

DOCTORAL DISSERTATION

PROPOSED TO THE RIGA TECHNICAL UNIVERSITY FOR THE PROMOTION TO THE SCIENTIFIC DEGREE OF DOCTOR OF ECONOMICS (Dr. oec.)

The Doctoral Dissertation has been developed at the Institute of Production and Entrepreneurship of the Faculty of Engineering Economics and Management, Riga Technical University (RTU). To be granted the scientific degree of Doctor of Economics, the present Doctoral Dissertation has been submitted for the defense at the open meeting of RTU Promotion Council "RTU P-09" at 13 a. m. on 17 September, 2012, at the Faculty of Engineering Economics and Management, RTU, Riga, 1/7 Meza Street, Room 309.

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DECLARATION OF ACADEMIC INTEGRITY

I hereby declare that the Doctoral Dissertation submitted for the review to Riga Technical University for the promotion to the scientific degree of Doctor of Economics, is my own and does not contain any unacknowledged material from any source. I confirm that this Dissertation has not been submitted to any other university for the promotion to other scientific degree.

Jelena Titko

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The Doctoral Dissertation has been written in Latvian. The Doctoral Dissertation comprises an introduction, four chapters, conclusions and proposals, and bibliography with 217 reference sources; it has been illustrated by 67 figures, 65 tables, and 17 formulas. The volume of the present Dissertation is 180 pages, not including 28 annexes.

The Doctoral Dissertation and Summary are available at the Scientific Library of Riga Technical University, Kipsalas Street 10.

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GENERAL DESCRIPTION OF THE PRESENT RESEARCH

Banks are the most important category of financial institutions in the new Member States of the European Union, including Latvia. According to the data of the Central Statistical Bureau of Latvia, the assets of the Latvian banking industry amount to 94 per cent of the total assets of the financial system.

The process of globalization exercises a significant influence on the banking business today. Globalization in the banking sphere is attended by liberalization of the financial market. It means the abolition of restrictions for foreign financial institutions' entrance into domestic banking markets which, in turn, exacerbates competition and activates processes of banking capital consolidation. Competitive pressure has prompted financial institutions to pursue diversification strategies, often including mergers and acquisitions (M&A). As a result, M&A activity has increased worldwide during the last decades. Obviously, the number and volume of corporate transactions declined in 2008-2009 due to the global financial turbulence that was caused by the collapse of the USA banking system. However, in spite of negative repercussions of financial crisis, recent survey findings indicate a positive outlook for corporate transactions for the nearest future. According to the new KPMG survey, dealmakers have expressed optimism that M&A markets will continue to improve. Besides, the respondents expect that M&A activity will be greatest in banking. The valuation of an entity is an integral part of any M&A transaction. Thus, bank valuation is one of the most topical issues in today's financial business.

Bank valuation is important not only in M&A process. The value-based management skill is one of the main components of successful business activity today.

Various financial theorists and practitioners affirm that focusing on the shareholders' value is the best way how to achieve sustainable prosperity. A growing number of managers choose value creation as the main corporate goal of a company.

Value is important not only at company's, but also at the state level. The investors in shareholder-oriented economies receive higher return on capital, than in other countries. Taking into account market globalization, the latter will gradually fall into troubles with foreign investments and will lag behind in the world competition. Thus, shareholder value maximization should be an integral goal for any company, including banks. Besides, the following viewpoint has been adopted by many countries: companies that maximize value for their shareholders create more employment and better perform their social functions.

Financial crisis had the most significant negative effect on banking sectors in the Baltic States comparing with other new member states of the European Union. Return on equity (ROE) index has gone down dramatically in Latvia and in its closest neighbors. The main reason for rapid ROE decrease is the decrease of net interest income as well as increase in lost loans provisions. Besides, dynamics of non-performing loans volume still has a rising trend.

The statistical data point to the high volatility of revenues and riskiness of banking business in Latvia. Taking into account that about 80 per cent of Latvian banks are foreign-owned, the risk of capital outflow has increased. Thus, Latvian banks' top executives should start considering value enhancing for their shareholders.

Studying the issues of value management in banks, the attention is focused on retail banking. In the post-crisis period, banks have come to rely on their retail operations as on an invaluable source of income. The role of bank branches is also emphasized in the dissertation. It has been proved that branches are the most important contributors to the overall bank performance.

The topicality of research is justified by a number of problems, which currently exist in Latvia:

- The term „bank value” has not been properly defined in the scientific literature, as well as the concept of bank value has not been sufficiently examined;
- There are lots of limitations for application of company valuation methods to estimate the value of Latvian banks;
- The process of bank value management has low efficiency that complicates achieving value maximization goal.

To solve the research problems, the author of the dissertation provides answers to the following research questions:

- What is bank value? Which elements does the concept of bank value involve?
- How to determine bank value? Whether it is possible to adjust the methods of company valuation to measuring the value of Latvian banks?
- How to manage value to achieve its maximization? What instruments should be used to increase bank value?

The **goal** of the Doctoral Dissertation is to develop an alternative model for measuring bank value based on the analysis of performance of Latvian banks and on the results of

studying the concept of bank value, as well as to make suggestions for improvement value management in banking.

To achieve the goal of the dissertation the following **objectives** should be reached:

1. To detect the factors affecting bank value and to elaborate the model of the concept of bank value.
2. To explore the potential of the application of the methods developed for company valuation to determine the value of Latvian banks.
3. Theoretically substantiate and develop the model for measuring the value of Latvian banks.
4. Theoretically substantiate and develop a performance measurement system for retail business units of Latvian banks.
5. Theoretically substantiate and develop the instrument for measuring the satisfaction level of bank retail clients.
6. To determine and evaluate the factors affecting bank value from the viewpoint of bank retail clients, as well as to determine the difference between perception of these factors by bank customers and employees.
7. Theoretically substantiate and develop a factor model of bank service quality, based on the analysis of survey results conducted among retail clients of Latvian banks.

The Object, Subject and Limitations of the Research

The **object** of the research is Latvian and foreign banks.

The **subject** of the research is factors affecting bank value and instruments for improving value management.

The **limitations** of the research. Bank performance results since 2006 were analyzed to develop the model for measuring the value of Latvian banks. The respondents within the framework of the research “Bank value perceived by customers and employees” are only bank retail clients. Value management instruments are developed to increase the value of bank service branches only. The questions of value enhancing of other business units of a bank are not considered. Analyzing the potential of application of discounted cash flow method for measuring the value of Latvian banks, the author gives recommendations about the determination of the discount rate. The questions related to the prediction of cash flows are not discussed.

Theoretical and Methodological Foundation of the Doctoral Dissertation

The dissertation is based on theoretical and practical findings of Latvian (*I. Briede, S. Saksonova, I. Arhipova, S. Balina, E. Zelgalve, S. Prala, M. Kudinska*) and foreign authors (*A. Damodaran, T. Copeland, J. Murrin, T. Koller, J. Heskett, G. Arnold, E. Helfert, S. Heffernan, N. Avkiran, A. Bhide, H. Croxford, L. Gitman, A. Payne, M. Jensen, O. Lavrushin, I. Nikonova, A. Grjaznova, R. Shamgunov S. Valdaicev and others*) in the field of banking and value measuring and managing.

Large amount of statistical information has been used in developing the dissertation: the information from the home pages of Latvian and foreign banks, statistics provided by the Financial and Capital Market Commission and the Association of Commercial Banks of Latvia, consolidated banking data provided by the European Central Bank, the financial data provided by the international financial information agencies Reuters, Morningstar, Bloomberg and the Financial Times.

To achieve the goal of the dissertation various quantitative and qualitative **research methods** have been used: scientific literature review, interviews, qualitative content analysis, Delphi method, analysis of means (ANOM), graphical analysis, data processing with AQUAD 6.0 software, correlation and regression analysis, as well as factor analysis with SPSS 19.0 software.

Main contributions and scientific novelty

1. The model of the concept of bank value has been developed. The model is based on various finance and management concepts, such as the concept of modern banking, relationship value management, value-based management and sustainable stakeholder management. The developed model allows eliciting the factors affecting bank value creation.
2. The potential of application of the methods developed for company valuation to determine the value of Latvian banks has been analyzed. Practical recommendations for application of capital assets pricing model (CAPM) to calculate the cost of equity (discount rate) for Latvian banks have been given.
3. The build-up model for determination of the cost of equity for Latvian banks has been developed.

4. The linear regression model for measuring the value of Latvian banks has been developed.
5. The performance measurement system for Latvian bank branches has been developed.
6. The instruments for measuring the satisfaction and loyalty of retail bank customers have been developed.
7. The methodology for evaluation of bank service quality has been worked out. It involves (1) the author's recommendations about the development of the service quality measurement scale and coding of scale elements for further data processing, (2) the algorithm of testing the reliability of the scale, (3) the algorithm of assessment of the importance of the service quality elements and the total service quality score as perceived by respondents, (4) the author's recommendations on performing the factor analysis in order to elicit the most important service quality factors for bank clients.
8. The service quality factor model has been created.

In the process of elaborating the dissertation various researches related to the issues of measuring and managing bank value have been conducted. The hypotheses concerning different approaches to defining the value of a company, the difference in perceptions of bank value by customers and employees, as well as concerning the factors affecting customer perceived service quality have been developed. The formulation of the hypotheses, as well as the testing process is described in separate chapters.

Thesis Statements to be defended:

1. The modern concept of bank value should involve the elements of the sustainable stakeholder management theory.
2. It is possible to develop a linear regression model for measuring the value of a bank, which would simplify a valuation procedure and allow avoiding the problems related to the application of other appraisal methods.
3. Bank performance measurement system should be improved, keeping the balance between financial and non-financial measures.
4. The main driver of bank value is customers and their satisfaction with the level of service quality offered by the bank.

The Approbation and Practical Application of Research Results

The results of the research were discussed in the Republic of Latvia, Lithuania, Estonia, Belorussia, Poland, Czech Republic, Bulgaria, Italy, USA and China, and that is confirmed by the publications in the scientific issues.

The skills acquired during the research process were applied participating in the project „Developing of training methodology for sustainable performing of small and medium-sized enterprises based on the enterprise's life cycle” FLPP-2011/29 (01.02.2011 – 31.12.2011).

The research results were partly used within the lecture courses “Economics of Banking” and “Contemporary Problems in Banking” delivered at Riga Technical University.

