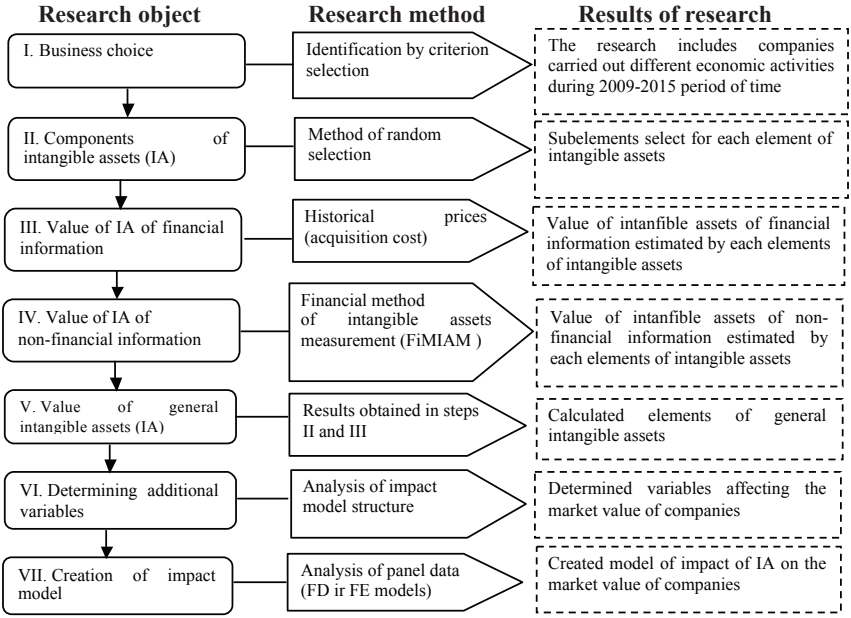

Figure 3. Algorithm of model for the impact of intangible assets on the market value of companies

Stage 1. Business choice. To determine the research size, the following criteria were chosen: *company's market value, date of listing, industry, financial information intangible asset (FINT), set of financial statements and annual reports.* In determining the research size, a criterion selection is applied which corresponds to the context of the work topic and the content of the research problem. All of the listed criteria form the first stage of the research structure.

The study uses data from 18 companies' financial statements and annual reports. The financial and non-financial information presented in these reports is considered as the main financial source. This information is publicly available and freely accessible to each external user of the information. In order to perform a comparative analysis, different industries were selected for research and grouped into two large groups: *manufacturing and services.* The size of research was found to consist of 9 services and 9 manufacturing enterprises. The main activities of the services group are *telecommunications, financial, industrial and utilities.* The activities of the group of manufacturing companies include *the production and marketing of food and beverages, clothing, textiles, household paper, household appliances, alcohol, construction materials.*

Stage 2. Components of intangible assets. The second stage of the research shows the way of structure of the intangible assets. Depending on the suggestions of scientists to elements of the intangible assets and their sub-elements , the randomized sampling method is applied. There were selected 57 sub-elements of intangible assets, which are grouped into 8 main elements of intangible assets. According to the principles of general accounting, a classification of intangible assets has been prepared, which consists in two parts of assets: accounting and non-accounting (Figure 4).

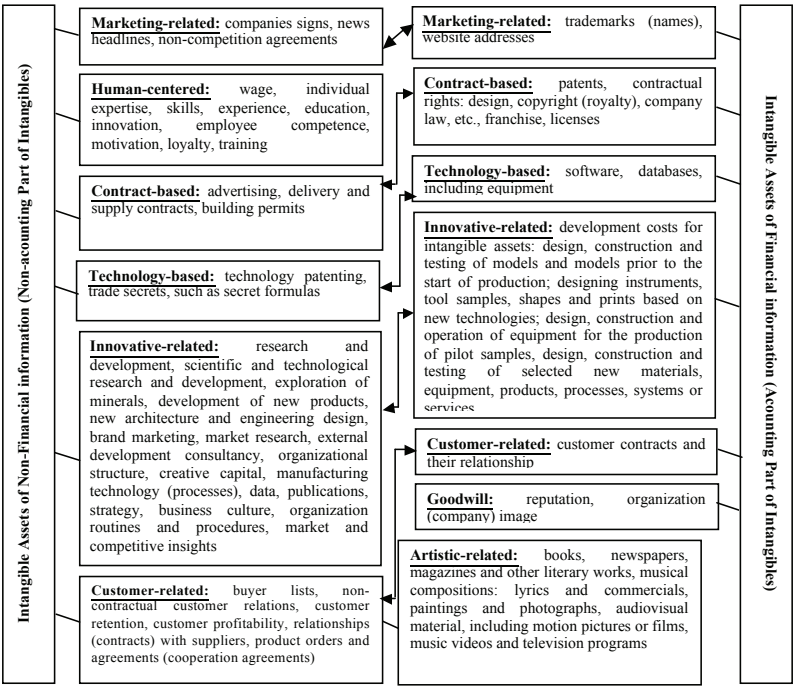

Figure 4. Classification of the general intangible assets

Stage 3. Determination of the value of intangible assets of financial information. In calculating the value of financial information intangible assets, it was chosen to adapt the historical pricing system. Researchers, using empirical evidence to determine the impact of an intangible asset on the market value of companies, most often used the balance-sheet value at the end of the year. The carrying amount is the cost of acquisition of the intangible asset during the period, which is reduced by writing off, liquidation or sale of assets and amortization amount. The value of financial information intangible asset that is used in the company's operations during the accounting year is higher and the carrying amount at the end of the year reflects the reduced value of the asset. In the opinion of the author, the amortization amount represents the part of the value of the intangible assets that was used during the accounting year, which determined the market value of the company. It is proposed to calculate the value of intangible assets of financial information in the following sequence:

$$FINT_{it} = NTBV_{it} + NTA_{it} \qquad (1)$$

$FINT_{it}$ – the value of intangible assets of financial information of the company at the accounting year, Eur; $NTBV_{it}$ – the balance value of intangible assets of the company at the end of the accounting year, Eur; NTA_{it} – the value of amortization of intangible assets of the company at the accounting year, Eur.

Stage 4. Determination of the value of intangible assets of non-financial information. The financial method of intangible assets measurement is taked to calculate the value of intangible assets of non – financial information (*FiMIAM*) (I. Rodov, Ph. Leliaert, 2002). This method is chosen for the following reasons: *1. The structure of the method and the logic of its application are clear; 2. All intangible assets are valued at the monetary unit of measurement; 3. The results are compared with each other.* This method consists of 6 steps:

Step 1. When seeking to identify the value of non-financial information of intangible assets in monetary terms, the author proposes a market value (RV) and equity relative index (NK) supplement with the financial information of intangible asset index (FINT). The value of financial information of intangible asset shows the part of the assets recorded, but it includes the historical price, which varies from time to time on the market. In the absence of an active asset market, it would be difficult to accurately determine the value of non-financial information assets. The proposed relative index allows disclosure of the value of non-financial information on an intangible asset at market value, in other words, it shows the value of an intangible asset that has not been recognized on the market:

$$NINT_{it} = \frac{RV_{it}}{NK_{it}} \times FINT_{it} \qquad (2)$$

$NINT_{it}$– the value of intangible assets of non- financial information of the company at the accounting year, Eur; RV_{it} –the market value of the company at the accounting year, Eur; NK_{it} – the value of owners equityof the company at the accounting year, Eur; $FINT_{it}$ – the value of intangible assets of financial information of the company at the accounting year, Eur.

Step 2. In accordance with the second step of the method, the quantitative content analysis method was chosen to identify the intangible assets of the non-financial information (Table 2).

Table 2. **Method of quantitative content analysis**

Steps	Indicator	Description
1	The research sample and period	Financial statements, annual reports, additional information for investors of 18 companies. Research period - 2009-2015
2	The object of research of intangible assets of the non – financial information	Elements for the 7 intangible assets, consisting of 46 sub-elements : a) Marketing related – 3; b) Human centered – 10; c) Contract based – 3; d) Technology based – 2; e) Innovative related – 17; f) Customer related – 6; g) Artistic related – 5
3	The units of measurements	1. Text information tools: sentences, phrases, messages and other text; 2. Visual media tools: paintings, graphs, charts and others
4	The scale of assessment of intangible assets of the non – financial information	Nominal scale (qualitative data classification) selected for the assessment of variables: 0 - neutral / none; 1 - not very important / is; 2 - significant / is; 3 - very significant / continuously improved and developed
5	The coding system of elements of intangible assets of the non – financial information	According to the coding system of intangibles assets of non-financial information identify elements of assets that have been assigned the appropriate scores (in step 4)

Step 3. Based on the third step of the FiMIAM method the weight assigned to the element of intangible assets of the non-financial information is calculated and expressed as a percentage:

$$\sum X_{it} = a_1 + a_2 .....a_n; \ \sum n_{it} = X_1 + X_2 .....X_n;$$

$$NINTE_{it} = \frac{\sum X_{it}}{\sum n_{it}} \times 100\% \qquad (3)$$

$NINTE_{it}$– the number of elements of the intangible assets of non-financial information at the accouting year, %

$\sum X_{it}$ – *the total amount of the unit of elements of the company at the accouting yeas;* $a_1 + a_2 ..... a_n$ *– the number of the unit of sub-elements of the company at the accouting year;* $X_1 + X_2 ..... X_n$ *– the number of the unit of elements of the company at the accouting year;* $\sum n_{it}$ *– the total amount of elements at the accouting year.*

Step 4. In the dissertation the coding system is based on existing types of the intangible assets of non-financial information by the company. The planned data isn't included in the contents of the intangible assets of non-financial information during the time of research. It is suggested to calculate the results obtained according to the assessment scale developed by IL Janis and RH Fadner (1965): *f = significant number of units; u = insignificant number unit; r = important number of units = u + f + neutral number unit; t = total number of units = r + unimportant number of units*. Based on the stated calculation logic, the system of points of the intangible assets of non-financial information, which is evaluated on a scale from 0 to 3 is compiled.

Step 5. Designed to calculate the intangible assets of non-financial information:

$$NINTEV_{it} = NINT_{it} \times NINTE_{it} \qquad (4)$$

$NINTEV_{it}$– the value of elements of the intangible assets of non-financial information at the accounting year, Eur; $NINT_{it}$ – the value of elements of the intangible assets of non-financial information of the company at the accounting year, Eur; $NINTE_{it}$ – the number of elements of the intangible assets of non-financial information at the accouting year, %.

Step 6 (Stage 5). Calculation of the value of general intangible assets. The fifth study stage of the theoretical model includes the sixth step of the method, which specifies the calculation sequence for the value of general intangible assets:

$$BNT_{it} = NINT_{it} + FINT_{it} \qquad (5)$$

BNT_{it}– the value of general intangible assets of the company at the accounting year, Eur; $NINT_{it}$ – the value of elements of the intangible assets of non-financial information of the company at the accounting year, Eur; $FINT_{it}$– the value of intangible assets of financial information of the company at the accounting year, Eur.

The value of value of general intangible assets BNT_{it} consists from two parts of assets: financial and non – financial information. The value of general intangible assets are calculated using different methods of evaluation. This value are calculated adding the value of the intangible assets of financial information *FINT* to value of the intangible assets of non – financial information $NINT_{it}$. The

value of general intangible assets is defined as the fair value of intangible assets (24 GAP, 2014).

Stage 6. Determining additional variables. The sixth stage of the research involves the identification of additional variables. Three criterion have been taken into account in choosing additional variables: *1. The correlation of additional variables; 2. The interplay between additional variables and the value of intangible assets; 3. The correlation and interplay of additional variables and market value* (Table 3).

Table 3. **Selection of additional variables**

No	Variables	Research authors
1.	Net profit (loss)	W. Bottaro De Lima Castro, C. Benetti, 2013; M. Behname, M. Reza Pajoohi, M. Ghahramanizady, 2012; N. Salamudin, R. Bakar, M. K. Ibrahim, F. H. Hassan, 2010; Z. A. Shukor, M. K. Ibrahim, J. Kaur, H. Md Nor, 2009
2.	Turnover	Maha Ben Tanfous, 2013
3.	Tangible assets	Z. A. Shukor, M. K. Ibrahim, J. Kaur, H. Md Nor, 2009; D. Volkov, T. Garanina, 2007
4.	Short-term debt (working capital)	Maha Ben Tanfous, 2013; A. Hidayati, Z. Fanani, K. Prasetyo, A. W. Mardijuwono, 2011; N. Salamudin, R. Bakar, M. K. Ibrahim, F. H. Hassan, 2010; Z. A. Shukor, M. K. Ibrahim, J. Kaur, H. Md Nor, 2009
5.	Long-term debt	Maha Ben Tanfous, 2013; A. Hidayati, Z. Fanani, K. Prasetyo, A. W. Mardijuwono, 2011; N. Salamudin, R. Bakar, M. K. Ibrahim, F. H. Hassan, 2010; Z. A. Shukor, M. K. Ibrahim, J. Kaur, H. Md Nor, 2009

It can be noted that the most popular and commonly used factors are *net profit (loss)* and *debt ratios*. Net profit (loss) is a fundamental variable that represents the return on investment. This indicator is of particular interest to investors, because investment depends on the profits earned by the company. *Debt rates* reveal the company's debt level and indicate the need for own and borrowed funds. *Working capital* reflects short-term solvency problems in the company. If this indicator is less than 1, then the company is forced to borrow because of lack of working capital from its core business. Long-term debt and working capital are indicators that reflect the excess or lack of borrowed funds of the company and allow us to formulate a rational structure of financing sources. The researchers, who distinguish *the working capital* as a variable, base their opinion on the fact that a company which has issued a shareholding usually plans a lower turnover growth, which determines the value of the company in the market. The inclusion of *tangible assets* in the exposure model is based on the fact that companies still believe that intangible assets are not a factor in market success, and therefore prefer to invest in tangible assets and its market presence is evident.

Stage 7. Creation of the models of impact. Methods of analysis of panel data are applied for assessment of the impact of intangible assets on market value of companies: First differencing method (FD) and Fixed effects method (FE) (Table 4).

Table 4. **Description of the variables for the analysis of the impact of intangible assets on the market value of companies**

Notation of variable	Method of Indicator	
mktval	*Market value = market price per share of the financial year end x number of shares at year-end*	Dependent variable
intass_finfo	*Intangible assets of financial information = carrying amount of intangible assets of the financial year end + amortization of the reference year*	Independent variable
intass_nonfinfo	*Intangible assets of non-financial information = (Market value / equity capital) x Intangible assets of financial information*	
santykinis atotrukis	*Gap of ratio = (intass_finfo / intass_nonfinfo) x ld_ intass_finfo*	
tot_intass	*Value of general intangible assets = Intangible assets of financial information + Intangible assets of non-financial information*	
PNTE	*Intangibles of primary elements = Inovative-related + Human-centered +Ccustomer-related*	
ANTE	*Intangibles of secondary elements = Market-related + Contract-based + Technology-based + Goodwill + Artistic-related*	
net_prof	*Net profit (loss) = in the year accumulated net profit*	Control variables
turnover	*Turnover = total annual net turnover*	
tass	*Carrying amount of the tangible assets of the financial year end*	
working_cap	*Working capital = current assets - current liabilities*	
lt_debt	*Long term-debt (bank, financial leasing, leasing & factoring, suppliers and etc.)*	

Based on the formulated hypotheses of the research, seven econometric models were created. The hypotheses of the research are empirically verified using the GRETL statistical program. The first econometric model *(Model1)* was developed for testing the first hypothesis of the research *(H1*).

First differencing method:

$$\Delta ln(mktval_{i,t})=\alpha+\delta_3 td2011_t+\ldots+\delta_6 td2015_t+\beta_1\cdot\Delta ln(intass\_finfo_{i,t})+\beta_2\cdot\Delta ln(intass\_nonfinfo_{i,t})+c_1\cdot\Delta(net\_prof_{i,t})+c_2\cdot\Delta lnb(turnover_{i,t})+c_3\cdot\Delta ln(tass_{i,t})+c_4\cdot\Delta(working\_cap_{i,t})+c_5\cdot\Delta ln(lt\_debt_{i,t})+\Delta u_{i,t} \quad (6)$$

Fixed effects method:

$$ln(mktval_{i,t})=\alpha+\delta_2 td2010_t+\ldots+\delta_6 td2015_t+\beta_1\cdot ln(intass\_finfo_{i,t})+\beta_2\cdot ln(intass\_nonfinfo_{i,t})+c_1\cdot(net\_prof_{i,t})+c_2\cdot ln(turnover_{i,t})+c_3\cdot ln(tass_{i,t})+c_4\cdot(working\_cap_{i,t})+c_5\cdot ln(lt\_debt_{i,t})+u_{i,t} \quad (7)$$

***H1* is confirmed, if $\hat{\beta}_1$ and $\hat{\beta}_2 > 0$, and $\hat{\beta}_1 < \hat{\beta}_2$**

To test the second hypothesis of the research *(H2)*, a second econometric model *(Model2)* was created.

First differencing method:

$$\Delta ln(mktval_{i,t})=\alpha+\delta_3 td2011_t+\ldots+\delta_6 td2015_t+\beta_1\cdot\Delta ln(intass\_finfo_{i,t})+\beta_{1S}\cdot\Delta ln(intass\_finfo_{i,t})\cdot(santykinisatotrūkis)+\beta_2\cdot\Delta ln(intass\_nonfinfo_{i,t})+c_1\cdot\Delta(net\_prof_{i,t})+c_2\cdot\Delta ln(turnover_{i,t})+c_3\cdot\Delta ln(tass_{i,t})+c_4\cdot\Delta(working\_cap_{i,t})+c_5\cdot\Delta ln(lt\_debt_{i,t})+\Delta u_{i,t} \quad (8)$$

Fixed effects method:

$$\Delta ln(mktval_{i,t})=\alpha+\delta_3 td2010_t+\ldots+\delta_6 td2015_t+\beta_1\cdot ln(intass\_finfo_{i,t})+\beta_{1S}\cdot ln(intass\_finfo_{i,t})\cdot(santykinisatotrūkis)+\beta_2\cdot ln(intass\_nonfinfo_{i,t})+c_1\cdot(net\_prof_{i,t})+c_2\cdot ln(turnover_{i,t})+c_3\cdot ln(tass_{i,t})+c_4\cdot(working\_cap_{i,t})+c_5\cdot ln\,(lt\_debt_{i,t})+u_{i,t} \quad (9)$$

***H2* is confirmed, if $\hat{\beta}_{is} > 0$**

To test the third hypothesis of the research *(H3)*, a third econometric model *(Model3)* was created.

First differencing method:

$$\Delta ln(mktval_{i,t})=\alpha+\delta_3 td2011_t+\ldots+\delta_6 td2015_t+\beta_{1\cdot(manuf\_sec)}\cdot\Delta ln(intass\_finfo_{i,t})+\beta_{1\cdot(serv\_sec)}\cdot\Delta ln(intass\_finfo_{i,t})serv\_sec+\beta_{2\cdot(manuf\_sec)}\cdot\Delta ln(intass\_nonfinfo_{i,t})+\beta_{2\cdot(serv\_sec)}\cdot\Delta ln(intass\_nonfinfo_{i,t})serv\_sec+c_1\cdot\Delta(net\_prof_{i,t})+c_2\cdot\Delta ln(turnover_{i,t})+c_3\cdot\Delta ln\,(tass_{i,t})+c_4\cdot\Delta(working\_cap_{i,t})+c_5\cdot\Delta ln(lt\_debt_{i,t})+\Delta u_{i,t} \quad (10)$$

Fixed effects method:

$$ln(mktval_{i,t})=\alpha+\delta_2 td2010_t+\ldots+\delta_6 td2015_t+\beta_{1\cdot(manuf\_sec)}\cdot ln(intass\_finfo_{i,t})+\beta_{1\cdot(serv\_sec)}\cdot ln(intass\_finfo_{i,t})\,serv\_sec+\beta_{2\cdot(manuf\_sec)}\cdot ln(intass\_nonfinfo_{i,t})+\beta_{2\cdot(serv\_sec)}\cdot ln(intass\_nonfinfo_{i,t})\,serv\_sec+c_1\cdot(net\_prof_{i,t})+c_2\cdot ln\,(turnover_{i,t})+c_3\cdot ln(tass_{i,t})+c_4\cdot(working\_cap_{i,t})+c_5\cdot ln(lt\_debt_{i,t})+u_{i,t} \quad (11)$$

***H3* is confirmed, if $\hat{\beta}_{1\cdot(manuf\_sec)} > 0$, and $\hat{\beta}_{1\cdot(serv\_sec)} < 0$, but $(\hat{\beta}_{1\cdot(manuf\_sec)} + \hat{\beta}_{1\cdot(serv\_sec)}) > 0$ and $\hat{\beta}_{2\cdot(manuf\_sec)} > 0$, and $\hat{\beta}_{2\cdot(serv\_sec)} < 0$, but $(\hat{\beta}_{2\cdot(manuf\_sec)} + \hat{\beta}_{2\cdot(serv\_sec)}) > 0$**

To test the fourth hypothesis of the research *(H4)*, the fourth econometric model *(Model4)* was created.

First differencing method:

$$\Delta ln(mktval_{i,t})=\alpha+\delta_3 td2011_t+\ldots+\delta_6 td2015_t+\beta_3\cdot\Delta ln(tot\_intass_{i,t})+c_1\cdot\Delta(net\_prof_{i,t})+c_2\cdot\Delta ln(turnover_{i,t}+c_3\cdot\Delta ln(tass_{i,t})+c_4\cdot\Delta(working\_cap_{i,t})+c_5\cdot\Delta ln(lt\_debt_{i,t})+\Delta u_{i,t} \quad (12)$$

Fixed effects method:

$$ln(mktval_{i,t})=\alpha+\delta_2 td2010_t+\ldots+\delta_6 td2015_t+\beta_3 \cdot ln(tot\_intass_{i,t})+c_1 \cdot (net\_prof_{i,t})+ c_2 \cdot ln(turnover_{i,t})+c_3 \cdot ln\ (tass_t)+c_4 \cdot (working\ \_cap_{i,t})+ c_5 \cdot ln(lt\_debt_{i,t})+u_{i,t} \quad (13)$$

***H4* is confirmed, if** $\hat{\beta}_3 > 0$

To test the fifth hypothesis of the research *(H5)*, the fifth econometric model *(Model5)* was created.

First differencing method:

$$\Delta ln(mktval_{i,t})=\alpha+\delta_3 td2011_t+\ldots+\delta_6 td2015_t+\beta_{3 \cdot (manuf\_sec)} \cdot \Delta ln(tot\_intass_{i,t})+ \beta_{3 \cdot (serv\_sec)} \cdot \Delta ln(tot\_intass_{i,t}) serv\_sec+c_1 \cdot \Delta (net\_prof_{i,t})+c_2 \cdot \Delta ln(turnover_{i,t})+ c_3 \cdot \Delta ln(tass_{i,t})+c_4 \cdot \Delta (working\_cap_{i,t})+c_5 \cdot \Delta ln(lt\_debt_{i,t})+\Delta u_{i,t} \quad (14)$$

Fixed effects method:

$$ln(mktval_{i,t})=\alpha+\delta_2 td2010_t+\ldots+\delta_6 td2015_t+\beta_{3 \cdot (manuf\_sec)} \cdot ln(tot\_intass_{i,t})+ \beta_{3 \cdot (serv\_sec)} \cdot ln(tot\_intass_{i,t}) serv\_sec+c_1 \cdot (net\_prof_{i,t})+c_2 \cdot ln(turnover_{i,t})+c_3 \cdot ln(tass_{i,t})+ c_4 \cdot (working\_cap_{i,t})+c_5 \cdot ln(lt\_debt_{i,t})+u_{i,t} \quad (15)$$

***H5* is confirmed, if** $\hat{\beta}_{3 \cdot (manuf\_sec)} > 0$, **and** $\hat{\beta}_{3 \cdot (serv\_sec)} < 0$, **but**

$$(\hat{\beta}_{3 \cdot (manuf\_sec)} + \hat{\beta}_{3 \cdot (serv\_sec)}) > 0$$

To test the sixth hypothesis of the research *(H6)*, the sixth econometric model *(Model6)* was created.

First differencing method:

$$\Delta ln(mktval_{i,t})=\alpha+\delta_3 td2011_t+\ldots+\delta_6 td2015_t+\beta_5 \cdot \Delta ln(PNTE_{i,t})+\beta_6 \cdot \Delta ln(ANTE_{i,t})+ c_1 \cdot \Delta (net\_prof_{i,t})+c_2 \cdot \Delta ln(turnover_{i,t})+c_3 \cdot \Delta ln(tass_{i,t})+c_4 \cdot \Delta (working\_cap_{i,t})+ c_5 \cdot \Delta ln(lt\_debt_{i,t})+\Delta u_{i,t} \quad (16)$$

Fixed effects method:

$$ln(mktval_{i,t})=\alpha+\delta_2 td2010_t+\ldots+\delta_6 td2015_t+\beta_5 \cdot ln(PNTE_{i,t})+\beta_6 \cdot ln(ANTE_{i,t})+c_1 \cdot (net\_prof_{i,t})+ c_2 \cdot ln(turnover_{i,t})+c_3 \cdot ln(tass_{i,t})+c_4 \cdot (working\_cap_{i,t})+c_5 \cdot ln(lt\_debt_{i,t})+u_{i,t} \quad (17)$$

***H6* is confirmed, if** $\hat{\beta}_5$ **and** $\hat{\beta}_6 > 0$, **and** $\hat{\beta}_5 > \hat{\beta}_6$

To test the seventh hypothesis of the research *(H7)*, the seventh econometric model *(Model7)* was created.