Scientific Publications

The results of the Doctoral Dissertation have been presented in 26 scientific issues, int. al. 10 publications in **internationally generally accepted and reviewed collections of scientific proceedings:**

1. Titko, J. Lāce, N. Valuation Model for Latvian Banks // The 7th International Scientific Conference “Business and Management 2012”. – Selected Papers, May 10 – 11, 2012. – Vilnius: VGTU Publishing House “Technika”, 2012. – pp. 241-247. – ISSN 2029-4441, (ISI Web of Science)
2. Titko, J., Lāce, N. Service Quality Evaluation in Latvian Banking // Economics & Management, No. 17 (1) – Kaunas: Technologija, 2012. – pp. 304-310. – ISSN 1822-6515 (EBSCO)
3. Titko, J., Lāce, N. Interpretation of Customers’ and Employees’ Perception of Bank Value // The 17th IBIMA conference. – Proceedings of the 17th International Business Information Management Association “Creating Global Competitive Economies: A 360-degree Approach”, November 14 – 15, 2011. – Milan: IBIMA Publishing, 2011. – pp. 510-520. – CD ISBN 978-0-9821489-6-9 (ISI Web of Science)
4. Titko J., Lāce N. Bank Customers' and Employees' Perceptions of Value // RTU zinātniskie raksti „Ekonomika un uzņēmējdarbība”, 3. sēr., 21.sēj. – Rīga: RTU Izdevniecība, 2011. – pp. 85-90. – ISSN 1407-7337 (EBSCO)
5. Titko, J., Kozlovskis, K. Development of Bank Value Model // The 15th World Multi-Conference on Systemics, Cybernetics and Informatics: WMSCI 2011, July 19 – 22,

2011. – Orlando: International Institute of Informatics and Systemics. – pp. 143-148. – ISBN 978-1-936338-29-0 (ISI Web of Science)
6. Titko, J., Lāce, N. Riskiness of Latvian Banks and Incorporation of Risk Index into the Model for Estimations of Risk Premiums // International Conference on Social Sciences and Society (ICSSS 2011), October 14 – 15, 2011. – Shanghai, China. – pp. 112-117. – ISBN 978-0-9831693-4-5 (CPCI-SSH, Thomson Reuters)
 7. Titko, J., Lāce, N. Triangulation Research Design for Studying of the Concept of Bank Value // Economics & Management [Ekonomika ir vadyba], No. 16 – Kaunas: Technologija, 2011. – pp. 974-980. – ISSN 1822-6515 (EBSCO)
 8. Titko, J., Lāce, N. Customer Satisfaction and Loyalty in Latvian Retail Banking // Economics and Management [Ekonomika ir vadyba], No. 15 – Kaunas: Technologija, 2010. – pp. 1031-1038. – ISSN 1822-6515 (EBSCO)
 9. Titko, J., Lāce, N. Performance Measures for a Business Unit in Latvian Retail Banking // The 6th International Scientific Conference “Business and Management 2010”. – Selected Papers, May 13 – 14, 2010. – Vilnius: VGTU Publishing House “Technika”, 2010. – pp. 255-262. – ISSN 2029-4441, CD ISSN 2029-428X (ISI Web of Science)
 10. Titko, J., Lāce, N. Development of a Structural Model of the Concept of Bank Value // RTU zinātniskie raksti „Ekonomika un uzņēmējdarbība”, 3. sēr., 20.sēj. – Rīga: RTU Izdevniecība, 2010. – pp. 140-147. – ISSN 1407-7337 (EBSCO)

Other Publications:

11. Titko, J., Lāce, N. Banking Trends in New Member States of the European Union: Case of Latvia // “The World Economy and Business Administration in Small and Medium-Sized Enterprises”. – Materials of the 8th international scientific seminar. – Minsk: BHTY, 2011. – pp. 287-292. – ISBN 978-985-525-578-0
12. Titko, J., Lāce, N. Customer Satisfaction and Loyalty in Latvian Retail Banking // Programme and Collected Abstracts of International Scientific Conference “Economics and Management 2010”, April 22 – 23, 2010. - Riga: RTU Publishing House, 2010. – pp. 85-86. – ISBN 978-9934-10-018-5
13. Titko, J., Lāce, N. Development of a Structural Model of the Concept of Bank Value // 51. Rīgas Tehniskās universitātes konference SCEE’2010 “Scientific conference on

- Economics and Entrepreneurship”. – Conference abstracts, October 15, 2010. – Riga: RTU Publishing, 2010. - pp. 58-59. – ISBN 978-9934-10-061-1
14. Titko, J., Lāce, N. Bank Value in the Framework of the Concept of Sustainable Development // XIII International Scientific conference „Management and Sustainable Development”. – Programme and Abstracts, March 25 – 27, 2011. – Yundola: University of Forestry, 2011. – p. 70.
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 16. Titko J., Lāce N. Customers' and Employees' Perceptions of a Bank Value // 52nd International Scientific Conference of Riga Technical University: Conference Abstracts Proceedings, Latvia, Riga, October 7, 2011. – pp. 100.-101.
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 18. Titko, J. Komerbanku rezultātu prognozēšanas modelis // 52. RTU Studentu zinātniskā konference. – Konferences materiāli, aprīlis, 2011. – Rīga: RTU Izdevniecība, 2011. – 83. lpp. – ISBN 978-9934-10-260-8
 19. Titko, J., Lāce, N. The Competency Framework for the Bank Employee in Latvia // 50th International Scientific Conference of Riga Technical University „RTU FEEM Scientific conference on Economics and Entrepreneurship”. – Conference proceedings, October 15-16, 2009. – Riga: RTU Publishing, 2009. – 9 pages. (CD) - ISBN 978-9984-32-173-8
 20. Titko, J., Lāce, N. Valuation of a Commercial Bank in Emerging Markets: Case of Latvia // Management and Engineering, Vol. 3 (113). – Sozopol: Technical University – Sofia, 2009. - pp. 364.-374. – ISSN 1310-3946
 21. Titko, J., Lāce, N. The Competency Framework for the Bank Employee in Latvia // 50th International Scientific Conference of Riga Technical University „RTU FEEM Scientific conference on Economics and Entrepreneurship”. – Conference proceedings, October 15 – 16, 2009. – Riga: RTU Publishing, 2009. - pp. 40-41. – ISBN 978-9984-32-173-8

22. Лаце, Н., Титко, Е. Финансовый кризис: взгляд на банковский сектор Латвии // PRACE NAUKOWE: Aktualne problem funkcjonowania sektora bankowego v Polsce I Rosji, No.87 – Wrocław: Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu, 2009. – pp. 76-85. – ISSN 1899-3192
23. Titko, J., Lāce, N. Practical Application of Discount Rate Calculation Models to Valuation of Latvian Commercial Banks // 49th International Scientific Conference of Riga Technical University „The Problems of Development of National Economy and Entrepreneurship”. – Conference proceedings, October 9 – 13, 2008. – Riga: RTU Publishing, 2008. – (full paper) - ISBN 978-9984-32-567-5(CD)
24. Titko, J., Lāce, N. Practical Application of Discount Rate Calculation Models to Valuation of Latvian Commercial Banks // 49th International Scientific Conference of Riga Technical University „The Problems of Development of National Economy and Entrepreneurship”. – Conference proceedings, October 9 – 13, 2008. – Riga: RTU Publishing, 2008. – pp. 153-155. – (abstract) - ISBN 978-9984-32-567-5
25. Titko, J. The Problems of Calculation of Cost of Capital of Latvian Commercial Banks and Possible Solutions // VI International Scientific Conference „Management, Economics and Business Development in the New European Conditions”. – Conference proceedings, May 23 – 24, 2008. - Brno: Brno University of Technology, 2008. – (full paper) – ISBN 978-80-7204-582-2 (CD)
26. Titko, J. The Problems of Calculation of Cost of Capital of Latvian Commercial Banks and Possible Solutions // VI International Scientific Conference „Management, Economics and Business Development in the New European Conditions”. – Conference proceedings, May 23 – 24, 2008. - Brno: Brno University of Technology, 2008. – p.114. - (abstract) – ISBN 978-80-7204-582-2

The results of the Doctoral Dissertation have been presented at the **following international scientific conferences:**

1. 7th international scientific conference of Vilnius Gediminas Technical University, Vilnius, Lithuania, 10-11 May, 2012. Subject of the report: “Valuation Model for Latvian Banks”.

2. 17th international scientific conference „Economics and Management (ICEM 2011)”, Tallinn, Estonia, 28-30 March, 2012. Subject of the report: “Service Quality Evaluation in Latvian Retail Banking”.
3. International scientific conference “Contemporary Issues in Business, Management and Education 2011”, Vilnius, Lithuania, 17 November, 2011. Subject of the report: “Bank Value: Comparing Customer and Employee Perceptions”.
4. IBIMA 17th international conference “IBIMA 2011: Creating Global Competitive Economies: A 360-degree Approach”, Milan, Italy, 14-15 October, 2011. Subject of the report: “Interpretation of Customers’ and Employees’ Perception of Bank Value”.
5. International scientific conference “ICSSS 2011”, Shanghai, China, 14-15 October, 2011. Subject of the report: “Riskiness of Latvian Banks and Incorporation of Risk Index into the Model for Estimations of Risk Premiums”.
6. RTU 52nd international scientific conference “Scientific conference on Economics and Entrepreneurship”, Riga, Latvia, 7 October, 2011. Subject of the report: “Customers’ and Employees’ Perceptions of a Bank Value”.
7. 5th international scientific conference “WMSCI 2011”, Orlando, USA, 21 July, 2011. Subject of the report: “Development of Bank Value Model”.
8. RTU 52nd student scientific conference, Riga, Latvia, 9 May, 2011. Subject of the report: “Komerbankas rezultātu prognozēšanas modelis”.
9. 16th international scientific conference „Economics and Management (ICEM 2011)”, Brno, Czech Republic, 27-29 April, 2011. Subject of the report: „Triangulation Research Design for Studying of the Concept of Bank Value”.
10. International scientific conference “Current Problems of Banking Sector in the East European Countries”, Kudowa-Zdroj, Poland, 26-28 April, 2011. Subject of the report: “Conceptual Framework of Bank Value”.
11. 13th international scientific conference „Management and Sustainable Development”, Yundola, Bulgaria, 26 March, 2011. Subject of the report: “Bank Value in the Framework of the Concept of Sustainable Development”.

12. 8th international scientific seminar “The World Economy and Business Administration in Small and Medium-Sized Enterprises”, Minsk, Belorussia, 27 January, 2011. Subject of the report: “Banking Trends in New Member States of the European Union: Case of Latvia”.
13. RTU 51st international scientific conference “Scientific conference on Economics and Entrepreneurship”, Riga, Latvia, 15 October, 2010. Subject of the report: “Development of a Structural Model of the Concept of Bank Value”.
14. 6th International scientific conference of Vilnius Gediminas Technical University „Business and Management 2010”, Vilnius, Lithuania, 13-14 May, 2010. Subject of the report: „Performance Measures for a Business Unit in Latvian Retail Banking”.
15. 15th International scientific conference „Economics and Management 2010”, Riga, Latvia, 22 April, 2010. Subject of the report: „Customer Satisfaction and Loyalty in Latvian Retail Banking”.
16. RTU 50th international scientific conference „RTU FEEM Scientific conference on Economics and Entrepreneurship”, Riga, Latvia, 15-16 October, 2009. Subject of the report: “The competency framework for the bank employee in Latvia”.
17. 7th international scientific conference “MANAGEMENT AND ENGINEERING’ 09”, Sozopol, Bulgaria, 22-24 June, 2009. Subject of the report: „Valuation of a Commercial Bank in Emerging Markets: Case of Latvia”.

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In the first chapter “**Conceptual framework of bank value**” the author, based on the analysis of development and investment attractiveness of Latvian banking sector, proves the topicality of value management issues in Latvian banking sphere. In order to detect the factors affecting bank value, research was conducted which yielded the model of the concept of bank value.

In the second chapter „**Issues and peculiarities of measuring bank value**” the author examines the specific features of the process of measuring bank value and evaluates the potential of application of the company valuation methods for determination of the value of Latvian banks. The peculiarities of the calculation of the cost of equity in the Latvian market are emphasized. Within the chapter the riskiness of Latvian banking business is evaluated, using such measures as volatility of return on assets and risk index. These measures are involved into the model of cost of equity calculation developed by the author as risk evaluation criteria.

In the third chapter „**Model for measuring bank value**” the results of empirical research are reflected. Based on the analysis of the performance of European and Latvian banks, multifactor linear regression models for measuring bank value are developed. The models are tested for the determination of the value of European and Latvian banks.

In the fourth chapter „**Studying the improvement of value management in banks**” the factors affecting bank value are analyzed. The instruments for value management improvement in order to maximize it are suggested. The issues of determination and enhancing of the satisfaction level of bank retail customers, as well as opportunities of improvement of the bank performance measurement system, are in the focus.

In the final chapter of the dissertation the most important **conclusions and proposals** obtained during the research work are summarized.

The research tasks set for Doctoral Dissertation have been solved and the goal has been achieved.

The Doctoral Dissertation has been written at the Institute of Production and Entrepreneurship of the Faculty of Engineering Economics and Management, Riga Technical University, according to the requirements defined in the Law „On Scientific Activity” (05.05.2005), in compliance with the regulations of the Cabinet of Ministers No. 1001 as of 27.12.2005, the requirements of Latvian Council of Science and Doctoral Studies Provisions of Riga Technical University as of 29.06.2009. The Doctoral Dissertation has been elaborated with the support of the European Social Fund within the project «Support for the Implementation of Doctoral Studies at Riga Technical University».

MAIN SCIENTIFIC RESEARCH RESULTS

1. CONCEPTUAL FRAMEWORK OF BANK VALUE

The chapter consists of 37 pages and comprises 10 tables and 21 figures.

In order to explore the essence of the concept of bank value and to determine the factors affecting it, the author conducted research that is based on scientific findings of various finance theorists and practitioners (Briede 2000, Saksonova 2003, Copeland et al. 2002, Jensen 2001, Sinkey 2007, Horne 2002, Mankiw 1999, Damodaran 2007, Rutterford et al. 2006, Gitman 2006, Lee 2009, Arnold 2005 u. c.) in the field of banking and value management. The research consists of several stages.

In the initial stage the development of the concept in economics was studied. The interest in value and its estimations emerged simultaneously with the idea about barter exchange. The term “value” was introduced in 17th century by the English economist William Petty. Initially, the concept of value involved only the category of product value. With the appearance of new theories in economics and finance management the concept of value became more complex. The development stages of the concept of value, the economic and finance theories which were developed during these periods of time, and the main terms characterizing these theories are presented in Figure 1.

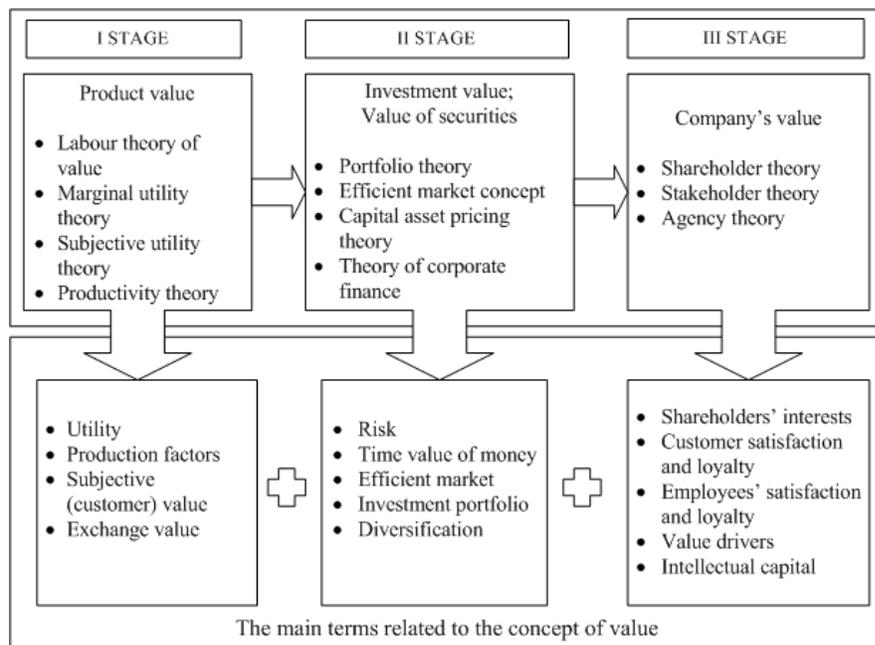


Fig. 1. Development stages of the concept of value.

Intangible elements of value are an integral part of the modern concept of value. It has been proved that intangible assets amount to about 75 per cent of company's value (Kaplan, Norton 2003).

Within the modern interpretation, the value is a measure of a company's performance and instrument of strategic management that reflects: (1) an actual state of a company and its future perspectives from the viewpoint of its owners, (2) a current market position of a company from the point of view of potential investors, (3) value of available tangible and intangible assets, and (4) risks and opportunities related to doing business.

However, considering the differences between financial and non-financial sector companies, it is important to clarify the term "bank value" and to determine its key components. In the author's opinion, it can assist in eliciting the factors affecting value creation. For this purpose a two-stage research was conducted.

In the first stage of the research the analysis of the definitions of the terms "bank" and "company value" was performed. It started with the qualitative data collection. Further, the initial volume of the information base was reduced, using the method of data categorization in order to distil units of meaning.

Analyzing the definitions of the term "bank", the formulation of categories was based on the functions of the financial system. Considering that the definitions analyzed also involved units of meaning with no regard to the functions of the financial system, additional categories were created: transformation and information cost reduction, stimulation of innovations and provision of financial services.

The software AQUAD 6.0 was used for quantitative processing of the data. Using the developed categories, the procedure of data coding was conducted. The analysis of the definitions was performed by means of classical and interpretative content analysis, i.e., transformation of the textual information into the quantitative measures with further statistical processing. Thus, in the first stage the sequential mixed research was conducted.

The quantification of codes yielded the frequency tables which provide the information about the frequency of appearance of the predefined codes in the definitions analyzed. The most frequently occurring codes were used to construct the model of the concept of bank value.

The first stage of the research is presented in Figure 2.

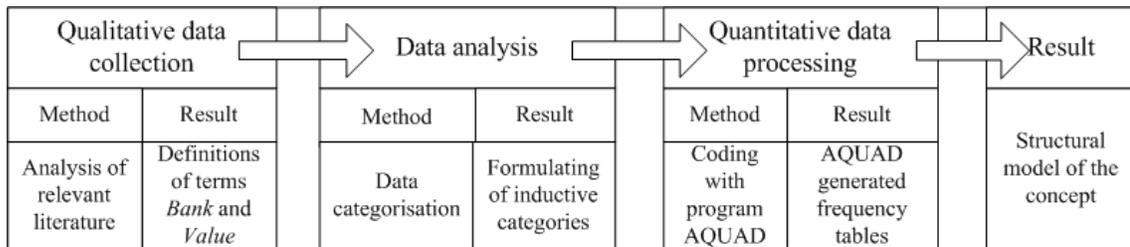


Fig. 2. The first stage of the research “Studying the concept of bank value”

In the second stage of the research the validity of the developed model was tested, using different qualitative and quantitative methods, i.e., triangulation. Thus, the research has a parallel-sequential mixed design and consists of three research phases:

1. Qualitative research that was aimed to prove that the modern concept of bank value should involve the elements of the concept of sustainable development.
2. Content analysis of the text segments containing the description of different value models by analogy with the first stage.
3. Verification of model validity, using the method of expert survey (Delphi method).

The second stage of the research is presented in Figure 3.

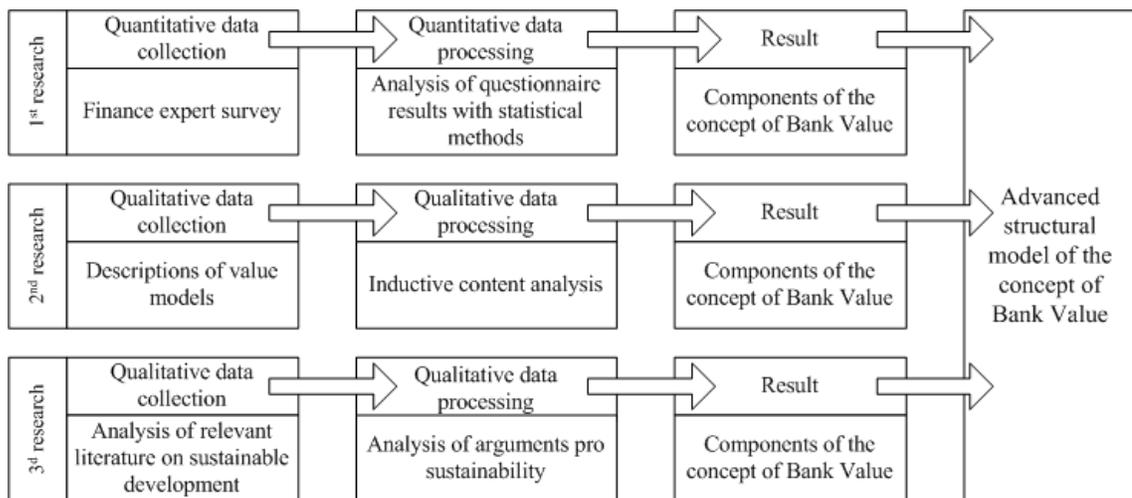


Fig. 3. The second stage of the research “Studying the concept of bank value”.

As it was mentioned above, the quantification of the qualitative information was performed, using the program AQUAD as a software tool. The process of AQUAD application is presented in Figure 4.