First differencing method:

$$\Delta ln(mktval_{i,t})=\alpha+\delta_3 td2011_t+\ldots+\delta_6 td2015_t+\beta_{5 \cdot (manuf\_sec)} \cdot \Delta ln(PNTE_{i,t})+ \beta_{5 \cdot (serv\_sec)} \cdot \Delta ln(PNTE_{i,t}) serv\_sec+\beta_{6 \cdot (manuf\_sec)} \cdot \Delta ln(ANTE_{i,t})+\beta_{6 \cdot (serv\_sec)} \cdot \Delta ln(ANTE_{i,t}) serv\_sec+ c_1 \cdot \Delta (net\_prof_{i,t})+c_2 \cdot \Delta ln(turnover_{i,t})+c_3 \cdot \Delta ln(tass_{i,t})+c_4 \cdot \Delta (working\_cap_{i,t})+ c_5 \cdot \Delta ln(lt\_debt_{i,t})+\Delta u_{i,t} \quad (18)$$

Fixed effects method:

$$ln(mktval_{i,t})=\alpha+ \delta_2 td2010_t+\ldots+\delta_6 td2015_t+\beta_{5 \cdot (manuf\_sec)} \cdot ln(PNTE_{i,t})+\beta_{5 \cdot (serv\_sec)} \cdot ln(PNTE_{i,t}) serv\_sec+ \beta_{6 \cdot (manuf\_sec)} \cdot ln\ (ANTE_{i,t})+ \beta_{6 \cdot (serv\_sec)} \cdot ln(ANTE_{i,t})\ serv\_sec+c_1 \cdot (net\_prof_{i,t}) + c_2 \cdot ln\ (turnover_{i,t})+ c_3 \cdot ln(tass_{i,t}) +c_4 \cdot (working\_ cap_{i,t})+c_5 \cdot ln(lt\_debt_{i,t})+u_{i,t} \quad (19)$$

***H7* is confirmed, if** $\hat{\beta}_{5\cdot(manuf\_sec)} > 0,$ **and** $\hat{\beta}_{5\cdot(serv\_sec)} < 0$, **but**

$(\hat{\beta}_{5\cdot(manuf\_sec)} + \hat{\beta}_{5\cdot(serv\_sec)}) > 0$ **and** $\hat{\beta}_{6\cdot(manuf\_sec)} > 0,$ o $\hat{\beta}_{6\cdot(serv\_sec)} < 0$, **but**

$(\hat{\beta}_{6\cdot(manuf\_sec)} + \hat{\beta}_{6\cdot(serv\_sec)}) > 0$

The explanations of mathematical model form: α – *constant;* δ_3 *td;* δ_4 *td;* δ_5 *td;* δ_6 *td* – *time variables representative reference period;* β_1 *- the impact of intangible assets of financial information on the market value of companies;* β_2 *- the impact of intangible assets of non-financial information on the market value of companies;* c_1, c_2, c_3, c_4, c_5 *– depended and independed variables(except negatives) interpreted as coefficient of elasticity because they are logarithm;* $\beta_{1(manuf\_sec)}$ *– the impact of intangible assets of financial information on the market value of manufacturing companies;* $\beta_{1(serv\_sec)}$ *– the difference of impact of intangible assets of financial information between manufacturing and services companies;* $\beta_{2(manuf\_sec)}$ *– the impact of intangible assets of non-financial information on the market value of manufacturing companies;* $\beta_{2(serv\_sec)}$ *– the difference of impact of intangible assets of non-financial information between manufacturing and services companies;* β_3 *- the impact of value of general intangible assets on the market value of companies ;* $\beta_{3(manuf\_sec)}$ *– the impact of value of general intangible assets on the market value of manufacturing companies;* $\beta_{3(serv\_sec)}$ *– the impact of value of general intangible assets on the market value of service companies;* $\beta_{3(manuf\_sec)}$ *– the impact of value of general intangible assets on the market value of manufacturing companies;* $\beta_{3(serv\_sec)}$ *– the difference of impact of value of general intangible assets between manufacturing and services companies;* B_5 *– the impact of intangible assets of primary elements on the market value of companies;* B_6 *– the impact of intangible assets of secondary elements on the market value of companies;*$B_{5(manuf\_sec)}$ *– the impact of intangible assets of primary elements on the market value of manufacturing companies;* $B_{5(serv\_sec)}$ *– the difference of impact of intangible assets of primary elements between manufacturing and services companies;* $B_{6(manuf\_sec)}$ *– the impact of intangible assets of secondary elements on the market value of manufacturing companies;* $B_{6(serv\_sec)}$ *– the difference of impact of intangible assets of secondary elements between manufacturing and services companies;*

RESEARCH OF THE IMPACT OF INTANGIBLE ASSETS ON THE MARKET VALUE OF COMPANIES

The third part of the dissertation evaluates the appropriateness of the conceptual model for measuring the impact of an intangible asset on the market value of companies. Most of the research, described in the first part of the dissertation, focuses on assessing the impact of an intangible asset on the market value of companies. In the author's opinion, the researchers have paid too little attention to analyzing the classification and valuation of intangible assets. Based on the analysis of intangible assets, the elements of recognition of assets were disclosed, which revealed the peculiarities of the structure and value of the intangible assets of financial and non-financial information of Lithuanian companies. According to the results of research, the most companies of Lithuania the value of intangible assets of financial information consists elements are related to intangibles of technology-based, contract based and other assets. This includes the most part of intangible assets of financial information in the companies of Lithuanian. A little less are recorded marketing-related, customer-related and goodwill. As expected, assets of innovative - related are recognized and accounted in the balance sheet for very ragely (Table 5).

Table 5. The intangible assets of financial information of Lithuanian companies according to the elements for 2009–2015, thsd. eur

Companies	Marketing – related		Human-centered		Technology-based		Innovative-related		Customer-related		Goodwill		Other assets	
	2009	2015	2009	2015	2009	2015	2009	2015	2009	2015	2009	2015	2009	2015
Telia Lietuva	0,0	0,0	4651	1577	7291	8172	0,0	0,0	0,0	0,0	1505	3137	527	3711
Lietuvos dujos	0,0	0,0	735	468	705	422	0,0	0,0	0,0	0,0	0,0	0,0	1708	686
Lesto	0,0	0,0	0,0	42	3167	3115	0,0	0,0	0,0	0,0	0,0	0,0	15	245
Lietuvos energija	0,0	0,0	10588	16438	968	523	0,0	0,0	0,0	0,0	0,0	0,0	39	17
City Service	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	16540	1086	10943	9304	608	3911
Klaipėdos nafta	0,0	0,0	0,0	0,0	45	1107	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Invalda INVL	0,0	0,0	0,0	4226	190	36	0,0	0,0	2845	0,0	0,0	90	25	0
Šiaulių bankas	0,0	0,0	0,0	0,0	294	1296	0,0	0,0	0,0	0,0	0,0	2752	0,0	0,0
Kauno energija	0,0	0,0	0,0	148	93	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	1245
Vilniaus degtinė	5752	2654	12	0,0	167	172	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Pieno žvaigždės	0,0	0,0	0,0	0,0	241	116	0,0	0,0	0,0	0,0	97	0,0	1011	0,0
Rokiškio sūris	0,0	0,0	0,0	0,0	123	21	0,0	0,0	611	0,0	0,0	0,0	0,0	0,0
Panevėžio statybos trestas	0,0	0,0	0,0	0,0	89	122	0,0	0,0	0,0	0,0	35	31	6	32
Dvarčionių keramika	0,0	1850	0,0	0,0	16	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Vilniaus baldai	0,0	0,0	0,0	0,0	133	41	0,0	0,0	0,0	0,0	0,0	0,0	188	118
Snaigė	0,0	0,0	0,0	0,0	46	121	1652	1854	0,0	0,0	0,0	0,0	2352	0,0
Grigeo Grigiškės	0,0	0,0	659	639	55	2345	0,0	0,0	0,0	0,0	0,0	0,0	0,58	240
Apranga	0,0	0,0	213	323	310	360	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

Note: 0,0 – is no assets.

The results of the research show, that it isn‘t complicated to adapt the main criteria for recognizing intangible assets: economic benefits, value and control (International accounting standard, 38 (IAS 38), when it comes to accounting for elements of technology, contract and other assets. The application of the general accounting standards (GAS) in practice is quite complicated when it comes to accounting for elements of marketing, customer and innovative assets. Goodwill is only recorded when there is a transaction between companies: the price paid by the buyers for the shares of the company exceeds the value of the acquired net assets of the company (National Accounting Standard, 14 (NAS 14, 2013)).

The disclosure of components of the intangible assets of financial information (FINT) of companies in Lithuania contains detailed analysis of the sub-elements of this assets (Figure 5). Most of FINT structures consisted of subelements related to the acquisition of software, the implementation of unfinished projects, assets that were fully amortized but still used in the company’s activities, corporate rights, patents, licenses, reputations, etc. One of the most important elements of the property is the goodwill. The value of goodwill as assets depends on transactions between companies, their mergers and acquisitions. Practical experience in business, reputation, image, clients, brands, etc., acquired by other companies, also plays an important position in FINT structure. Another important asset element is the customer-related asset. This type of asset increased the volume of FINT when contracts were concluded with customers and suppliers of Lithuanian or foreign companies. The smallest part of this asset was made up of marketing and innovative assets. Trademarks, company names, development costs are resources that relate to the company’s ability to exploit the growth potential of the market.

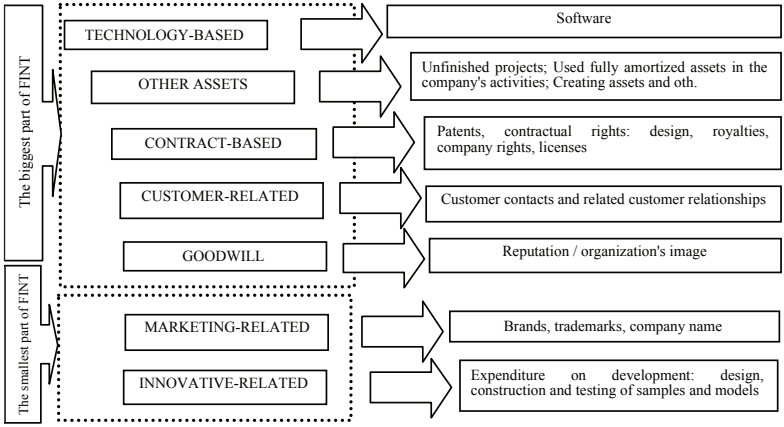

Figure 5. Sub-elements of the intangible assets of financial information of companies

Based on the fourth stage of the research methodology, the determined value of the intangible assets of non – financial information and applied a financial method of intangible assets measurement (FiMIAM) (Table 6).

Table 6. **The intangible assets of non-financial information of Lithuanian companies according to the elements for 2009–2015, thsd. eur**

Companies	Marketing - related		Human-centered		Contract-based		Technology-based		Innovative-related		Customer - related		Artistic - related	
	2009	2015	2009	2015	2009	2015	2009	2015	2009	2015	2009	2015	2009	2015
Telia Lietuva	0,0	2601	4511	7804	0,0	0,0	0,0	0,0	11277	18208	4511	13006	0,0	0,0
Lietuvos dujos	0,0	0,0	0,0	0,0	87	0,0	0,0	0,0	479	415	479	553	0,0	0,0
Lesto	59,6	0,0	477	1365	60	227	36	0,0	418	2047	179	1137	60	0,0
Lietuvos energija	917	0,0	2619	9835	0,0	0,0	0,0	0,0	2619	6772	437	1229	0,0	0,0
City Service	2658	0,0	13291	2347	2658	1173	2658	0,0	15949	5867	10633	1173	0,0	0,0
Klaipėdos nafta	0,0	0,0	10	251	3	108	3	0,0	6	287	10	144	0,0	0,0
Invalda INVL	0,0	0,0	747	1327	373	332	0,0	332	933	995	560	332	0,0	0,0
Šiaulių bankas	0,0	138	109	1107	0,0	0,0	0,0	0,0	62	969	62	554	0,0	0,0
Kauno energija	0,0	0,0	12	46	2	9	0,0	0,0	14	64	9	37	0,0	0,0
Vilniaus degtinė	155	105	1475	630	738	105	0,0	0,0	738	734	328	210	0,0	0,0
Pieno žvaigždės	0,0	19	627	58	209	19	208	20	418	96	0,0	19	0,0	0,0
Rokiškio sūris	26	0,4	129	2	26	0,0	0,0	0,0	231	5	77	2	0,0	0,0
Panevėžio statybos trestas	0,0	0,0	29	28	7	5	0,0	0,0	29	28	15	14	0,0	0,0
Dvarčionių keramika	0,0	0,0	5	72	1	48	0,0	0,0	6	72	1	24	0,0	0,0
Vilniaus baldai	0,0	0,0	68	250	0,0	0,0	23	0,0	114	374	45	125	0,0	0,0
Snaigė	105	151	526	754	104	149	104	150	631	905	210	452	0,0	0,0
Grigeo Grigiškės	0,0	0,0	363	577	121	192	0,0	0,0	726	962	484	385	0,0	0,0
Apranga	0,0	0,0	532	331	530	330	0,0	0,0	1329	828	266	497	0,0	0,0

Note: 0,0 – is no assets.

The most value of the intangible assets of non-financial information has been elements that include innovative-related, human-centered and customer-related assets. Companies less had technology-based, contract-based and marketing-related assets. Artistic-related assets is only found in one company (Lesto). Comparing the data of the beginning of 2009 and the end of 2015, it can be seen that the value of intangible assets of non-financial information is distributed unevenly in Lithuanian companies. As shown in Figure 6 analysis, the sub-elements of the human-centered are distinguished from the whole. These assets include sub-elements that are based on the relationship between the employee and the company. Wages, education, experience, motivation, competence – is the resources on which the company‘s prosperity and future depend. Innovative assets relate to: 1) the development, updating and upgrading of new products; 2) development of creative capital, modernization of technological processes; 3) strengthening competitiveness; 4) the growth of the company‘s value, etc. This type of asset consisted of the following main sub-elements: creative capital, organizational structure of business, strategy, market and competitiveness

insights, the growth of which is associated with the implementation of innovative processes. However, research and development and research / development activities included a small proportion of innovative assets. The customer retention sub-element dominated the customer-related asset. Non-contractual customer relations, relations with suppliers, production orders and agreements constituted a smaller part of intangible assets of non-financial information. The value of advertisements was highlighted in the contract-based asset and this sub-element remained at a similar level throughout the period under investigation.