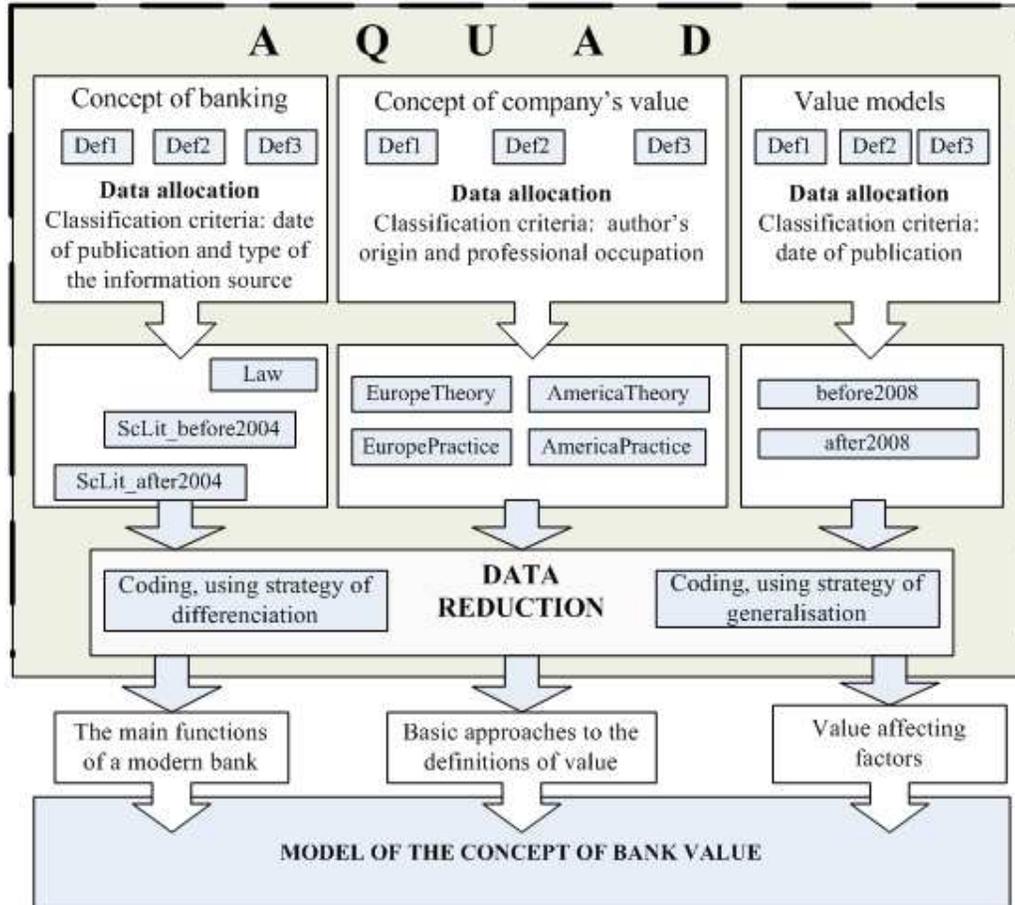


Fig. 4. AQUAD application in the research “Studying the concept of bank value”.

The obtained results allowed developing the structural model of the concept of bank value that is based on such finance and management concepts as the concept of modern banking, relationship value management, value-based management and sustainable stakeholder management (see Figure 5).

The concept of modern banking is in the center of the model. According to the concept, a modern bank not only performs traditional bank operations, such as deposit attraction and lending, but is also engaged in the processes of collecting, processing and disseminating of information, performs agent functions, reduces information asymmetry and risk, as well as generates innovations and stimulates their implementation. The following abbreviations are used in the model: (1) TBA – traditional banking activities, (2) KM – knowledge

management, (3) RM – risk management, (4) INFO – information processing, and (5) CF – cash flow.

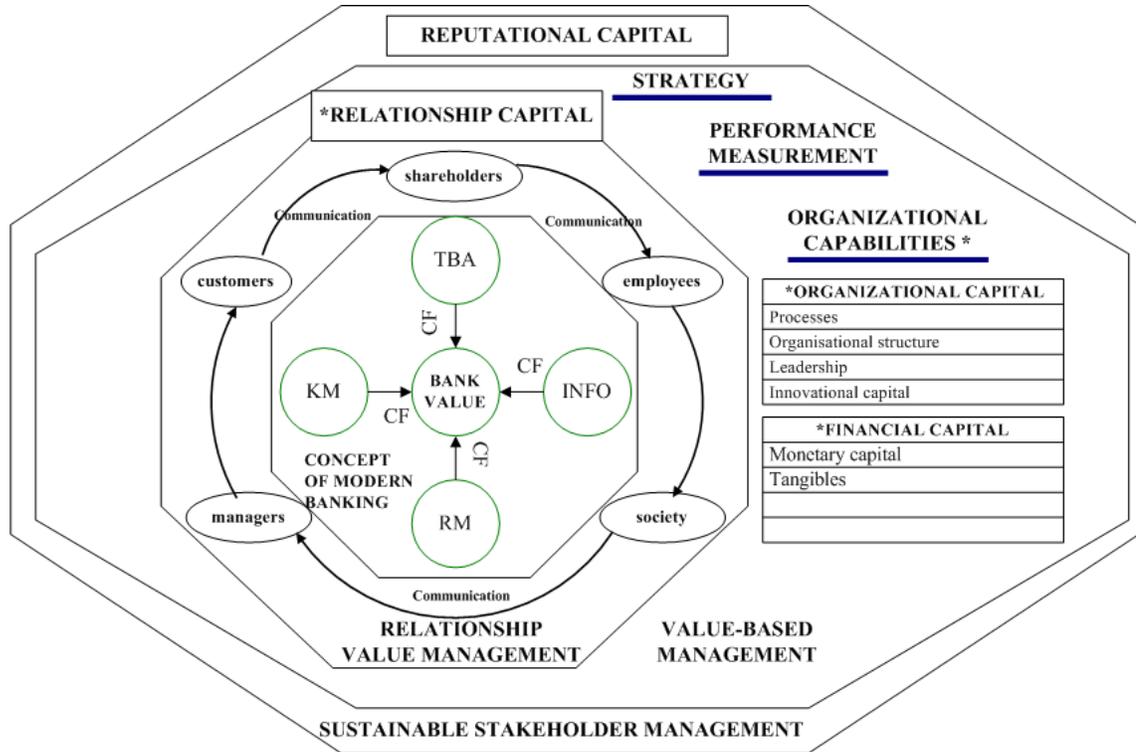


Fig. 5. The model of the concept of bank value

The main goal of a bank is to satisfy its shareholders, i.e., to maximize shareholder value and that, in turn, is the function of cash flow.

The interests of shareholders are prioritized, but there are also other stakeholders whose interests should be considered. According to the relationship value management (Payne et al. 2000), there are three main stakeholder groups – shareholders, customers and employees. The author also emphasizes the role of managers and society in the value creation process. These five groups form the relationship capital, which in combination with the financial capital and organizational capital determines bank capabilities. The relationship capital, financial capital and organizational capital unite tangible and intangible resources, which are necessary for value creation. In turn, according to the value-based management, a company should have a strategy that is focused on shareholder value and performance measurement (Arnold 2005).

The concept of sustainable stakeholder management was chosen as a comprehensive theoretical framework for the model (Jagersma 2009). It combines the ideas of the

stakeholder approach and the concept of sustainable development. The core of the sustainable stakeholder management is the reputational capital.

The elements of the developed model simultaneously are value drivers – the factors which stimulate value creation. By determination and intelligent management of value factors bank managers can positively influence cash flow that is generated by the bank. Consequently, bank shareholders' value will increase.

2. ISSUES AND PECULIARITIES OF MEASURING BANK VALUE

The chapter consists of 28 pages and comprises 11 tables and 2 figures.

The starting point of the process of value management is value estimation. Besides, the information about business value should be available at any moment in order to see the value changes. The knowledge of the value is necessary both for managers to make well-timed effective business decisions about how to enhance shareholder value, and for business owners, because they take a risk, buying company's shares.

In the opinion of various financial specialists (Damodaran 2007, Copeland et al. 2002, Francis, Ibbotson 2002) the value of a going concern is associated primarily with the present value of the future cash flows. However, there are different valuation methodologies that provide an estimate of a company's value. All the methods can be classified into three groups (Damodaran 2007, Jegerev 2003, Fedotova, Grjaznova 2003):

1. *Earning-based methods* use the fundamental principle of finance – time value of money (Fabozzi, Drake 2009). Using these methods, all future cash flows are estimated and discounted to determine the present value.
2. *Asset-based methods* use the principle of substitution: no rational investor will pay more for the business assets than the cost of procuring assets of similar economic utility. The value of a company is estimated as the difference between the value of assets and liabilities.
3. *Market-based valuation methods* estimate a company's value relative to that of another company.

Estimating the value of a bank, it is possible to use the methods appropriate to valuation of any other company. However, the process of bank value assessment has its own specific features that are related to the differences between doing business in financial and non-financial sectors.

Firstly, the capital of financial service companies has different interpretation from that used in case of non-financial sector companies. Talking about non-financial service companies, the capital includes both debt and equity. For financial service companies, debt is viewed not as a source of capital, but rather as a raw material – something to be transformed into other financial products which can then be sold at a higher price and yield a profit (Damodaran 2007). Consequently, capital at financial service firms seems to be defined as equity capital only.

Secondly, banking sector tends to be heavily regulated and changes in regulatory requirements can have significant effect on the value. Banks are required to maintain regulatory capital ratios. Thus, estimating the value of a bank, it is necessary to take into account the limitations related to the minimum capital requirements.

Valuation specialists consider that a valuation of a financial institution can be undertaken mainly using earnings-based methods (Copeland et al. 2002, Jegerev 2003, Sinkey 2007). It is related to the limitation in the application of other valuation methods for measuring the value of a bank.

Using the asset-based approach to valuation, the potential income that can be generated employing the available assets and liabilities is ignored. Besides, applying this method, the value of hidden assets (unique bank technology, bank customers' loyalty, staff competence and bank-customer relationship value) is not estimated (Nikonova, Shamgunov 2007).

Market-based valuation methods use price or enterprise value multipliers, such as price/earnings (P/E) ratio or EBIT multiplier (Damodaran 2007, Dermine 2010). However, the application of this methods impossible, if: (1) the statistical information about bank market capitalization is not available and (2) P/E multiplier cannot be used for valuation of a bank with negative profit. As for Latvian banks, the application of the market-based methods is limited due to both reasons. There is no available statistics about P/E ratio of local banks, because the stocks of Latvian banks are not quoted. Using P/E multipliers of European banks, the reliability of the obtained results is doubtful due to the specifics of Latvian banking business. Besides, almost all Latvian banks had a negative profit in 2009 – 2010.

Thus, the method of Discounted Cash Flow (DCF method) is the most appropriate method for Latvian banks. Using the argument that the only cash flows that a stockholder in a publicly traded firm receives are dividends, equity is valued as the present value of the expected dividends (Damodaran 2007). However, to apply dividend discount model (DDM)

properly, it is necessary to predict values of future dividends using retrospective information. Many of Latvian commercial banks do not pay dividends or pay them irregularly. That is why the application of the free cash flow to equity discount model (FCFEDM) is better justified. Cash flow available to shareholders is an index that reflects potentially possible volume of dividends a bank can afford to pay (CFA 2010). The main issues are (1) to make a good forecast of the future cash flows, and (2) to determine a discount rate (cost of equity) properly.

Capital assets pricing model (CAPM) is the most frequently applied method for the calculation of the cost of equity that is described in the scientific publications by many financial experts (Gitman 2006, Fabozzi, Drake 2009, CFA 2010, Evans, Bishop 2001, Copeland et al. 2002, Damodaran 2007).