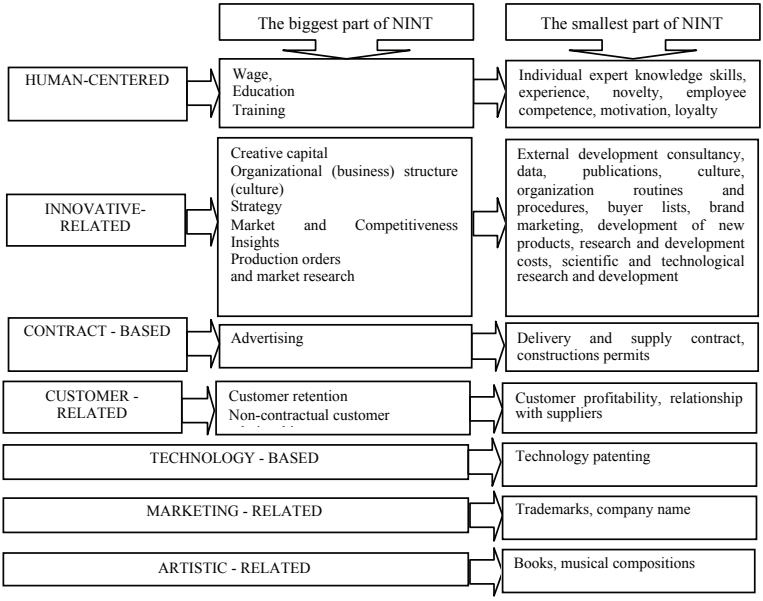

Figure 6. Sub-elements of the intangible assets of non-financial information of companies

Technology patents most distinguished in the technology-based assets. Trademarks dominated in the marketing-related assets. The smallest part of intangible assets of non-financial information consisted of artistic assets – books and music.

The value of general intangible assets (in the fifth stage of the research methodology) combines the values of intangible assets of financial and non-financial. The analysis shows that the biggest gap between the value of intangible assets of financial and non-financial information was in the companies, which carried out the service activities: Telia Lietuva, City Service, Invalda INVL, Apranga and others (Table 7).

Table 7. **The value of general intangible assets in the Lithuanian companies for 2009-2015, million, eur**

Companies	2009		2010		2011		2012		2013		2014		2015	
	NINT	FINT	NINT	FINT	NINT	FINT	NINT	FINT	NINT	FINT	NINT	FINT	NINT	FINT
Telia Lietuva	20,3	14,0	32,5	17,3	23,6	15,3	29,0	14,7	34,1	17,2	37,6	15,6	41,6	16,6
Lietuvos dujos	1,6	3,1	1,8	3,2	1,2	2,6	0,9	2,0	2,1	1,8	1,8	1,6	ND	ND
Lesto	1,3	3,2	0,9	1,8	0,7	2,2	1,0	2,7	1,7	3,5	4,8	3,4	ND	ND
Lietuvos energijos gamyba	ND	ND	ND	ND	5,7	11,6	11,0	17,6	5,6	9,2	14,5	11,0	20,9	17,0
City Service	47,8	28,1	80,6	41,4	53,2	44,2	40,0	36,4	25,3	27,1	22,1	27,1	10,6	14,3
Klaipėdos nafta	0,03	0,0	0,2	0,2	0,2	0,2	0,4	0,5	0,3	0,5	0,5	0,7	0,8	1,1
Vilniaus degtinė	ND	ND	3,0	5,9	2,0	3,8	2,0	3,5	3,3	3,2	2,6	3,0	1,8	2,8
Pieno žvaigždės	1,5	1,3	2,9	1,5	2,5	1,2	3,0	1,5	2,3	1,0	1,8	0,9	0,2	0,1
Panevėžio statybos trestas	0,1	0,1	0,1	0,1	0,0	0,1	0,1	0,1	0,1	0,2	0,1	0,2	0,1	0,2
Dvarčionių keramika	0,01	0,02	0,001	0,006	0	0,001	0	0,001	0	0,001	0	0	0,2	1,9
Vilniaus baldai	0,3	0,3	0,3	0,2	0,2	0,1	0,1	0,1	0,6	0,2	1,1	0,2	0,7	0,2
Snaigė	1,7	4,1	2,8	4,0	8,1	4,0	7,5	4,2	7,9	4,1	8,6	4,7	2,6	2,0
Invalda INVL	2,6	3,1	6,2	3,5	3,6	4,3	3,4	4,0	4,2	3,1	3,1	3,8	3,6	4,4
Šiaulių bankas	0,2	0,3	0,2	0,2	0,2	0,3	0,3	0,4	0,4	0,5	2,3	3,5	2,8	4,0
Rokiškio sūris	0,5	0,7	0,2	0,2	0,3	0,4	0,2	0,4	0,2	0,4	0,2	0,3	0,01	0,02
Kauno energija	0,04	0,09	0,01	0,09	0,01	0,08	0,01	0,05	0,01	0,07	0,2	1,5	0,2	1,4
Grigeo Grigiškės	1,7	0,7	1,3	0,7	1,3	1,3	2,0	1,8	2,5	1,9	2,7	1,7	2,1	1,4
Apranga	2,7	0,5	1,7	0,4	1,0	0,3	0,4	0,2	1,3	0,5	0,7	0,8	2,0	0,7

Note: 0,0 – is no assets.

The value of NINT for most companies is significantly higher than the FINT value (FINT <NINT). This is due to the fact that the value of NINT depends on the market price, while the FINT value reflects the historical price. It goes without saying that this difference arises between historical and market prices. However, the value of NINT may increase and decrease based on the methodology for calculating this asset if the equity value significantly exceeds the market value (NK> RV). Hence, the FINT value may be greater than the NINT value (FINT> NINT). The data presented gives a general indication of the true value of the intangible asset, the disclosure of which determines the fluctuation of stock prices in the market.

RESULTS OF THE RESEARCH OF THE IMPACT OF INTANGIBLE ASSETS ON THE MARKET VALUE OF COMPANIES

The valuation of the impact of an intangible asset on a company's market value is based on a conceptual model that builds on seven scientific hypotheses. The empirical investigation was aimed at proving the validity of scientific hypotheses. Two Panel data analysis methods, first-order difference (FD) and fixed effects (FE), were applied to ensure the validity of the study. Based on these methods, seven econometric models are made. The study revealed that the models realized by the fixed effect method did not meet all the requirements for model testing, although similar results of the study were obtained comparing with the models implemented by the first-order difference method. Therefore, it was decided to use the results of the first-order difference method to formulate the findings of the research.

The study of research consisted of 18 companies which publiches an annual report on the NASDAQ OMX Baltic Stock-exchange market. The study of research covered the period 2009 – 2015 year. The study of research covered the period 2009 – 2015 year. The sample was chosen on adopt five criteria: *1. Market value; 2. Listing data; 3. Industrial type; 4. Anual financial report; 5. Financial information of intangible assets.*

Main results of the research

Model1 represents the impact of intangible assets of financial and non-financial information on market value of companies. The first differencing method (FD) estimator a Model1. This model don't indicate a collinearity problem (Values < 10, minimum posible value = 1,0), the White's test not present a standard error is the heteroskedasticity (White test $p > 0,05$), but it have problem with autocorrelation (Durbin-Watson (DW) test, $p < 0,05$). For this reason, the findings of research of Model1 was realized according to Robust standard errors (HAC) (Table 8).

Table 8. **Results of Cross-Sectional of Model 1**

Independent variables of model	Estimates of the coefficients and significance		
	FD	HAC	FE
Konstanta	0,254 ***		7,065***
td 2010			0,270***
td 2011	-0,173*		0,328***
td 2012	-0,308 ***		0,279***
td 2013	-0,338 ***		0,212**
td 2014	-0,286 ***		0,198**
td2015	-0,072		0,407***
intass_finfo	-0,682 ***	-0,682***	-0,576***
intass_nonfinfo	0,804 ***	0,804***	0,720***

Continued Table 8

net_prof	0,000003 ***		0,000003 ***
turnover	0,118		0,183***
tass	0,138		0,050
working_cap	0,0000002		0,0000004
lt_debt	0,022		0,001
n	99		119
R^2_{adj}	0,700		0,680
White test (p-value)	0,212		0,005
DW test (p-value)	0,004 ***		0,0001***

The independent variable is significant at the level *-0,1; **-0,05; ***-0,01

Results of analysis suggests that the impact of values of financial and non-financial information of intangible assets are significant on the market value of companies. However, this impact of value of intangible assets was observed in different directions. Value of financial information of intangible assets (FINT) growth of 1 percent reducing 0,682 percent the market value of companies. Value of non-financial information of intangible (NINT) assets growth of 1 percent increase 0,804 percent the market value of companies. The results of research assumed to presume that the lower value of FINT increases the market value of companies. It means that value of FINT has negative and significant impact on the market value of companies. The reason is that value of FINT measured at cost price, which reflective the historical cost. The cost price isn't competitive ir can't compete in the market. And therefore it has a negative effect on the market value of companies. On the contrary, value of NINT has a positive and significant impact on the market value of companies. Value of NINT measured at price of market and it characterizes the higher growth and effect on the market value of companies. It can be argued that investors adopt the information of accounting effectively because it is new information, which increase a quality of the information of the accounting by values of equity, income and cash flow (Kimouche, Rouabhi, 2016). According to R. R. Gamayuni (2015), the information of accounting about intangible assets can be effective when it is presented in properly and on time. The price of share of companies increase and it will increase as long as the new information of accounting will reflect the recent changes in the market of capital. The new information of accounting showes that companies have more intangible assets than it disclosed in the balanse sheet. It showed the opposite results than the most researchers was found. When they researched the impact of intangible assets on the market value of companies they included only value of FINT cost price in the base econometric model but value of FINT often different in the market. The integration value of NINT in the base econometric model revealed that value of FINT not always can have a positive and significant impact on the market value of companies. The results of Model1 confirmed the correctness of the hypothesis (H1), that value of NINT

has a stronger effect than value of FINT. W. Bottaro De Lima Castro, C. Benetti, 2013 proved the validity of the test results. They revealed that disclosure of accounting information in public about real value of intangible assets can have a positive impact in the market value of companies, so the impact of value of NINT and showed this.

The results showed, that the negative impact of value of FINT on the market value of companies can vary ± 0,148 percent at 95 percent of the probability. The positive impact of value of NINT on the market value of companies can vary ± 0,125 percent at 95 percent of the probability. Adjusted determination coefficient allows to state a significant relationship between dependent variable and independent variables. The value of these indicators explain, that value of market depends 70 percent on change of independent of variables including in the model.

In order to analyze the impact of intangible assets of financial information on the market value of companies in more detail, the second model (Model2) was applied. Model2 don‘t indicate a collinearity problem (Values < 10, minimum posible value = 1,0), the White's test not present a standard error is the heteroskedasticity (White test p > 0,05), but it have problem with autocorrelation (Durbin-Watson (DW) test, p < 0,05). For this reason, the findings of research of Model2 was realized according to Robust standard errors (HAC) (Table 9).

Table 9. **Results of Cross-Sectional of Model 2**

Independent variables of model	**Estimates of the coefficients and significance**		
	FD	**HAC**	**FE**
Konstanta	0,252 ***		7,056***
td 2010			-0,106
td 2011	-0,171 **		-0,053
td 2012	-0,302 ***		-0,100
td 2013	-0,327 ***		-0,166**
td 2014	-0,305 ***		-0,159*
td 2015	-0,086		0,473***
intass_finfo	-0,765***	-0,765***	-0,473***
santykinis atotrukis	0,028**	0,028***	-0,026**
intass_nonfinfo	0,802***	0,802***	0,675***
net_prof	0,000003***		0,000002*
turnover	0,147**		0,102
tass	-0,111		0,166*
working_cap	0,0000002		-0,0000002
lt_debt	0,015		-0,029
n	99		100
R^2_{adj}	0,712		0,652
White test (p-value)	0,864		0,003
DW test (p-value)	0,010***		0,019**

The independent variable is significant at the level *-0,1; **-0,05; ***-0,01

Model 2 revealed the expected results. The relative proportion of FINT, increased by 1%, in 95% of cases reduces the reverse effect on the market value of companies in the range of 0.028%. ± 0.019% point. The corrected coefficient of determination identifies that 71.2% market value depends on the distribution of independent variables included in the model. Consequently, the relatively higher growth of FINT value reduces the reverse effect on company's market value. The FINT impact on the market value of companies will be positive. However, it should be emphasized that, in comparison with NINT, the value of FINT should be 27 times higher, so that the reverse effect on the market value of companies would change to direct. The results of the study explain why the value of FINT, based on the results of the first model, has a reverse effect on the firm's market value and allows us to confirm that the historic price of FINT will not always have a positive impact on the market price of the stock.

Analyzing the differences of the impact of intangible assets on the market value of manufacturing and services companies, the third model was implemented (Model 3) (Table 9). Model3 don't indicate a collinearity problem (Values < 10, minimum posible value = 1,0), the White's test not present a standard error is the heteroskedasticity (White test p > 0,05), but it have problem with autocorrelation (Durbin-Watson (DW) test, p < 0,05). For this reason, the findings of research of Model3 was realized according to Robust standard errors (HAC) (Table 10).