CAPM is used in finance to determine a theoretically appropriate required rate of return on an asset, if that asset is to be added to an already well-diversified portfolio, given the non-diversifiable risk associated with the asset. The model takes into account the asset's sensitivity to non-diversifiable risk (also known as systemic risk or market risk), often represented by beta (β) index in the financial industry, as well as the expected return on the market portfolio and the expected return on a theoretical risk-free asset (Vernimmen et al. 2009).

Applying this model in the Latvian market we faced significant challenges, which are related to the determination of the model components (risk-free rate of return, market risk premium and beta coefficient).

Risk free rate. The interest rate on government bonds is often used as the risk-free rate on condition that investment into these financial instruments has a really minimal risk (Damodaran 2007, Copeland et al. 2002, CFA 2010). Is it possible to consider the bonds issued by the Latvian government as risk-free assets? Latvia's long-term ratings in the local currency according to Fitch, Moody's and Standard&Poor's are BBB-/Baa3/BB+ respectively. These ratings are in the speculative class. Besides, according to the Brookings Institution survey "Index of State Weakness in the Developed World", Latvia is among underdeveloped countries (Rice, Patrick 2008). Thus, using of Latvian bonds as risk-free assets depends on the investor decision and his willingness to take the risk.

Some authors suggest using such kind of substitutes for the risk-free rate: (1) interest rate offered by central bank for the deposits in foreign currency (Fedotova, Grjaznova 2003),

(2) annual average rate of refinancing of the central bank adjusted to inflation rate (Nikonova, Shamgunov 2007), (3) LIBOR adjusted to sovereign risk premium (Rutgaizer, Budicky 2007, Nikonova, Shamgunov 2007).

In the opinion of the author, using of the refinancing rate is not correct. The rate reflects the price of the money that is sold by the central bank. It is not return on assets. Using LIBOR is not possible on the same considerations. It is the average interest rate that the leading banks in London charge when lending to other banks. Besides, the parity principle is not considered (Damodaran 2007). Cash flows of Latvian banks are nominated in Lats. Thus, risk-free rate should be also nominated in Lats.

The author of the dissertation recommends the following substitute for the risk-free rate:

1. Rate of return on the Latvian government bonds if a potential investor is ready to accept it. The maturity of the bonds should correspond to the chosen period of projecting of the cash flow.
2. The weighted average yield of long-term bonds of states with rating AAA (for instance Germany, France, Canada etc.).
3. Average deposit rate offered by the largest and safest banks of a country.

Market risk premium. Calculation of the market risk premium is based on market index data for the long-term period (Copeland et al. 2002, Dimson et al. 2002, Officer, Bishop 2008). Riga Stock Exchange was established in 1993. Thus, due to the limited volume of the information the results of the similar research in Latvian market will have low statistical power. Using 10 – 20 year long period, the value of standard error can be even higher than the estimated premium (Damodaran, 2007).

Analyzing the viewpoint of various researchers on this issue (Damodaran 2007, Nikonova, Shamgunov 2007, Haden, Goedhart 2003), the author concludes that the only possible solution is to use the base premium for a mature stock market (for instance, the USA) adjusted by the sovereign premium.

Beta coefficient. There is no efficient, developed and sophisticated capital market in the Baltic Region to make a calculation of beta coefficient properly. Besides, the stocks of Latvian banks are not quoted. To determine beta coefficient, the author recommends:

1. Use publicly available data about the coefficient offered by various companies – for instance, Barra, Value Line and Bloomberg.

2. Use the regression model as a substitute for CAPM. A. Damodaran recommends determining correlation between company's profit dynamics and dynamics of return on the market as a whole (Damodaran 2007). Considering this recommendation, beta coefficient for Latvian banks can be calculated, using the following formula:

$$\Delta \text{bank's profit} = \alpha + \beta \times \Delta \text{OMX Riga} \quad (1)$$

The authors of the article recommend using the value of net operating income to substitute the price of bank's shares. The net operating income fits better for this purpose, because its value directly depends on market situation. In turn, the value of profit also depends on the sum of administration costs, amortization and doubtful loans provisions.

The calculation of beta coefficient for Latvian banks performed by the author yielded non-adequate results – beta for some banks was negative. These findings point to the fact that the only solution is using publicly available data about beta coefficient, estimated for banking sector of other countries (Damodaran 2012, Eisenbeiß et al. 2005, King 2009). Is it correct to use these values? It depends on the viewpoint of appraisals and potential investors.

To avoid the problems related to the application of CAPM, the author suggests using the alternative variant for the estimation of cost of equity – build-up model. The basis of calculation is the return on risk-free investment. The risk premiums to compensate the risk of investment into the company are added to the risk-free rate.

The author of the dissertation suggests evaluating 9 risk premiums specific of the banking business (see Table 1). The level of risk is divided into three categories: low “↓” (0% – 1%), medium “~” (2% – 3%) and high “↑” (4% – 5%).

To reduce the subjectivity of the model application, the author involves into the model mainly the risk premiums which can be evaluated based on quantitative criteria. For instance, profitability of a bank is evaluated, using return on equity (ROE) or return on assets (ROA). Risk premium can be estimated, comparing ROE of a bank with the average industry level. Evaluating income stability of a bank, the author suggests using standard deviation of ROE or ROA.

Table 1

Risk premiums for the model for calculation of the cost of equity

No	Risk premium	Risk	Evaluation criteria
1	Industry risk	↓	Banking sector is strictly regulated by law; bank law corresponds to the EU requirements; banking sector is stable; most of the banks have long and successful history of business activity; almost all banks have investment grade ratings; the shares of most banks are quoted on the stock exchange.
		~	Banking sector is stable, but its development depends on macroeconomic situation in a state; a small number of banks have investment grade ratings; banks' shares are not quoted on the stock exchange.
		↑	Banking sector is at the development stage; regulation system is under construction; low entry barrier into the sector; a lot of new banks.
2	History of business activity	↓	Bank operates in the Latvian market for more than 10 years.
		~	Bank operates in Latvia for more than 5 years.
		↑	A new bank (less than 5 years in the market).
3	Size of the bank	↓	Market share in terms of total assets over 10%.
		~	Market share in terms of total assets from 5% to 10%.
		↑	Market share in terms of total assets under 5%.
4	Customer confidence	↓	Market share in terms of deposits over 10%.
		~	Market share in terms of deposits from 5% to 10%.
		↑	Market share in terms of deposits under 5%.
5	Profitability; predictability of revenues	↓	ROA of the bank is higher than the average index in the industry. Standard deviation of ROA is under 1%.
		~	ROA is about average index in the industry. Standard deviation of ROA is from 1% to 2%.
		↑	ROA is under the average index in the industry. Standard deviation of ROA is over 2%.
6	Availability of funds	↓	The bank is a part of an international financial group.
		~	The bank is privately owned, but it has opportunities of borrowing money in the international market.
		↑	Small private bank.
7	Probability of insolvency	↓	Risk index is over 10.
		~	Risk index is in the range between 5 and 10.
		↑	Risk index is close to 0 or negative.
8	Diversification of products and services	↓	Universal bank. Bank's group includes companies, offering different financial services. Bank offers unique products.
		~	Universal bank, but concentrates on some products.
		↑	Specialized bank.
9	Territorial diversification	↓	The bank has large number of branches in Latvia and also in foreign countries.
		~	The bank has sufficiently large number of branches, but only in Latvia.
		↑	The bank has a limited number of branches.

The author recommends evaluating probability of insolvency, incorporating the risk index into the model (Hannan, Hanweck 1988). Using this index, it is possible to determine the probability at which the bank losses exceed the bank's equity.

The model involves only three premiums the evaluation of which is entirely based on expert subjective estimation: (1) industry risk, (2) diversification of products and services, and (3) territorial diversification.

To check the reliability of the obtained results, using the build-up model, the author has used expert method. The employees of Latvian banks were offered to evaluate risk premiums, using the author's recommended criteria and their own subjective view of the current situation in their bank and its future development. Summing up all the rates, the total risk score for each bank analyzed was received. In total, 19 experts evaluated the riskiness of their banks. The scores were in range from 5 per cent to 33 per cent.

To calculate the cost of equity, the value of the risk-free rate of return should be added to the scores given by the experts. The author has used the rate of return on 10-year bonds issued in 2012 by the Latvian government as the risk-free rate. In turn, cost of equity estimation, using CAPM, will be equal for all the banks. The value of the cost of equity depending on the estimation method is presented in Table 2.

Table 2

Cost of equity for Latvian banks

Cost of equity, using CAPM			Cost of equity, using build-up model	
CAPM components	Value	Information source	Model components	Value
Risk-free rate	6,625%	Rate of return on Latvian government bonds	Risk-free rate	6,625%
Market risk premium	9%	Estimated value for Latvia (Damodaran 2012)	Total risk score, provided by experts	5% – 33%
Beta coefficient	0,67 – 1,50	Estimated value for banking sector of other countries (Damodaran 2012, Eisenbeiß et al. 2005, King 2009)	-	-
Cost of equity	12,66% – 20,13%		11,66% – 39,66%	

Comparing the obtained results, the author concludes that the application of CAPM in the Latvian market cannot provide sufficiently reliable results. The situation of each bank is unique, and it is not possible to use any kind of unified formula to calculate the cost of equity for all the Latvian banks. However, CAPM is a very popular model. Besides, foreign

investors probably will be dissatisfied with the cost of equity that is calculated based on subjective judgments of local experts.

Considering the difficulty of predicting the value of cash flow, as well as taking into account the limitations related to the estimating of the cost of equity in the Latvian market, the author suggests the alternative to the discounted cash flow model – the multifactor regression model for measuring the value of a bank.

3. MODEL FOR MEASURING BANK VALUE

The chapter consists of 22 pages and comprises 10 tables and 28 figures.

The information about company value is necessary to manage business activities effectively. However, the application of complicated valuation procedures is often not practical. Business owners need a simple, but logical and valid formula that allows measuring the value of a business at any moment of time (Guljajev 2006).

The author of the dissertation suggests creating a multifactor linear regression model for measuring the value of a bank, using the following algorithm (see Figure 6).