Table 10. **Results of Cross-Sectional of Model 3**

Independent variables of model	Estimates of the coefficients and significance		
	FD	HAC	FE
Konstanta	0,275***		7,391***
td 2010			0,294***
td 2011	-0,242 ***		0,297***
td 2012	-0,312 ***		0,262***
td 2013	-0,357 ***		0,207**
td 2014	-0,285 ***		0,210**
td2015	-0,107		0,382***
intass_finfo	-0,837 ***	-0837***	-0,725***
intass_finfo serv_sec	0,462 ***	0,462**	0,459***
intass_nonfinfo	0,928 ***	0,928***	0,847***
intass_nonfinfo serv_sec	-0,409 ***	-0,409 **	-0,413***
net_prof	0,000002 **		0,000002
turnover	0,095		0,135**
tass	0,103		0,073
working_cap	0,00000008		0,0000005
lt_debt	0,009		-0,008
n	99		119
R^2_{adj}	0,730		0,717
White test (p-value)	0,856		0,006
DW test (p-value)	0,02 **		0,00007***

The independent variable is significant at the level *-0,1; **-0,05; ***-0,01

The results obtained in the research confirm the hypothesis (H3) that in manufacturing companies the impact of an intangible asset of financial and non-financial information on the market value of companies is higher than in the services sector. Although strange, this difference is statistically significant between the impact of FINT (0.462) and NINT (0.409) in manufacturing and services firms. In the manufacturing sector, the increase in the value of FINT by 1% the market value is reduced by 0.837% and in the service sector by 0.375%. When the value of NINT increased by 1%, in the manufacturing sector the market value increased by 0.928% and in the service sector by 0.519%. In the manufacturing sector, the increase of FINT by 1% in 95% of cases the market value is reduced by 0.837%. ± 0.175% point, and the increase of NINT value by 1% the market value is increases by 0.928%. ± 0,140% point. In the service sector 95% cases, this effect is lower in the range of 0,462% compared to the manufacturing sector ± 0.283% point and 0,409% ± 0,244% point. The value of these indicators explain, that value of market depends 73 percent on change of independent of variables including in the model.

The first differencing method (FD) estimator a Model 4 and Model 5. It represent the impact of value of general intangible assets on the market value of companies. This model don‘t indicate a collinearity problem (Values < 10, minimum posible value = 1,0), the White’s test not present a standard error is the heteroskedasticity (White test p > 0,05) and haven’t problem with autocorrelation (DW test, p > 0,05) (Table 11).

Table 11. **Results of Cross-Sectional of Model 4 and Model 5**

Independent variables of model	**Estimates of the coefficients and significance**			
	Model 4		**Model 5**	
	FD	**FE**	**FD**	**FE**
Konstanta	0,394 ***	7,529***	0,411 ***	7,534***
td 2010		0,349***		0,350***
td 2011	-0,451 ***	0,247*	-0,464 ***	0,248*
td 2012	-0,424 ***	0,209	-0,437 ***	0,210
td 2013	-0,458 ***	0,196	-0,482 ***	0,196
td 2014	-0,486 ***	0,166	-0,481 ***	0,168
td 2015	-0,144	0,316**	-0,143	0,319
tot_intass	0,249 ***	0,156***	0,292 ***	0,158***
tot_intass serv_sec			-0,09	-0,008
net_prof	0,000001	0,0000002	0,0000001	0,0000002
turnover	0,116	0,225***	0,103	0,227***
tass	-0,151	-0,169	-0,135	-0,170
working_cap	-0,0000001	0,0000003	-0,0000002	0,0000002
lt_debt	0,09	0,125*	0,08	0,125*
n	99	119	99	119
R^2_{adj}	0,263	0,303	0,260	0,303
White test (p-value)	0,112	0,195	0,184	0,231
DW test (p-value)	0,587	0,007***	0,576	0,009***

The independent variable is significant at the level *-0,1; **-0,05; ***-0,01

The results showed that general value of intangible (IA) assets growth of 1 percent increase 0,249 percent the market value of companies. According to the theory of signalling, the information of the accounting about value of IA reduces the value of the asymmetry of information between managers and investors. It is an important signal to investors because the market value of compnaies depends on how managers provide a signal of the information in the capital market.This relation allows to justify the hypothesis (H3), the company‘s managers expect in the investments profitability and benefits into this assets. value of IA have relation on the market value of companies and the potential of profitability to growth in the future. According to R. R. Gamayuni (2015), the higher value of intangible assets generate higher profit of companies, because investors believe that the companies will earn higher profits in the future, and this will have an impact on growth to the share price.

The positive impact of value of IA on the market value of companies may vary ± 0,115 percent at 95 percent of the probability. Adjusted determination coefficient indicates, the variables explains 26,3 percent included in the modelį the market value of the indicator dispersion.

The first differencing method (FD) estimator a Model3. Model3 represents the impact of general value of intangible assets on the market value of companies are different in manufacturing or service companies. This model don‘t indicate a collinearity problem (Values < 10, minimum posible value = 1,0), the White’s test not present a standard error is the heteroskedasticity (White test p > 0,05) and haven’t problem with autocorrelation (DW test, p > 0,05) (Table 3).

Results of the research showed, the impactof general value of intangible assets is more intensive in the manufacturing sector than in the service sector. The impact of market value of companies has increased by about 0,292 percent in the manufacturing sector and 0,202 percent in the service sector. However, the gap of value in these sectors of companies (0,09) isn‘t significant statistically. It is mean, hipotesis 3 can be adopted only in part. Hence, the general value of intangible assets is significant in the sectors of manufacturing and service. The growth of value of IA of 1 percent on the market value of companies in the manufacturing sector the market value of companies will increase in the interval 0,291 ± 0,158 percent to 95 percent of the probability. The growth of value of IA of 1 percent on the market value of companies in the service sector the market value of companies will increase in the interval 0,09 ± 0,239 percent to 95 percent of the probability. Adjusted determination coefficient indicates, the variables explains 32,7 percent included in the modelį the market value of the indicator dispersion.

The first differencing method (FD) estimator a Model 6 and Model 7. It represent the impact of value of general intangible assets on the market value of companies. This model don‘t indicate a collinearity problem (Values < 10, minimum posible value = 1,0), the White’s test not present a standard error is the heteroskedasticity (White test p > 0,05) and haven’t problem with autocorrelation (DW test, p > 0,05) (Table 12).

Table 12. **Results of Cross-Sectional of Model 6 and Model 7**

Independent variables of mode	Estimates of the coefficients and significance			
	Model 6		Model 7	
	FD	FE	FD	FE
Konstanta	0,397 ***	8,347***	0,404 ***	8,195***
td 2010		0,383***		0,398***
td 2011	-0,435 ***	0,330*	-0,421 ***	0,320***
td 2012	-0,432 ***	0,293**	-0,438 ***	0,286**
td 2013	-0,481 ***	0,226*	-0,498 ***	0,228*
td 2014	-0,475 ***	0,201	-0,459 ***	0,202
td 2015	-0,135	0,450***	-0,110	0,424***
ANTE	-0,078	-0,235***	-0,002 ***	-0,297 ***
ANTE serv_sec			-0,179	-0,165
PNTE	0,294***	0,391***	0,285***	0,441***
PNTE serv_sec			0,051	-0,148
net_prof	0,000002	0,000002	0,000002	0,000001
turnover	0,107	0,209***	0,098	0,179**
tass	-0,101	-0,149	-0,073	-0,105
working_cap	-0,0000001	0,0000004	-0,0000001	0,0000004
lt_debt	0,08	0,042	0,07	0,047
n	99	119	99	119
R^2_{adj}	0,334	0,452	0,327	0,460
White test (p-value)	0,129	0,009	0,062	0,01
DW test (p-value)	0,495	0,037**	0,620	0,057*

The independent variable is significant at the level *-0,1; **-0,05; ***-0,01

There is a confirmation that according to the company's market value the elasticity of the primary intangible asset (PNTE) is stronger than that of secondary intangible assets (ANTE). Increase in PNTE value by 1% the company's market value increased by 0,294%. The opposite effect was revealed by the secondary elements of intangible assets, the growth of which by 1% the company's market value was reduced by 0,08%. The results of the study did not explain why PNTE has a stronger market power than ANTE. However, there is a presumption that the growth of PNTE's value, which is linked to innovation, relationship and asset invested in man, reflects changes in market prices and the value of ANTE - the historical value of the property. Analyzing the impact of PNTE on the market value of companies, it turned out that 95% this effect can range from ± 0,132% within the limits of the point, while the ANTE effect is ± 0,171% within the limits of the point. However, as you can see, the effect of ANTE is not statistically significant, so the hypothesis (H6) can only be accepted in part. Adjusted determination coefficient indicates, the variables explains 33,4 percent included in the modelį the market value of the indicator dispersion.

Contrary to what was thought, the impact of the elements of primary and secondary intangible assets on the market value of companies is stronger in

service rather than in the manufacturing sector. In assessing the effect of PNTE on manufacturing companies, the impact on the market value of companies increases by 0,285% and in the service sector by 0,336%. However, the difference between the impact that emerges in the manufacturing and services sectors (0,05) is not statistically significant. The impact of ANTE on the market value of companies is reduced by about 0,002% and in the service sector by 0,177%. The difference between the manufacturing and services sectors in enterprises (0,179) is also not statistically significant. Hence, the hypothesis (H7) can only be partially rejected.

CONCLUSIONS

1. After analyzing the theoretical concepts of intangible assets, it has been established that the interpretation of this concept is presented and accepted in different directions from the point of view of science. Scientific discussions often arise from the content of the notion of intangible assets, because in the general sense the concept is perceived superficially, the essential aspects remain unaffected. The main concepts of intangible assets, which were classified, have made it possible to highlight the general features and differences that are being addressed by scholars of various scientific fields. The essential differences in the definition of intangible assets are less significant in practice than their similarities in economic and management science, but they remain significant in terms of economic and financial sciences. Since the concept of intangible assets is inaccurate in terms of content, the dissertation proposes to formulate this definition in the light of the most important explicit features of the analyzed assets: the economic significance of intangible assets, the future economic benefits of the asset, the added value created and the company's market value growth potential.
2. After evaluating the elements of intangible assets, it is established that the perception of the composition of intangible assets varies in the research papers and financial accounting. In academic literature, the elements of intangible assets are often named in different terms, regardless of the fact that from the point of view of content they include identical subelements. In the financial statements, the intangible asset items that can be compared with the asset under assessment from an academic perspective within the scope of legal regulation are extremely low. The dissertation describes the main elements of intangible assets that are related to marketing, contract, innovations, technologies, human, customer, artistic assets and goodwill. Each element of intangible assets includes different subelements. Some subelements are recognized and recorded as intangible assets in accounting, and others are written off as operating expenses. This is due to the fact that the legal acts regulating the accounting of intangible assets limit the accounting of these assets because it is necessary to justify the economic benefits of the asset, to determine the fair value and to ensure control.
3. The methods of valuation of intangible assets for financial and non-financial information analyzed in accordance with the normative accounting theory revealed that intangible assets include a two-way valuation method: financial and non-financial information. The value of a financial information intangible asset is measured using historical, current pricing and current realization accounting systems. In the company‘s practice, the most commonly used historical cost accounting system which is regulated by the general accounting principles in which the cost of an asset is recognized

as an acceptable and reliable valuation method. Actual acquisition and realization prices are rarely applied in practice in accounting systems because there is no active asset market for this. The valuation of non-financial information of intangible assets, in practice, is complicated. The dissertation proposes to determine the value of non-financial information intangible assets by consolidating several alternative valuation methods as it allows for a more detailed disclosure of which part of the value of assets remains unrecognized in the market.

4. According to positive accounting and financial economics the impact of intangible assets on the market value of companies has been identified. Positive accounting theory confirms that the presentation of accounting information to the market affects the expectations of its participants. This theory is closely linked to other theories of financial economics: effective market, representation and signalization. The arguments presented by the aforementioned theories confirm the necessity of the dissemination of accounting information on intangible assets. Publication of accounting information about the true value of intangible assets increases the level of transparency of information and the company's value in the capital market. To determine the impact of an intangible asset on the market value of companies, methods for analyzing multiple regression and panel data are used, the choice of which depends on the direction of research and the objective pursued. Empirical research carried out by researchers justifies the positive and significant impact of intangible assets on the market value of companies, but there were cases when opposite results of the study were obtained. The reason, as the investigators say, is the imperfection of the general accounting standards, their limited application in accounting.
5. The conceptual model of the company's market value on the impact of an intangible asset has two parts: the valuation of an intangible asset and the assessment of the company's market value. The purpose of the model is to reveal the impact of an intangible asset on the market value of an entity when properly and timely published accounting information about the fair value of the intangible assets is held by the entity. This explains the significance of the value of intangible assets, which enables to increase the transparency of accounting information in the capital market. The originality of the model is reflected in the value of the integrated intangible asset of non-financial information, since researchers have so far evaluated the impact of the value of financial information on the market value of companies. Seven scientific hypotheses have been formulated and verified in order to expand the possibilities of adaptation of the conceptual model. To determine its reliability, an intangible asset valuation methodology was compiled consisting of seven steps. This methodology explains how

to correctly apply the principles of classifying, valuing and impacts of an intangible asset on a company's market value model. The dissertation expands the possibilities to determine the value of an intangible asset: FINT is calculated using the historical price accounting system, and the value of the non-financial information intangible asset (NINT) is determined by alternative valuation methods: content analysis and financial intangible asset valuation method (FiMIAM). The impact of an intangible asset on the market value of companies is measured using the panel data analysis method. In order to obtain more reliable results of the research, additional factors are integrated into the basic evaluation model: net profit (loss), turnover, tangible assets, working capital and long-term debt.