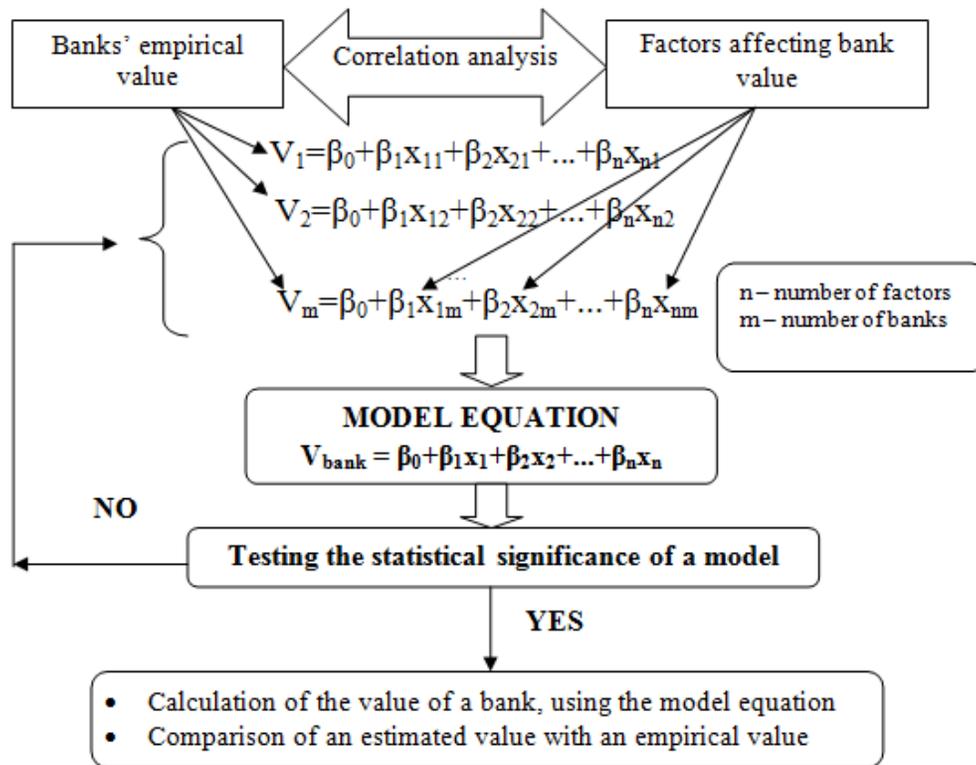


Fig. 6. The algorithm for creating the model for measuring the value of a bank

Considering that the shares of Latvian banks are not quoted at the stock exchange and the data about market capitalization is not available, the empirical value of banks was calculated using market-based method. The average price-to-book ratio for banks of Central and Eastern Europe region was used as a multiple. It was not possible to use PE ratio, because since 2008 almost all Latvian banks end the year with losses.

To choose the arguments for the model, the author has analyzed performance indicators of twenty banks, which were combined into five groups (see Table 3).

Table 3

Bank performance indicators

No.	The name of the group	Performance indicators
1	Profitability and efficiency indices	ROA – return on assets; ROE – return on equity; NIM – net interest margin; CI – cost-to-income ratio.
2	Income and cash flow statement indices	NII – net interest income; NFCI – net fee and commission income; SE/C – staff expenses as a percentage of total costs; NII/I – net interest income as a percentage of total income; II/IE – interest income to interest expenses; CF – cash flow for the year.
3	Balance sheet indices	D/L – deposits to loans; L/A – loans to assets; A – total assets; D – total deposits.
4	Asset quality	NPL/L – non-performing loans to total loans; P – provisions for doubtful loans; P/L – provisions to loans.
5	Capital adequacy	CAR – capital adequacy ratio; E/A – equity to assets; E/L – equity to liabilities.

The values of Pearson's correlation coefficient between bank value and performance indicators were calculated based on processing of statistical information over the period of 2006-2010. Considering the median value for the set of correlation coefficients, the indicators with the strongest relation with bank value are: (1) ROA, (2) ROE, (3) cost-to-income ratio, (4) net interest income to total income, (5) non-performing loans to total loans, (6) provisions, (7) provisions to loans, and (8) interest income to interest expenses.

The return on equity seems to be the most appropriate argument for our model ($r = 0.668$). Considering that ROE and ROA are strongly related, it is not essential which of them will be used in the equation. We give priority to ROE, just because it has a higher average

correlation coefficient than ROA. However, the analysis of cross-correlation tables indicates that there is the problem of multicollinearity. There is a strong linear correlation between ROE and other indices.

So, it is clear that we cannot simultaneously use ROE and value of provisions, or ROE and non-performing loans to total loans in the same model. However, we can try to combine ROE and cost-to-income ratio. Besides, we can exclude ROE from the model and use combination of other indices.

Based on the results of the correlation analysis, twelve variants of the model were created, using *Regression* application of SPSS software. Performance indices from bank reports of 2010 were used for this purpose.

After testing the statistical significance of the developed models and their coefficients, the optimal regression model was chosen. It involves two arguments: (1) NII – net interest income, and (2) P – provisions for doubtful loans. The model is expressed by the following equation:

$$Vbank = 2,038 \times P + 3,693 \times NII \quad (2)$$

Descriptive statistics for the model and its coefficients are presented in Figure 7.

Model summary						
R	R Square	Adjusted R Square	F	Sig.	Durbin-Watson	
.960	.922	.912	94.014	.000	2.116	
Coefficients						
Model	Non-standardized Coefficients		t	Sig.	Collinearity Statistics	
	B	Std. Error			Tolerance	VIF
P	2.038	.653	3.123	.007	.237	4.212
NII	3.693	.977	3.779	.002	.237	4.212

Fig. 7. Descriptive statistics for the model with arguments P and NII

For a confidence level of 95 per cent, if „significance F" is less than 0.05, then the null hypothesis is rejected (there is a statistically significant association between dependent variable and independent variables). The significance F for the model is equal to 0.000. R-squared of the model is equal to 0.922, indicating that 92.2 per cent of the variability in the bank value is explained by this model. Durbin-Watson statistics is greater than its upper

critical value ($D_U = 1.53$), which indicates that there is no autocorrelation in the residuals (Arhipova, Balina 2006).

As for regression coefficients, p-values for both are less than 0.05 (for Provisions $p = 0.007$, for NII $p = 0.002$). It means that both coefficients are not equal to zero with a probability of 95 per cent. The variance inflation factor ($VIF = 4.212 < 10$), which indicates that there is no multicollinearity (Cohen et al. 2003).

The values of the banks analyzed that were estimated using PB multiple and the developed model are presented in the Figure 8.

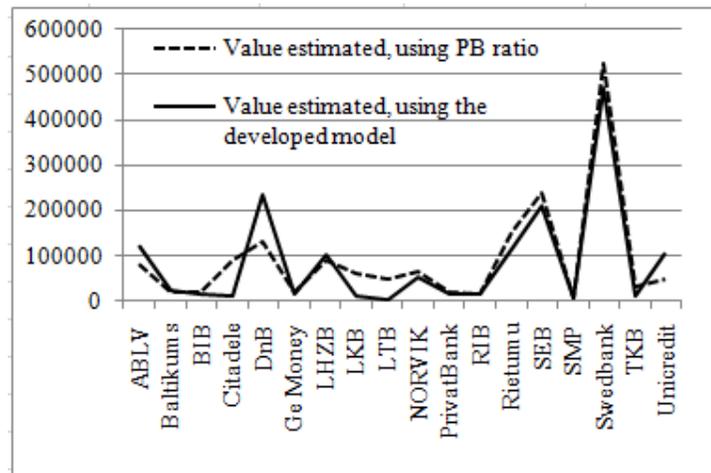


Fig. 8. Value of banks estimated using PB ratio and the regression model.

In most cases the estimated function values are lower than the values estimated using market-based approach. However, this can be explained by the fact that only financial ratios were used as arguments for the model.

As for the value of residuals, the gap between the model estimated value and market data based value exceeds 50 per cent for seven banks. It points to the fact that despite high statistical significance, the developed model does not provide sufficiently accurate results.

There are many reasons for it. Firstly, the results of the correlation analysis largely depend on the potential value of banks. The author used price-to-book ratio in this research. However, another option exists. The business magazine "Kapitals" together with the Agency of Investment Banking "IBS Prudentia" and the Latvian representative of the stock exchange NASDAQ OMX publish the list of Latvian most valuable companies. The value of Latvian banks has been calculated since 2007. The author of the dissertation does not use this data,

because currently only 13 Latvian banks are included in this list. However, it is a good information source for future research.

Besides, the idea to involve non-financial indicators into the model can be realized. At the moment, the information about only one non-financial measure is available for Latvian banks. This is EPSI rating – the index to measure customer satisfaction and loyalty in European countries. It was impossible to conduct a full correlation analysis, because usually EPSI is estimated for the banking sector as a whole. As for separate banks, the author has received the information about EPSI for only three largest Latvian banks since 2006. If such kind of data is available in the future, it will be possible to use the rating as an argument for the model. Secondly, Latvian companies have been given the sustainability rating for the last three years. In 2011, only three Latvian banks – Nordea Bank Finland Latvian subsidiary, Swedbank and SEB Bank – were rated. If the number of rated banks increases, it will be possible to use the information about sustainability index for similar research in the future.

4. STUDYING THE IMPROVEMENT OF VALUE MANAGEMENT IN BANKS

The chapter consists of 54 pages and comprises 34 tables and 16 figures.

Value management assumes that a company's goals, its systems, strategy, business processes, performance measurement system and culture are aligned with long-term maximization of shareholder wealth (Arnold 2005). Besides, according to value-based management, company's managers should concentrate their efforts on the activities and management decisions, which create the basis for getting the return on the invested money in the future (Valdaicev 2008). The process of making management decisions should be based on key value factors (Copeland et al. 2002). Thus, value management is a process of management of value factors in order to maximize value.

Various factors stimulate value creation. For instance, professional business management, properly developed strategy, staff competence, etc. However, it is difficult to win in all the areas. It is necessary to choose factors to be prioritized.

In the dissertation the attention is focused primarily on the following value factors:

- **Bank performance measurement system.** It has been proved that business efficiency largely depends on the existing performance measurement system (Copeland et al. 2002). Company's managers can monitor business results and detect the level of a company's soundness, using performance indicators (Dobbs et al. 2005). Considering that each

department of the company should have its own efficiency measures and targets (Copeland et al. 2002), in the present dissertation the process of development of the performance measurement system was studied at the bank branch level.

- **Bank staff productivity, competence and emotional intellect.** According to the viewpoint of various researchers there is a strong relationship between staff professional competence, emotional intellect and customers' share of wallets (Beaujean et al. 2006, Coyne et al. 2000, Croxford et al. 2005).
- **Customer satisfaction and loyalty.** Based on the opinion of many financial experts, satisfied and loyal customers are the main driver of company's profitability (Reicheld, Sasser 1990, Storbacka et al. 1994, Hallowell 1996, Jamal, Anastasiadou 2009, Beerli et al. 2004).
- **Bank service quality.** Provision of a high quality service helps to attract new customers and retain the existing customers. That, in turn, lowers operating costs, improves productivity and enhances cash flow from business activities (Chi Cui et al., 2003; Ladhari et al., 2011; Abdullah et al. 2010).

The development of the performance measurement system is one of the key elements of value management concept. The reason of failure of using some management approaches was performance targets that were not properly aligned with the ultimate goal of creating value. Besides, the corporate objectives should be translated into the set of measures appropriate to each particular business group.

Based on the results of the survey of Latvian bank employees, the author of the dissertation has developed the performance measurement system appropriate for a bank branch that includes both financial and non-financial indicators (see Figure 9).