6. The results of the study, based on the developed methodology for the valuation of intangible assets, confirmed the appropriateness of the conceptual model the impact of the created intangible assets on the market value of companies. An intangible asset valuation methodology, which allows companies to calculate the fair value of an intangible asset, which will increase the market value of the share, remains an important aspect. When comparing firms, it was found that FINT was dominated by customer-related, contract-based and technology-based assets and goodwill. In NINT, innovative-related, customer-related and human-centered assets were relatively large in terms of total assets. The results of the research showed that one company is trying to reveal financial information more and others - non-financial information. This is because the proportion of intangible assets depends on the composition of the asset, which is related to the company's activities. The general intangible assets consisted primarily of elements that were related to innovative-related, technology-based, customer-related and human-centered. The results of the study showed different effects of intangible assets on the market value of companies between financial and non-financial information. The integration of the NINT value into the basic valuation model revealed that the value of FINT may not always have a direct and significant impact on the market value of companies. The stronger impact of NINT on the market value of companies than the value of FINT, which has a positive effect, has been confirmed. The growth of NINT's value increases the company's market value. However, rising FINT value reduces company's market value. This allows recognizing and demonstrating the inadequacy of the historical price system, which evaluates the value of FINT in the balance sheet. This effect could change if the value of FINT was measured at the true rather than historic price. As the results of the research show, the relatively high value of FINT may reduce the reversal of the company's market value. However, the value of FINT must be 27 times higher than the value of NINT. When assessing the impact of the total

intangible asset (IA) on the market value of companies, the positive and significant magnitude of the effect achieved has been determined. Although the impact of IA on the market value of companies is not significant between manufacturing and service companies, it is significant between financial and non-financial information. On the contrary, the impact of the IA on the market value of companies was higher in services rather than in manufacturing companies. It was determined that the primary elements of an intangible asset (innovative-related, human-centered, customer-related) have a stronger effect on the market value of companies than secondary intangible assets (marketing-related, contract-based, technology-based, artistic-related, goodwill). An increase in the value of the elements of secondary intangible assets decreases the company's market value, as this group of assets more reflects historical rather than market value and forms the bulk of the value of financial information intangible assets. The primary elements of intangible assets more closely reflect market value and represent the bulk of the value of non-financial intangible assets. It is worth noting that, although the impact of elements of primary and secondary intangible assets on the market value of companies is different, they remain significant for both manufacturing and service groups.

REZIUMĖ

Temos aktualumas. Ekonomikos augimo tempai, žmonių socialinė gerovė, darnus ūkio vystymasis vis labiau priklauso nuo naujų žinių kūrimo ir praktinio jų pritaikymo. Įmonės veikla siejama su skirtingo pobūdžio ištekliais, tarp kurių nematerialusis turtas tampa vis svarbesne įmonės veiklos paskata. XX a. pabaigoje išaugęs susidomėjimas nematerialiuoju turtu ir jo poveikiu įmonės rinkos vertei skatino įmones didinti investicijas į žmogiškuosius išteklius, tyrimus ir plėtrą, naujas technologijas ir pan. Siekiant išlaikyti konkurencinį pranašumą ir didinti akcijų vertę rinkoje, svarbi išlieka tikroji nematerialiojo turto vertė balanse, nes ji kartu sąlygoja ir įmonės vertę rinkoje.

Nepaisant augančios nematerialiųjų išteklių svarbos įmonių vertės kūrimo procese, didžioji dalis jų nėra apskaitomi ir neatsispindi tradicinėje finansinėje apskaitoje. Įprasta, kad balanso ataskaitoje apskaitomos tik kelios nematerialiojo turto rūšys: prestižas, licencijos, autorinės teisės, programinė įranga, plėtra ir tyrimai. Vis dar nėra išspręstos kylančios problemos ir neaiškumai dėl nematerialiojo turto vertės nustatymo. Nematerialiuoju turtu apskaitomi tik tie ištekliai, kurių išlaidos atitinka nematerialiojo turto apibrėžimą bei pripažinimo kriterijus: būsimą ekonominę naudą, vertę ir kontrolę. Sprendžiant nematerialiojo turto vertės nustatymo problemas, susiduriama su apskaitos informacijos atskleidimo stoka. Tinkamas apskaitos informacijos atskleidimas grindžiamas sąžiningumo ir lygiateisiškumo principais. Kitu atveju, netinkamai atskleista informacija sudaro galimybę formuotis nesąžiningai konkurencijai vertybinių popierių rinkoje. Apskaitos informacijos patikimumą kokybės srityje užtikrina išorės institucijos, kurios yra orientuotos į apskaitos atskleidimą ir viešinimą.

Tyrėjai sprendžia skirtingas problemas: kokia nematerialiojo turto vertė atskleidžiama finansinėje atskaitomybėje; kaip keičiasi nematerialiojo turto struktūra įvairiuose pramonės sektoriuose; kiek neapskaityta nematerialiojo turto vertė viršija tikrąją nematerialiojo turto vertę; koks ryšys tarp nematerialiojo turto ir įmonių rinkos vertės; koks atotrūkis tarp įmonių tikrosios ir rinkos vertės vertybinių popierių rinkoje ir kt. Tačiau didžioji dauguma tokių tyrimų susiję su kitų šalių valstybėmis: JAV, Šveicarija, Anglija, Prancūzija, Indija, Malaizija ir kt. Svarbus vaidmuo tenka tarptautinėms organizacijoms, kurios, siekdamos padidinti finansinės informacijos atskleidimą ir jos palyginimą tarp ūkio subjektų ir kitų rinkos dalyvių, kuria ir tobulina bendrus tarptautinius apskaitos standartus. Lietuvoje ši sritis tyrinėta fragmentiškai. Pastaraisiais metais atsiranda daugiau tyrimų, rodančių, kad tema yra aktuali pasaulyje ir Lietuvoje.

Mokslinė problema, jos ištyrimo lygis. Siekiant pabrėžti informacijos apie nematerialiojo turto vertę ir jos poveikį įmonės rinkos vertei reikšmingumą, mokslinės problemos ištyrimo lygis nustatomas atsižvelgiant į tyrėjų keliamas

problemas, tyrimo objektą, naudojamus metodus ir siekiamus rezultatus. Analizuojant tyrimus, išryškėjo du moksliniai požiūriai disertacijos tema: *nematerialiųjų išteklių pripažinimo ir įvertinimo nematerialiuoju turtu apskaitoje problematika; ir apskaitos informacijos atskleidimo apie tikrąją nematerialiojo turto vertę ir jos poveikį įmonės rinkos vertei reikšmė ir nauda.*

Nematerialiųjų išteklių pripažinimas nematerialiuoju turtu finansinėje apskaitoje laikomas sudėtingu dėl šio turto apibrėžimo, t. y. galimybės jį identifikuoti, nustatyti vertę, įrodyti būsimą ekonominę naudą ir užtikrinti kontrolę. Dauguma mokslininkų (N. Bontis, 1998; O. Granstand ir kt., 1999; J. D. Teece, 2000; A. Lönnqvist, P. Mettänen, 2002; B. Lev, 2003; D. Volkov, T. Garanina, 2007; A. Jukaitytė-Sungailienė, 2009; M. Crema, A. Nosella, 2014; A. Svensson, 2014; R. Kimouche, A. Rouabhi, 2016 ir kt.) sutinka, kad nematerialiųjų išteklių visuma, priklausanti įmonei, apima nematerialiojo turto visumą, kuria disponuojama pagal poreikį ir paskirtį. Tačiau nesuderinamumas slypi šių išteklių apskaitymo galimybėje, taikant pripažinimo kriterijus pagal visuotinai priimtus apskaitos standartus. Būtent dėl konservatyvių apskaitos standartų dauguma nematerialių išteklių nėra apskaitomi ir neatsispindi finansinėje apskaitoje. Tik maža dalis nematerialiųjų išteklių apskaitoje pripažįstami, vertinami ir atskleidžiami kaip nematerialus turtas. Kiti mokslininkai (T. Shah, A. Khedkar, 2006; I. Mačerinskienė, S. Survilaitė, 2011; S. Sofian, S. Zaleha, A. Rasid, A. Mehri, M. S. Umar, 2011; K. Rudžionienė, A. Ramanauskaitė, 2012; A. Stankevičienė, A. Liučvaitienė, 2012; O. O. Jaara, K. A. R. Elkotayni, 2016) patvirtina, kad dauguma įmonių nematerialiuosius išteklius apskaito kaip išlaidas, o išlaidos šiam turtui formuoti yra pripažįstamos kaip to laikotarpio sąnaudos, dėl to mažėja įmonės savininkų nuosavas kapitalas. Nematerialiųjų išteklių fiksavimas kartu su kitomis įmonės išlaidomis tiesiogiai veikia finansinius įmonių rezultatus: pelną ir mokamus mokesčius. Panašaus požiūrio laikosi mokslininkai (A. Lönnqvist, L. Tech, 2002; T. Shah, A. Khedkar, 2006; G. T. R. Lin, J. Y. H. Tang, 2009; A. M. Wight, 2009; I. Mačerinskienė, S. Survilaitė, 2011; A. Stankevičienė, A. Liučvaitienė, 2012; N. Sharma, 2012; R. Kimouche, A. Rouabhi, 2016; N. Ifeanyi, O. Caroline, 2016), teigdami, kad nematerialiojo turto pripažinimas vis dar nepakankamai ištirtas, todėl išmatuoti nematerialųjį turtą vis dar sudėtinga užduotis, dėl ko ir formuojasi atotrūkis tarp įmonės tikrosios ir esamosios vertės. Nors sukurta įvairių metodų nematerialiojo turto vertei nustatyti (J. Surroca, J. A. Tribo, Waddock, 2006; T. Shah, A. Khedkar, 2006; A. M. Wight, 2009; Ch. Abhijeet, G. Richa, 2010; J. Mackevičius, J. Jarmalaitė, 2011; V. Gižienė, Ž. Simanavičienė, 2012; C. D. Passard, K. cKenna, V. Krishnan, 2012; R. R. Gamayuni, 2015 ir kt.), tačiau problema kyla dėl to, kad dauguma metodų sudėtinga pritaikyti atliekant empirinius tyrimus.

Mokslininkai (J. Wrigley, 2008; C. H. Liao, 2009; Z. Z. Mohamad, H. M. Salleh, N. D. Ismail, I. T. Chek, 2014; R. Kimouche, A. Rouabhi, 2016) pritaria

požiūriui, kad nematerialiojo turto vertės nustatymas – tai viena iš aktualiausių mokslinių tyrimų krypčių, nes siejama su apskaitos informacijos asimetriškumu dėl viešai neatskleistos informacijos apie tikrąją nematerialiojo turto vertę, kuri daro poveikį ir įmonės rinkos vertei. Apskaitos informacija įmonės veikloje turi svarbią reikšmę. Tai parodo trijų Nobelio premijos laureatų G. A. Akerlof, A. M. Spence ir J. E. Stigliz XX a. pabaigoje atlikti tyrimai. Jie tyrė problemas, kurios gali iškilti rinkose dėl informacijos asimetrijos, t. y. kas atsitinka su rinka, jei vieni rinkos dalyviai turi daugiau informacijos nei kiti. Apskaitos informacijos apie nematerialiuosius įmonės išteklius ir jų panaudojimo potencialą stygius gali tiesiog iškreipti tradicinės finansinės apskaitos rezultatus, o investuotojų ar kitų rinkos dalyvių nepasiekti objektyvi, tikrąją įmonės turto būklę rodanti apskaitos informacija. Tiek mokslininkai, tiek investuotojai sutaria, kad žinių ekonomikoje nematerialusis turtas yra reikšmingas konkurencinio pranašumo ir akcininkų vertės didinimo veiksnys, kuris neabejotinai veikia įmonės rinkos vertę (D. Aaker, R. Jacobson, 1994; K. Haanes, O. Fjeldstad, 2000; R. R. Gamayuni, 2015; D. M. Ipate, I. Parvu, 2016). Dar XX a. pradžioje išryškėjo nematerialiojo turto nauda. 1978 m. paskelbus JAV mokslininko E. Denison 1929–1976 m. laikotarpio tyrimo rezultatus, buvo įrodyta, kad didžiausią įtaką ekonomikos augimui turi darbo pasiūlos kokybė (darbuotojų išsilavinimas, kvalifikacija, žinios, patirtis ir kt.), mokslo ir technikos naujovių taikymas ir naujų investicijų naudojimas. Pramonės laikotarpiu dominavusį materialųjį turtą vis aktyviau keitė nematerialusis, kuris dėl informacinių technologijų, elektronikos ir interneto vystėsi labai sparčiai. Informacija tapo besiskverbiančiu svarbiu ištekliu į visas mokslo, verslo, gamybos ir privataus gyvenimo sferas (A. Abu-Musa, 2009). Išryškėjo požiūris, kad XXI amžiuje sėkmingas konkurencingumas priklausys būtent nuo nematerialiojo turto vertės ir jo išlaidų valdymo (A. Lönnqvist, L. Tech, 2002; A. Wyatt, M. A. Abernethy, 2003; T. Shah, A. Khedkar, 2006; G. T. R. Lin, J. Y. H. Tang, 2009; C. D. Dean, K. McKenna, V. Krishnan, 2012; N. Sharma, 2012 ir kt.). Gebėjimas nuolat atsinaujinti, kurti naujus produktus, procesus ar paslaugas, plėstis naujomis kryptimis yra svarbiausias įmonės vertės kūrimo veiksnys (И. А. Бланк, 2002; R. Strazdas, A. Jakubavičius, K. Gečas, 2003; Z. Liepė, A. Sakalas, 2008; O. O. Jaara,K. A. R. Elkotayni, 2016). Nematerialiojo turto vertės didinimu ir jo poveikiu įmonės rinkos vertei domisi ne vien akademinė bendruomenė, bet ir nacionalinės bei tarptautinės organizacijos: Pasaulio bankas, Europos Komisija, Ekonominio bendradarbiavimo ir plėtros organizacija, Pasaulio ekonomikos forumas, Mokslo ir studijų stebėsenos ir analizės centras, Žinių ekonomikos forumas, Lietuvos inovacijų centras ir kt. Jų tyrimuose nuolat akcentuojama nematerialiojo turto nauda ir svarba. Visa tai dar kartą parodo nematerialiojo turto išteklių svarbą vertinant jų poveikį įmonės rinkos vertei.

Išanalizavus ir susisteminus mokslinėje literatūroje keliamas problemas, suformuluota disertacijos **mokslinė problema** – *kokiais vertinimo metodais ma-*

tuojama nematerialiojo turto vertė ir kaip atlikti nematerialiojo turto poveikio įmonės rinkos vertei vertinimą, atskleidžiant ir išgryninant turto praktinio taikymo poreikį ir realias galimybes.

Tyrimo objektas – nematerialiojo turto poveikis įmonės rinkos vertei.

Tyrimo tikslas – išnagrinėjus nematerialiojo turto vertinimo metodus bei poveikio įmonės rinkos vertei tyrimų koncepcijas, sudaryti ir patikrinti nematerialiojo turto poveikio įmonės rinkos vertei nustatymo modelį.

Tyrimo uždaviniai:

1. Išanalizuoti ir suklasifikuoti nematerialiojo turto koncepcijas, išskiriant esminius sąvokų turinį formuojančius požymius.
2. Įvertinti ir apibrėžti nematerialiojo turto elementus, sugretinant akademinį požiūrį ir teisinį reglamentavimą finansinėje apskaitoje.
3. Išnagrinėti ir apibendrinti finansinės ir nefinansinės informacijos nematerialiojo turto vertės nustatymo metodus, remiantis normatyviąja apskaitos teorija.
4. Identifikuoti ir pagrįsti nematerialiojo turto poveikį įmonės rinkos vertei, atsižvelgiant į pozityviosios apskaitos ir finansų ekonomikos teorijų aspektus.
5. Sudaryti nematerialiojo turto poveikio įmonės rinkos vertei konceptualųjį modelį ir parengti nematerialiojo turto vertinimo metodiką modelio patikimumui įvertinti.
6. Patikrinti sudaryto modelio validumą, nustatant nematerialiojo turto poveikį Lietuvos biržoje kotiruojamų įmonių rinkos vertei taikant finansinės ir nefinansinės informacijos nematerialiojo turto vertės konsolidavimą.

Mokslinio tyrimo metodai. Disertacijos teorinėje dalyje buvo taikyti bendrieji moksliniai tyrimo metodai – detalizavimas, sisteminimas, grupavimas, integravimas, lyginimas, analogijų ieškojimas, loginės analizės metodas, grafinis modeliavimas, apibendrinimas ir kt. Empirinio tyrimo duomenys surinkti, naudojant atsitiktinį atrankos metodą ir turinio analizės metodą. Nematerialiojo turto vertė nustatyta, taikant istorinės kainos ir finansinį nematerialiojo turto vertinimo (FiMIAM) metodus. Nematerialiojo turto poveikio įmonės rinkos vertei tyrimui atlikti taikytas ekonometrinis modeliavimas – panelinių duomenų regresijos modeliai. Ekonometrinio modeliavimo analizė atlikta taikant MSExcel ir GRETL programinę įrangą.

Disertacijos struktūra. Disertaciją sudaro įvadas, lentelių, paveikslų, sąvokų ir santrumpų sąvadas, 12 skyrių, sujungtų į 3 darbo dalis, bei literatūros šaltinių sąrašas. Darbo apimtis – 148 puslapiai, pateikti 21 paveikslai, 46 lentelės, 42 priedai.

Tyrimo apribojimai

1. Nematerialiojo turto sąvokos analizė apima tik tam turtui būdingus esminius panašumus bei išskirtinumus, todėl atsiribojama nuo nematerialiojo

turto sąvokos tapatinimo ir lyginimo su intelektiniu kapitalu bei kitų sinoniminių terminų interpretacijos.
2. Dėl vertinimo metodų sudėtingumo išmatuoti nefinansinės informacijos nematerialiojo turto vertę, disertacijoje pasirinkta taikyti rinkos kapitalizacijos metodus, atsiribojant nuo kitų vertinimo metodų analizės.
3. Disertacijoje nagrinėjamas nematerialiojo turto poveikis įmonės rinkos vertei, todėl atsiribojama nuo įmonės verslo vertės koncepcijos analizės. Įmonės rinkos vertės sąvoka prilyginama įmonės kapitalizacijos terminui.
4. Įmonės rinkos vertė apskaičiuojama, neatsižvelgiant į įmonės akcijos pelningumą, likvidumą, jų išskaidymą ar sujungimą bei akcijų rinkos kainų kilimo ar kritimo priežastis.
5. Sudarant nematerialiojo turto poveikio įmonės rinkos vertei modelį, atsiribojama nuo išorinių veiksnių, tačiau papildomai integruojami įmonių veiksniai, sąlygojantys akcijos rinkos kainą.

Mokslinio darbo naujumas, reikšmingumas ir praktinis pritaikomumas

1. Analizuojant nematerialiojo turto sąvokos apibūdinimus, įžvelgiami tam tikri skirtumai lyginant šio turto sąvokų sampratas. Vis dar nėra vienodos nuomonės dėl nematerialiojo turto interpretavimo mokslo krypčių požiūriu. Siekiant didesnio šio turto sąvokos vartojimo aiškumo ir tikslumo mokslinių aspektu, siūloma nematerialiojo turto sąvokos apibrėžtį formuluoti atsižvelgiant į nematerialių išteklių ekonominę reikšmę, teikiamą ekonominę naudą, sukurtą pridėtinę vertę ir įmonės rinkos vertės augimo potencialą.
2. Nagrinėjant tarptautinių apskaitos standartų ir bendrai priimtų apskaitos principų nuostatų turinį tarp skirtingų šalių, atskleisti nematerialiojo turto pripažinimo apskaitoje panašumai ir skirtumai. Remiantis gautais rezultatais, sudaryta nematerialiojo turto klasifikacija, integruojanti aštuonis nematerialiojo turto elementus, kurie išsiskiria iš daugelio kitų siūlomų, nes parodo skirtingus finansinės ir nefinansinės informacijos nematerialiojo turto subelementus, juos susiejant su investicijomis į žmogų, rinkos tyrimus, intelektinę nuosavybę, technologijas, inovacijas, ryšius ir kt. Ši klasifikacija gali būti sėkmingai pritaikyta skirtingų šakų įmonėse, išplėsti bei papildyti įmonės finansų valdymo teorines ir praktines koncepcijas.
3. Anksčiau atliekant empirinius tyrimus dažniausiai naudota finansinės informacijos nematerialiojo turto vertė. Disertacijoje siūloma įvertinti ne tik finansinės informacijos nematerialiojo turto vertę, bet ir nefinansinės informacijos nematerialiojo turto vertę, taip atskleidžiant tikrąją nematerialiojo turto vertę, kuria disponuojama įmonės veikloje. Gauta išplėstinė nematerialiojo turto vertinimo informacija gali būti vertinga tiek patiems įmonės savininkams, tiek investuotojams, nes ši vertė turi svarbią praktinę reikšmę vertinant nematerialiojo turto poveikį įmonės rinkos vertei.

4. Sukurtas nematerialiojo turto poveikio įmonės rinkos vertei konceptualusis modelis paremtas normatyvinės ir pozityvinės apskaitos bei efektyvios rinkos, signalizavimo ir atstovavimo teorinėmis prielaidomis, kuriomis grindžiamas praktinis parengto modelio aktualumas. Modelyje atsiskleidžia nematerialiojo turto vertės reikšmingumas ir išskirtinumas, leidžiantis tiksliau nustatyti šio turto poveikį įmonės rinkos vertei. Taip siūloma didinti finansinės ir nefinansinės informacijos skaidrumą ir patikimumą kapitalo rinkoje. Šis modelis gali būti plėtojamas ir kitose mokslinių tyrimų kryptyse.
5. Parengta nematerialiojo turto vertės ir jo poveikio įmonės rinkos vertei vertinimo metodika išsiskiria tuo, kad kompleksiškai integruojamos finansinės ir nefinansinės informacijos nematerialiojo turto verčių nustatymo procedūros, o turto poveikiui įmonės rinkos vertei nustatyti siūlomi ekonometriniai modeliai apima skirtingų struktūrų dedamąsias dalis. Disertacijoje siūloma nematerialiojo turto poveikio įmonės rinkos vertei vertinimo metodika apima specifines sąlygas, reikalingas nustatyti nematerialiojo turto vertę ir jo poveikį įmonės rinkos vertei. Metodika gali būti pritaikyta Lietuvos ir užsienio šalių įmonėse ir naudinga verslo objektams, finansų rinkos dalyviams ir kitiems ūkio subjektams. Ši metodika gali būti pagrindu plėtojant disertacijos tematiką įvairesnėse koncepcijose, keičiant mokslinius tyrimo metodus, naujai formuluojant tikslus.

Tolesnė tyrimo plėtojimo kryptis

Disertacijoje sukurtas nematerialiojo turto poveikio įmonės rinkos vertei modelis, remiantis parengta vertinimo metodika, gali būti pritaikytas tiriant: a) nematerialiojo turto poveikį įmonės verslo vertei, konkurenciniam pranašumui, pridėtinės vertės kūrimui; b) nematerialiojo turto poveikį, įtraukiant naujus arba keičiant kitus veiksnius, kurie gali daryti poveikį įmonės rinkos vertei.

IŠVADOS

1. Išanalizavus nematerialiojo turto teorines koncepcijas nustatyta, kad šios sąvokos interpretacija mokslo krypčių požiūriu yra pateikiama ir priimama skirtingai. Mokslinės diskusijos dažnai kyla dėl nematerialiojo turto sąvokos turinio sudėties, nes bendrąja prasme sąvoka suvokiama paviršutiniškai, esminiai aspektai lieka nepaliesti. Atlikus nematerialiojo turto sąvokos turinio analizę pagal pateikiamus jos apibūdinimus ekonomikos, finansų ir vadybos mokslų darbuose, išryškėjo esminiai šios sąvokos turinį formuojantys požymiai. Tai išteklių nematerialumas ir neapčiuopiamumas; atvejai, kai nematerialusis turtas pripažįstamas turtu apskaitoje; turto teikiama ekonominė nauda; kuriama ir didinama pridėtinė vertė ir konkurencinio pranašumo užtikrinimas. Suklasifikuotos pagrindinės nematerialiojo turto koncepcijos leido išryškinti, į kokius bendrus bruožus ir į kokius skirtumus kreipia dėmesį įvairių mokslo krypčių mokslininkai. Nematerialiojo turto apibrėžtį pabrėžiantys esminiai skirtumai praktikoje ne tokie reikšmingi, nei jo panašumai ekonomikos ir vadybos mokslo srityse, tačiau jie išlieka reikšmingi ekonomikos ir finansų mokslo krypčių požiūriu. Kadangi nematerialiojo turto sąvokos interpretacijoje turinio požiūriu pasigendama tikslumo, disertacijoje siūloma šios sąvokos apibrėžtį formuluoti atsižvelgiant į svarbiausius išryškėjusius analizuojamo turto išskirtinumus: nematerialiųjų išteklių ekonominę reikšmę, būsimą turto ekonominę naudą, sukurtą pridėtinę vertę ir įmonės rinkos vertės augimo potencialą.
2. Įvertinus nematerialiojo turto elementus nustatyta, kad nematerialiojo turto sudėties suvokimas mokslo darbuose ir finansinę apskaitą reglamentuojančiuose dokumentuose skiriasi. Akademinėje literatūroje nematerialiojo turto elementai dažnai įvardijami skirtingais terminais, neatsižvelgiant į tai, kad turinio požiūriu jie apima identiškus subelementus. Finansinėje apskaitoje nematerialiojo turto elementų, kuriuos būtų galima palyginti su vertinamu turtu akademiniu požiūriu pagal teisinio reguliavimo sritį, yra itin mažai. Disertacijoje aprašyti pagrindiniai nematerialiojo turto elementai, kurie susiję su rinkodara, intelektine nuosavybe, inovacijomis, technologijomis, investicijomis į žmogų, ryšiais / santykiais, meniniu turtu ir prestižu. Kiekvienas nematerialiojo turto elementas apima skirtingus subelementus. Vieni subelementai pripažįstami ir registruojami kaip nematerialusis turtas apskaitoje, o kiti nurašomi kaip veiklos sąnaudos. Taip yra dėl to, kad nematerialiojo turto apskaitą reglamentuojantys teisiniai aktai riboja šio turto apskaitymą, nes privaloma pagrįsti turto ekonominę naudą, nustatyti tikrąją vertę ir užtikrinti kontrolę. Sudėtingiausia nustatyti turto būsimą ekonominę naudą ir vykdyti jo teikiamos ekonominės naudos kontrolę, nes įvertinimo procesas ilgas ir painus. Nematerialiojo turto vertę paprasčiau nustatyti,

nes bendrieji apskaitos principai nurodo tik du vertinimo metodus – savikainos ir perkainojimo, todėl toks vertinimas lieka įprasta ir praktikoje taikoma procedūra.