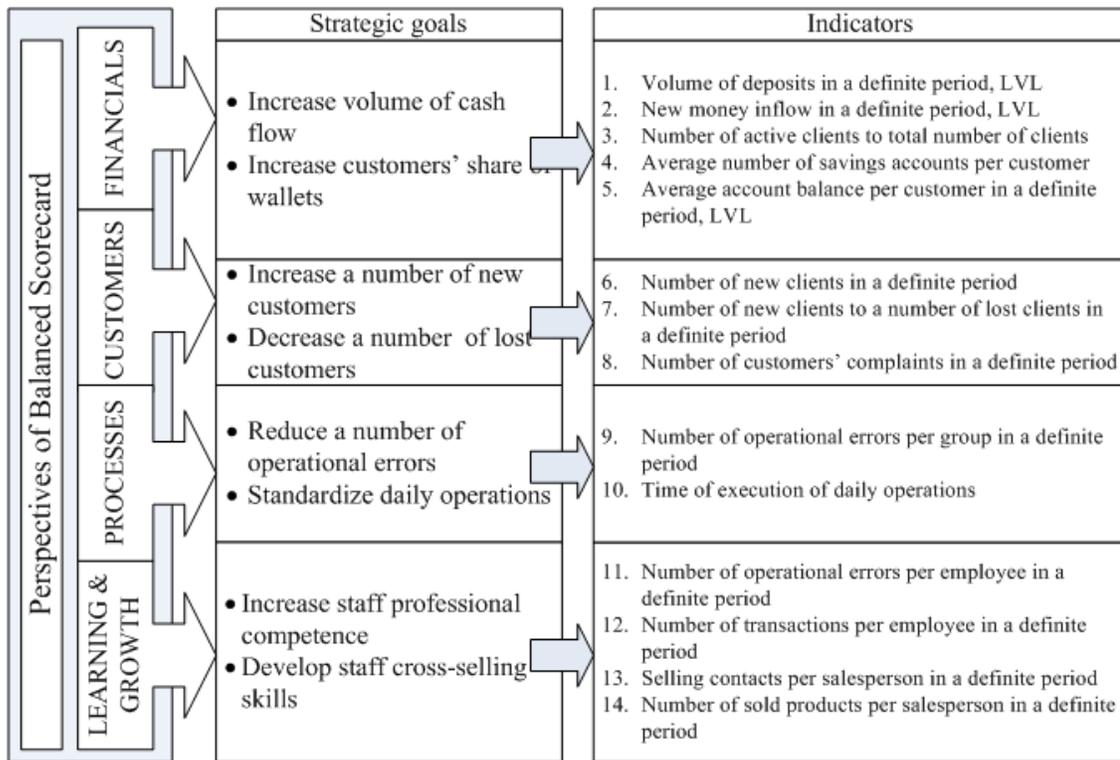


Fig. 9. Performance measurement system for a bank branch

The system is based on the principles of balanced scorecard: quantitative indicators correspond to strategic goals and are combined into four groups. The author has incorporated 14 measures into the model that can be complemented with the range of metrics related to specific banking products. The choice of these additional measures is conditioned by strategically important product lines for a bank at each specific moment.

It is most important for bank top executives in developing a performance measurement system to pay attention not only to financial indicators and selling results. Undervaluation of the importance of non-financial measures can lead to increasing number of operational errors and decrease of service quality.

Sustainable value creation is built on creation of distinctive customer value and competitive advantage that allows a company to deliver superior shareholder returns over the long term (Olsen et al. 2009). Companies get a competitive advantage when customers choose to buy from them instead of from their competitors (Coyne et al. 2000).

To survive in the competitive struggle, banks should retain the existing customers and attract new ones. Thus, in order to ensure long-term profit growth, banks should care about enhancing customer satisfaction and loyalty. The most important determinant of customer

satisfaction is service quality as perceived by bank clients. The key to building a competitive advantage is a bank's ability to deliver a high-quality service that meets the needs and expectations of the customers (Ennew, Waite 2007). Providing superior service quality contributes to profitability due to enhanced customer loyalty and, as consequence, higher customer retention (Abdullah et al. 2010, Rostamy 2009).

The author of the dissertation has developed service quality measuring methodology that allows:

1. Evaluating service quality as perceived by retail clients and employees of Latvian banks;
2. Determining the factors affecting customers' decisions to buy new bank products;
3. Determining and evaluating the factors affecting customers' decisions about terminating the relationships with a bank.

To achieve the purpose of the present research, the author developed questionnaires which were mailed to randomly selected bank customers and employees. The questionnaires are similar and consist of several blocks of questions (see Figure 10).

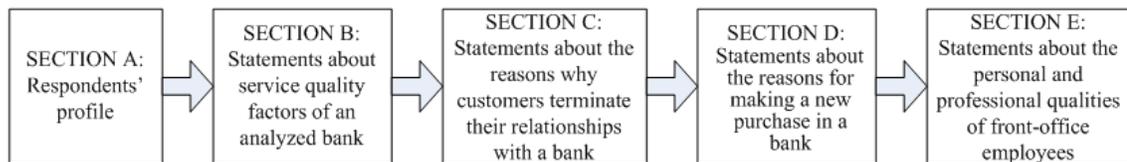


Fig. 10. The structure of the questionnaire for the research „Bank value perceived by bank retail customers and employees”

The main question pool is presented in section B. There are statements about service quality factors (factors affecting bank value as perceived by the customers) of an analyzed bank. Questions are formulated based on the statements from the SERVQUAL model (Zeithaml et al. 1990) that is widely applied to measure service quality in banking (Rostamy 2009, Abdullah et al. 2010, Avkiran 1994, Bahia, Nantel 2000). Considering the results of the focus group interview conducted by the author in September, 2011, initially, the number of statements in section B was 28 and they were grouped into 8 dimensions (see Table 4).

Table 4

The author's suggested service quality dimensions

No.	Service quality dimension	Section B questions
1	Physical surroundings	Questions 1 – 3
2	Product	Questions 4 – 8
3	Trust	Questions 9 – 12
4	Empathy	Questions 13 – 15
5	Responsiveness	Questions 16 – 19
6	Competence	Questions 20 – 22
7	Access	Questions 23 – 26
8	Price	Questions 27 – 28

The research was conducted from October 2011 till April 2012. The total of 301 questionnaires completed by bank retail customers and 102 questionnaires completed by bank employees were collected.

To test whether the questions from section B are appropriate to measuring service quality, Cronbach's alpha was applied (Nasledov 2007). Cronbach's alpha for the whole measuring scale is equal to 0.924, and that attests high internal consistency of the questionnaire.

The reliability of the scale was assessed by means of factor analysis. To examine the appropriateness of factor analysis, Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) and Bartlett's Test of Sphericity were used (Nasledov 2007). $KMO = 0.917 > 0.9$, which indicates absolute adequacy. $P\text{-value of Bartlett's Test of Sphericity} = 0.000 < 0.05$, which points to high appropriateness of factor analysis to the given sample.

Factor analysis was performed in three stages until the only variables with factor loadings above 0.5 were retained (Avkiran 1999, Abdullah et al. 2010). The results of the third stage of factor analysis are presented in Table 5.

Table 5

The results of factor analysis

No.	Service quality elements	Factors				
		F1	F2	F3	F4	F5
1	Staff readiness to correct mistakes	.752				
2	Individual attention to customers	.748				
3	Staff courtesy	.741				
4	Staff supportiveness	.724				
5	Staff willingness to help	.711				
6	Staff knowledge	.697				
7	Operational errors	.560				
8	Branch atmosphere		.726			
9	Visual appearance of employees		.708			
10	Interior décor and leaflets		.685			
11	Technological capability		.644			
12	Reputation		.533			
13	Branch and ATM network			.785		
14	Location			.752		
15	Operating hours			.744		
16	Product quality				.719	
17	Safety of transactions				.717	
18	Usability of products				.603	
19	Price					.726
20	Service speed					.607
21	Benefits from the usage of products					.511

After the factor analysis 9 elements were dropped from the scale leaving only 21 items in the final questionnaire. Five factors were extracted:

- **F1: Staff competence and emotional intellect** – service quality elements related to knowledge and professional experience of bank employees, staff attitude to clients and behavior style;
- **F2: Bank image** – service quality elements, which create an impression on customers, but are not directly related to bank products and services;
- **F3: Access** – service quality elements, characterizing the availability of products and services;
- **F4: Product** – service quality elements related to usability and safety of bank products;
- **F5: Expenses** – service quality elements related to customers' money and time costs, using bank products and services.

Since the number of service quality elements has been reduced, Cronbach's alpha for the whole scale is equal to 0.896, which indicates good internal consistency. However,

analyzing the results, the author has concluded that the element “operating hours” should be excluded from the scale. If it is deleted, Cronbach’s alpha for the dimension “access” will increase to 0.801. Thus, the number of remaining items is 20.

Using SERVPERF model, the difference in perception of service quality dimensions by bank customers and employees was determined (see Table 6). Respondent code: 1 – bank employees, 2 – bank customers.

Table 6

Difference between bank retail customers’ and employees’ evaluation of service quality factors

Service quality factor	Respondent code	Mean	Statistical significance of the difference	Mean difference
Service quality score	1	4.306	.147	.076
	2	4.230		
Staff competence and emotional intellect	1	4.381	.038	.136
	2	4.245		
Bank image	1	4.229	.264	-.0696
	2	4.299		
Access	1	4.17	.475	-.066
	2	4.24		
Product	1	4.42	.847	-.013
	2	4.43		
Expenses	1	4.24	.147	.076
	2	3.87		

The difference between customers’ and employees’ evaluation is statistically significant only in relation to the factor “staff competence and emotional intellect”. The evaluation of employees is higher than the evaluation of customers. It means that bank employees perceive the situation regarding the service level and emotional aspect of service more positively than the customers. Service quality in total is also evaluated higher by employees, but the difference is not statistically significant.

Based on the results of the processing of the whole data base, it is possible to determine the contribution of each service quality factor to total service quality score and to overall customer satisfaction. For this purpose the author used Spearman rank correlation coefficient. The reason for using this coefficient is the fact that sample variables are not normally distributed.

Based on the results of the correlation analysis, the bank service quality factor model was developed (see Figure 11).

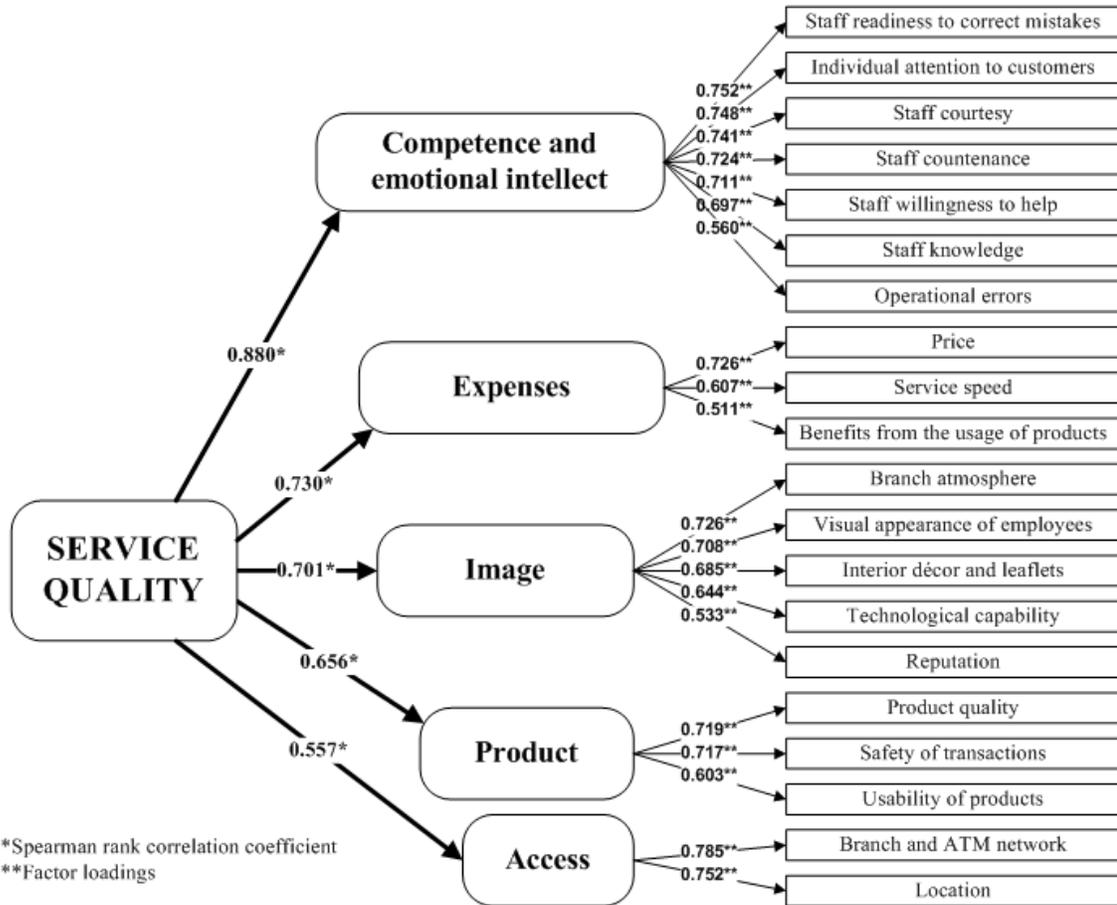


Fig. 11. Bank service quality factor model.

From the viewpoint of bank retail clients, the strongest relationship is between service quality and the factor “competence and emotional intellect” that involves the service quality elements related not only to staff knowledge, but also to the emotional aspects of the service.

Having analyzed the respondents’ answers to the questions of section C, the factors that can force customers to leave their bank were determined (see Table 7).

Table 7

Factors affecting customers' decision about terminating the relationships with a bank –
evaluation of importance

Factor	Factor importance	
	Customers' viewpoint	Employees' viewpoint
Problems related to usage of bank products (problems with ATM, delay in money transfer)	4.41	4.33
Frequent operational errors of employees	4.26	4.41
Negative experience with a servicing bank. Staff inability solve the problems quickly	3.81	3.96
Not polite service	3.76	4.36
Rise in commission fees	3.70	3.66
Negative information in mass media	3.64	4.05
Attractive offer of another bank	3.63	3.82
Long waiting in queue	3.41	3.43
Closing of the conveniently located branch	3.04	3.70

As it was assumed, the competence, emotional intellect and empathy of bank front office staff play a crucial role in relationships between bank and its clients.

Despite the high level of customer loyalty in Latvian retail banking, 59 per cent of respondents are ready to terminate relationships with the bank, if they receive a good proposal from another bank. On the one hand, it means that there is a rather high likelihood of losing the existing customers. On the positive side, it means that banks have an opportunity to lure customers away, conducting an intelligent marketing policy.

The reasons why customers buy new products in a bank, ranged in the order of importance evaluated by customers, are presented in Table 8.

Table 8

Factors affecting customers' decision to buy a new bank product – evaluation of importance

Factor	Factor importance	
	Customers' viewpoint	Employees' viewpoint
Need for a product	4.61	4.63
Favourable terms	4.05	4.50
Recommendations of friends, colleagues, relatives	3.34	4.25
Detailed and comprehensive information about a product provided by bank employee	3.07	4.08
Exclusive offer (for instance, opportunity to choose card design)	2.87	3.62
Successful advertising campaign of a bank	2.76	3.78
Willingness to get a prestigious bank product (for instance, Golden Client credit card)	2.61	3.69
Insistent offer of a bank employee (though there was no need for a product)	1.97	3.17

Having analyzed the results it may be concluded that Latvian customers do not easily come under influence. They buy a new payment card or invest their money if a bank can make them a really good offer or if they see no alternative. However, it is crucially important to improve communication and selling skills of bank employees – 38 per cent of respondents will buy or probably buy a new bank product if an employee has good arguments pro.

The most important traits of an ideal bank front-office employee from the viewpoint of bank customers and staff members are presented in Table 9.

Table 9

The most important traits of an ideal bank front-office employee – evaluation of importance

Employee evaluation criteria	Customers' viewpoint		Employees' viewpoint	
	Importance	Range	Importance	Range
Professional knowledge	4.91	1	4.90	1
Communication skills	4.78	2	4.83	2
Behavior	4.70	3	4.82	3
Appearance	4.36	4	4.66	4
Language skills	4.22	5	4.00	6
Selling skills	3.95	6	4.54	5
Education level	3.73	7	3.83	7
Work experience	3.51	8	3.81	8

Customers give priority to professional knowledge, good communication skills, courtesy and friendliness of bank employees. The viewpoint of customers is concurrent with employees' opinion on this matter.

Summarizing the results of the research, the author concluded that the most important service quality elements for retail customers are bank product quality, product usability and safety of transactions. However, knowledge of employees and emotional component of the service are also critically important in bank-customer relationships.

CONCLUSIONS AND PROPOSALS

In the course of development of the present dissertation the necessity to manage value and the topicality of value management related issues in the Latvian banking sector have been proved. The recommendations in the field of measuring and managing bank value suggested by the author, as well as the instruments developed for bank value management can be used by executives of Latvian banks in order to increase bank value and provide long-term high income to their shareholders. Summing up the results of the research, the author has made the following **conclusions**:

1. Having analyzed the development dynamics of the Latvian banking sector performance, low efficiency of the Latvian banking business was observed. That, in turn, reduces investment attractiveness of Latvian banks among existing and potential investors. Thus, shareholder value increase is a crucially important question for top executives of Latvian banks.
2. Having studied the development of the concept of value, the author has concluded that intellectual capital (intangible assets) is the main element of the modern concept of value.
3. Shareholder value maximization is an integral goal of a company within the framework of value-based management. According to this concept, a company should (1) develop a value-oriented strategy and implement it at all business levels, (2) align value maximization goal with business activities and business processes in all departments of the company, (3) constantly monitor the created value in order to make well-timed decisions about necessary reorganizational procedures.
4. Having analyzed the scientific findings of finance theorists and practitioners regarding the concept of value, the concept of bank value was examined holistically. According to it, bank value is a multidimensional concept that combines elements of various scientific concepts. The model of the concept of bank value developed by the author is based on such concepts as the concept of modern banking, relationship value management, value-based management and sustainable stakeholder management.
5. Exploring the potential of application of the company valuation methods to estimating the value of Latvian banks, the author has concluded that the most appropriate method is free cash flow to equity discounting method (FCFEDM).
6. Having examined the question concerning estimation of cost of equity of Latvian banks, the (dis)advantages and limitations of application of the capital asset pricing model

(CAPM) and the build-up model were emphasized. Having conducted empirical research the author has concluded that the application of CAPM in the Latvian market cannot provide sufficiently reliable results, because it is not possible to calculate beta coefficient and market risk premium for the Latvian banking sector.

7. The most appropriate method for measuring cost of equity of Latvian banks is the build-up model. The main disadvantage of the model is its subjectivity, because it is based on expert valuation of bank specific risk. Thus, potential investors can be dissatisfied with the results obtained applying this model.
8. After conducting empirical research the author has stated that it is possible to develop a linear regression model for measuring the value of Latvian banks.
9. Having studied different value models developed by various researchers, the author has come to the conclusion that three main stakeholder groups which need to be managed for improved value creation are employees, customers and shareholders. Besides, all the value domains should be considered from two perspectives simultaneously: value that stakeholders deliver to a company and value that a company delivers to stakeholders.
10. Having analyzed the publicly available information about the strategic objectives and targets of world leading banks, the author has concluded that their performance measurement system is based on the principles of balanced scorecard (BSC). In the result of an empirical research it has been concluded that measuring of performance results in the branches of Latvian banks is based primarily on financial indicators. Indicators of other BSC perspectives are being ignored or not sufficiently emphasized.
11. Having conducted the research regarding bank customers' satisfaction level and service quality evaluation, the author has concluded that service quality elements which provide the most important contribution to bank retail customer satisfaction are related to bank staff professional competence and empathy in bank-customer relationships.

Based on the results of the research, the following **proposals** have been made:

1. To apply risk index, evaluating the riskiness of the Latvian banking sector and separate banks. Risk index can be used as an additional criterion in the process of management of bank insolvency risk. The author of the dissertation suggests analyzing the relationship between ROA volatility and specific features of the certain periods of time in the Latvian banking sector development in future research. Currently, conducting the given research cannot provide reliable results due to the limited statistical data.

2. To apply the model for calculation of bank's cost of equity developed by the author, estimating the value of Latvian banks, using the discounted cash flow method.
3. To reiterate the research that yielded a regression model for measuring the value of Latvian banks. Using statistical data collected over longer period, additional measures can be included into the regression model. The author proposes to use bank value indices, estimated by NASDAQ OMX Riga, IBS Prudentia and magazine "Kapitals", as an empirical value in the future research. The author also suggests using non-financial ratios in the model, because it has been proved that intangibles constitute the largest part of a company's value. The author's recommendation is to use EPSI rating and sustainability index as model arguments.
4. To use the questionnaires developed by the author in order to determine the characteristics necessary for a bank front-office employee, the disadvantages of the existing performance measurement system in bank branches, as well as to evaluate the level of bank customer satisfaction and loyalty.
5. To apply the performance measurement system for a bank branch developed by the author to improve the existing systems.
6. To apply the bank service quality evaluation methodology developed by the author in order to determine the most important service quality factors for banks retail clients. The author also suggests conducting such kind of surveys regularly for monitoring the dynamics in service quality perception by bank customers.
7. To use the service quality evaluation methodology developed by the author as a basis for development of the similar methodology for measuring service quality as perceived by corporate clients.
8. To continue the author's conducted research "Bank value perceived by bank retail customers and employees" and to evaluate service quality as perceived by different groups of respondents, according to the criteria in the respondent profile.
9. To complement the content of the study courses within the Master study program "Business Finance" implemented at the Faculty of Engineering Economics and Management of Riga Technical University with the questions examined in the dissertation. To offer RTU students to use the results of the empirical research conducted while elaborating the dissertation in developing their Master's and Bachelor's Theses.