3. Išnagrinėti finansinės ir nefinansinės informacijos nematerialiojo turto vertinimo metodai pagal normatyviąją apskaitos teoriją atskleidė, kad vienintelio tinkamiausio metodo nematerialiojo turto vertei nustatyti nėra. Sukurta įvairiausių metodų, kurie išsiskiria savo unikalumu ir skirtingomis ypatybėmis, tačiau dauguma jų iš esmės nesiskiria nuo metodų, jau sukurtų ir praktiškai įgyvendintų. Apibendrinus vertinimo metodus paaiškėjo, kad nematerialusis turtas apima dvejopą vertės nustatymo būdą: finansinės ir nefinansinės informacijos. Finansinės informacijos nematerialiojo turto vertė matuojama taikant istorinės, esamosios įsigijimo ir esamosios realizavimo kainų apskaitos sistemas. Įmonių praktikoje dažniausiai vyrauja istorinė kainų apskaitos sistema, reglamentuojama bendrųjų apskaitos principų, kuriuose turto įsigijimo savikaina pripažįstama kaip priimtinas ir patikimas vertinimo metodas. Esamosios įsigijimo ir esamosios realizavimo kainos apskaitos sistemos praktikoje retai taikomos, nes tam nėra aktyvios turto rinkos. Nefinansinės informacijos nematerialiojo turto vertės nustatymas praktikoje sudėtingas ir komplikuotas. Nors mokslinėje literatūroje pateikiama nemažai vertinimo metodų, tačiau nustatant nefinansinės informacijos nematerialiojo turto turto vertę tik dalis jų gali būti pritaikomi praktikoje, nes ne visada atitinka įmonės veiklos poreikius ir galimybes. Disertacijoje siūloma nefinansinės informacijos nematerialiojo turto vertę nustatyti konsoliduojant keletą alternatyvių vertinimo metodų, nes tai leidžia detaliau atskleisti, kokia turto vertės dalis lieka neapskaityta rinkoje. Iki tol naudotos metodikos neatitiko turto vertės nustatymo praktinio pritaikymo.
4. Remiantis pozityviosios apskaitos ir finansų ekonomikos teorijomis identifikuotas nematerialiojo turto poveikis įmonės rinkos vertei. Pozityvioji apskaitos teorija patvirtina, kad apskaitos informacijos pateikimas rinkai veikia jos dalyvių lūkesčius. Ši teorija glaudžiai siejama su kitomis finansų ekonomikos teorijomis: efektyvios rinkos, atstovavimo ir signalizavimo. Efektyvios rinkos teorija teigia, kad apskaitos informacijos paskelbimas lemia rinkos dalyvių elgseną, nes tikimasi, kad įmonės akcijos kaina didės. Ryšius tarp savininkų ir vadovų atskleidžianti atstovavimo teorija paaiškina, kaip įmonės vadovai gali pasinaudoti turto apskaitoje teikiama informacija naudingiausia įmonės veiklai kryptimi. Tarp vadovų ir savininkų egzistuojančios informacijos asimetrijos mažinimą, kai įgyvendinama efektyvi dividendų politika, atspindi signalizavimo teorija. Minėtų teorijų pateikiami argumentai patvirtina apskaitos informacijos apie nematerialųjį turtą sklaidos būtinumą. Apskaitos informacijos apie tikrąją nematerialiojo turto vertę paskelbimas didina informacijos skaidrumo lygį ir įmonės vertę

kapitalo rinkoje. Norint nustatyti nematerialiojo turto poveikį įmonės rinkos vertei, taikomi daugialypės regresijos ir panelinių duomenų analizės metodai, kurių pasirinkimas priklauso nuo tyrimų krypties ir siekiamo tikslo. Mokslininkų atlikti empiriniai tyrimai pagrindžia nematerialiojo turto teigiamą ir reikšmingą poveikį įmonės rinkos vertei, tačiau būta atvejų, kai gauti ir priešingi tyrimo rezultatai. Priežastis, kaip įvardija tyrėjai, – bendrųjų apskaitos standartų netobulumas, ribotas jų pritaikymas apskaitoje. Dažniausiai tyrėjai pasirinko vertinti finansinės informacijos nematerialiojo turto vertės poveikį įmonės rinkos vertei. Tačiau nefinansinės informacijos nematerialiojo turto vertės poveikis įmonės rinkos vertei iki šiol tiesiogiai nevertintas. Mokslininkai, siekdami tikslesnių tyrimo rezultatų, į bazinę modelio specifikaciją integravo ir kitus papildomus veiksnius, kurie lemia akcijos kainos pokyčius rinkoje.

5. Sukurtą nematerialiojo turto poveikio įmonės rinkos vertei konceptualųjį modelį sudaro dvi dalys: nematerialiojo turto vertės nustatymas ir poveikio įmonės rinkos vertei vertinimas. Šis modelis remiasi normatyviosios ir pozityviosios apskaitos bei efektyvios rinkos, signalizavimo ir atstovavimo teorinėmis prielaidomis, kuriomis grindžiamas ryšis tarp nematerialiojo turto ir įmonės rinkos vertės. Modelio sukūrimo tikslas – atskleisti nematerialiojo turto poveikį įmonės rinkos vertei, kai tinkamai ir laiku paskelbta apskaitos informacija apie tikrąją nematerialiojo turto vertę, kuria disponuojama įmonėje. Taip atskleidžiamas nematerialiojo turto vertės reikšmingumas, leidžiantis didinti apskaitos informacijos skaidrumą kapitalo rinkoje. Modelio originalumą atspindi integruota nefinansinės informacijos nematerialiojo turto vertė, nes iki šiol tyrėjai dažniausiai vertino finansinės informacijos nematerialiojo turto vertės poveikį įmonės rinkos vertei. Siekiant išplėsti konceptualiojo modelio pritaikymo galimybes, suformuluotos ir patikrintos septynios mokslinės hipotezės. Jo patikimumui nustatyti parengta nematerialiojo turto vertinimo metodika, sudaryta iš septynių etapų. Ši metodika paaiškina, kaip teisingai atlikti nematerialiojo turto klasifikacijos, vertės ir poveikio įmonės rinkos vertei modelių formavimo principus. Nematerialiojo turto klasifikacija sudaryta iš dviejų skirtingų turto dalių: iš finansinėje apskaitoje šešių apskaitomų ir septynių neapskaitomo turto elementų. Sujungus abi dalis nustatoma bendroji nematerialiojo turto klasifikacija, jungianti aštuonis nematerialiojo turto elementus. Kiekvienas nematerialiojo turto elementas apima skirtingus subelementus. Nematerialiojo turto vertei nustatyti atskiroms turto dalims pasirinkta pritaikyti finansinės (apskaitomos) ir nefinansinės (neapskaitomos) informacijos nematerialiojo turto vertės sampratą. Disertacijoje praplečiamos nematerialiojo turto vertės nustatymo galimybės: finansinės informacijos nematerialiojo turto (FINT) vertė apskaičiuojama taikant istorinę kainų apskaitos sistemą,

o nefinansinės informacijos nematerialiojo turto (NINT) vertė nustatoma atsižvelgiant į alternatyvius vertinimo metodus: turinio analizės ir finansinį nematerialiojo turto vertinimo metodą (FiMIAM). Nematerialiojo turto poveikis įmonės rinkos vertei matuojamas taikant panelinių duomenų analizės metodą. Siekiant patikimesnių tyrimo rezultatų, į bazinį vertinimo modelį integruoti papildomi veiksniai: grynasis pelnas (nuostoliai), apyvarta, materialusis turtas, apyvartinis kapitalas ir ilgalaikės skolos.

6. Gauti tyrimo rezultatai, remiantis parengta nematerialiojo turto vertinimo metodika, patvirtino sukurto nematerialiojo turto poveikio įmonės rinkos vertei konceptualiojo modelio tinkamumą. Finansinės ir nefinansinės informacijos nematerialiojo turto vertės konsolidavimas atskleidžia turto vertės naudingumą ir reikšmingumą didinant įmonės vertę rinkoje. Svarbiu aspektu išlieka nematerialiojo turto vertinimo metodika, pagal kurią įmonės galėtų apskaičiuoti tikrąją nematerialiojo turto vertę, kas didintų akcijos rinkos vertę. Lyginant įmones tarpusavyje nustatyta, kad FINT struktūroje dominavo ryšių / santykių, intelektinis ir technologinis turtas bei prestižas. NINT sudėtyje santykinai didesnę viso turto dalį užėmė inovacinis, ryšių / santykių ir į žmogų investuojamas turtas. Atlikto tyrimo rezultatai parodė, kad vienos įmonės siekia labiau atskleisti finansinę, o kitos – nefinansinę informaciją. Taip yra dėl to, kad nematerialiojo turto dalis priklauso nuo turto turinio sudėties, kuri siejama su įmonės vykdoma veikla. Bendroje nematerialiojo turto sudėtyje daugiausia vyravo elementai, kurie susiję su inovacijomis, technologijomis, ryšiais / santykiais ir investicijomis į žmogų. Tikrinant iškeltų tyrimo hipotezių pagrįstumą, pritaikyti pirmos eilės skirtumų ir fiksuotų efektų metodai. Gauti tyrimo rezultatai parodė skirtingą nematerialiojo turto poveikį įmonės rinkos vertei tarp finansinės ir nefinansinės informacijos. NINT vertės integravimas į bazinį vertinimo modelį atskleidė, kad ne visada FINT vertė gali turėti tiesioginį ir reikšmingą poveikį įmonės rinkos vertei. Patvirtintas stipresnis NINT vertės poveikis įmonės rinkos vertei nei FINT vertės, kuris pasireiškė teigiamu efektu. NINT vertės augimas įmonės rinkos vertę didina. Tačiau didėjanti FINT vertė įmonės rinkos vertę sumažina. Tai leidžia pripažinti ir parodyti neadekvatumą istorinės kainų sistemos, kuria vertinama FINT vertė balanso ataskaitoje. Šis poveikis galėtų pasikeisti, jei FINT vertė būtų vertinama tikrąja, o ne istorine kaina. Kaip rodo tyrimo rezultatai, santykinai didėjanti FINT vertė gali sumažinti atvirkštinio poveikio įmonės rinkos vertei atsiradimą. Tačiau FINT vertės augimas turi būti 27 kartus didesnis nei NINT vertė. Vertinant bendrosios nematerialiojo turto (BNT) vertės poveikį įmonės rinkos vertei, nustatytas teigiamas ir reikšmingas pasiekto efekto dydis. Nors BNT vertės poveikis įmonės rinkos vertei nėra reikšmingas tarp gamybos ir paslaugų įmonių, jis reikšmingas tarp finansinės ir nefinansinės informacijos. Netgi

priešingai, BNT vertės poveikis įmonės rinkos vertei buvo stipresnis paslaugų, o ne gamybos įmonėse. Sugrupavus nematerialiojo turto elementus į pirminius ir antrinius nustatyta, kad pirminiai nematerialiojo turto elementai (inovatyvus, į žmogų investuojamas ir ryšių / santykių turtas) stipriau veikia įmonės rinkos vertę nei antriniai nematerialiojo turto elementai (rinkodara, intelektinės nuosavybės, technologinis, meninis turtas ir prestižas). Antrinių nematerialiojo turto elementų vertės augimas įmonės rinkos vertę sumažina, nes ši turto elementų grupė labiau atspindi istorinę, o ne rinkos vertę ir sudaro didžiąją dalį finansinės informacijos nematerialiojo turto vertės. Pirminiai nematerialiojo turto elementai labiau atspindi rinkos vertę ir sudaro didžiąją dalį nefinansinės informacijos nematerialiojo turto vertės. Dera pažymėti, kad nors ir skiriasi pirminių ir antrinių nematerialiojo turto elementų poveikis įmonės rinkos vertei, jie išlieka reikšmingi tiek gamybos, tiek paslaugų įmonių grupėms. Tai rodo, kad nematerialiojo turto elementų vertės nustatymas gali teikti papildomą ekonominę naudą visų veiklos tipų įmonėse.

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2. Bužinskienė, R. (2015). Evaluation of Structure of Financial and Non-Financial Information of Intangible Assets. XX Международной Научно-Технической *Конференции "Современные средства связи*", 244– 246, ISBN 978-985-7061-67-9, *Минск, Беларусь.*
3. Bužinskienė, R. (2014). Nematerialiojo turto ir intelektinio kapitalo sąvokų analizė. *Ekonomika ir vadyba: aktualijos ir perspektyvos*, Nr. 3 (35), 16–25, ISSN 1648-9098.
4. Bužinskienė, R., Rudytė, D. (2014). Knowledge Generating Investments' Impact on GDP Growth. *Scientific Journal of Riga Technical University „Economics and Business"* ISSN 1407-7337, 9– 14, in Vol. 26.
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6. Bužinskienė, R. (2013) Žinios – esminis veiksnys žiniomis grįstoje ekonomikoje. Profesinės studijos: teorija ir praktika Nr. 2013/12, 58– 65, ISSN 1822-3648.
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Rita Bužinskienė

ASSESSMENT OF THE IMPACT OF INTANGIBLE ASSETS ON THE MARKET VALUE OF COMPANIES

Summary of Doctoral Dissertation
Social Sciences, Economics (04 S)

2017 09 22. 4 leidyb. apsk. l. Tiražas 50. Užsakymas 67.
Išleido Šiaulių universiteto bibliotekos Leidybos skyrius,
Vilniaus g. 88, 76285 Šiauliai. Tel. 8 (41) 393 048
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