

UNIVERSITY OF LATVIA  
FACULTY OF BUSINESS, MANAGEMENT AND ECONOMICS

# Development of the Corporate Bond Market in Latvia

Doctoral Thesis in Economic science

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**Author:**  
Scientific supervisors

**Natalja Tcelovska**  
Biruta Sloka, Dr.oec., professor  
Inese Vaidere, Dr.oec., professor

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## Abstract

The goal of this thesis is to provide a theoretical background for measuring the development of the corporate bond market in Latvia, to identify the key determinants of the development of the corporate bond market in Latvia, and to produce recommendations for actions needed for the development of the corporate bond market in Latvia within the *Capital Markets Union*.

The first part of the thesis contains the theoretical analysis of the frameworks measuring the development of the corporate bond market, its staging process, and determinants. In addition, the first part includes the exploration of the ongoing shift in the paradigm of the corporate financing in Europe as stimulated by the financial crisis of 2008-2013 and supported by the *Capital Markets Union (CMU)* as the significant external factor influencing the corporate bond markets. The second part of the thesis contains an in-depth analytical study of the corporate bond market in Latvia applying the expositive and comparative elements frameworks, the effect of the introduction of the *CMU* is estimated for the corporate bond market in Latvia. The third part contains the practical exposition of the determinants of the corporate bond market development in Latvia applying the statistical analysis complemented by the in-depth interviews and surveys. In the result of the theoretical, analytical and practical analysis, the Author develops a Corporate Bond Market Development model and measures the development of the corporate bond market in Latvia.

Within the scope of theoretical-methodological analysis of the thesis the critical review of the existing methods and frameworks for measuring the development of the corporate bond market is performed, determinants are identified, staging framework is developed. Moreover, the paradigm shift in the perception of financial markets in a country is revealed by analysing the role of the borrowed funding in the bank-based and market-based economic systems in a country and the recent developments in the *CMU* initiative are investigated for Latvia. Empirical research based on the secondary data of the corporate bond market in Latvia as well as primary data collected through means of surveys and in-depth interviews is performed in order to verify the hypothesis.

The thesis consists of 187 pages and includes 49 figures, 30 tables, 4 formulas and 4 appendixes. The literature list contains 273 sources.

## Explanations

The following terms are used in this thesis

Bloomberg	Bloomberg information system
Lursoft	Company register in Latvia
Nasdaq Baltic	Nasdaq Baltic stock exchange

## Abbreviations

The following abbreviations are used in this thesis

ASEAN-5 Countries: Indonesia, Malaysia, the Philippines, Singapore, Thailand	ASEAN-5
Chief Financial Officers	CFO
Commonwealth of Independent States	CIS
Capital Markets Union	CMU
Corporate Bond Market Development Model	CBMD
Enterprise Income Tax	EIT
Euro	EUR
European Bank for Reconstruction and Development	EBRD
European Central Bank	ECB
European Commission	EC
European Monetary Union	EMU
European Union	EU
Financial Sector Development Indicators	FSDI
Financial Sector Issuer	FSI
Financial and Capital Market Commission	FCMC
Gross Domestic Product	GDP
International Accounting Standards Board	IASB
International Financial Reporting Standards	IFRS
International Monetary Fund	IMF
International Organisation of Securities Commissions	IOSCO
Initial Public Offering	IPO
Nasdaq CSD Societas Europaea (former Latvian Central Depository)	LCD
Latvian Currency Lats	LVL
Latvijas Hipotēku un zemes banka	LHZB
Microfinance Institution	MFI
The Markets in Financial Instruments Directive	MiFID
Morgan Stanley Capital International (used as an abbreviation only)	MSCI
Non-Financial Companies	NFC
Organisation for Economic Cooperation and Development	OECD
Over-The-Counter	OTC
Peer-to-Peer	P2P
Personal Income Tax	PIT
Quantitative Easing	QE
Small Business Act	SBA
Small and Medium Enterprise	SME
United States of America Dollar	USD
Yield To Maturity	YTM

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# Introduction

## Research background and topicality

In Latvia, the debt market started its development back in 1993 (Zubkova et al., 2002). However, the period between 1993- 2012 could be characterised by the limited presence of corporate bond financing in Latvia: although both mortgage bonds and corporate bonds not linked to mortgages were present in the market, the number of issuers remained insignificant, the size of the issues was limited and the secondary market activity was fragmented. By 2012 only 2 corporate bond issues remained listed on *Nasdaq Riga* with no mortgage bonds present. The development of the Latvian corporate bond market in the period of 2013-2017 was quick but very different from its historical trends: the banking sector issuers formed 85% of the total number of the issues outstanding (non-mortgage bonds), first quasi-sovereign issuer came into the market (Nasdaq Baltic, 2017). Despite its rapid augmentation, the absolute size of the corporate bond market in Latvia remains comparatively low to attract the international competence and interest for both research and utilisation, while five years of active growth have restrained the extensive development of the local competence- both investment culture and academic research in the area is still in the process of its formation. In the result, the ongoing growth process and the direction of the development of the corporate bond market in Latvia, its capacity and sustainability remain uncontrolled and underexplored by both regulatory and academic society in Latvia.

The topicality of the research is formed by numerous factors. The first factor being the need to reveal the current level of the development of the corporate bond market in Latvia as the result of the abrupt and hectic growth in the period 2013-2017 where the number of public Latvian corporate bond issues outstanding rose 7 times in 2013, afterwards stabilising at 40% per annum (Nasdaq Baltic, 2017). Identification and measurement of the current level of the development will help to determine the remaining capacity of the corporate bond market in Latvia. The second factor being the need to reveal the level of the development of the corporate bond market in Latvia as the present alternative to the traditional bank funding. The recent sharp growth of the corporate bond market in Latvia has indicated the presence and potential for the alternative to banking borrowing in the country. While the development of the complementary to bank financing is stimulated within the market-based oriented policies of the *European Union* (EU), the determinants of the corporate bond market in Latvia should be acknowledged for its sustainability and development potential. Moreover, the amount of savings locally both from the pension sys-

tem and households is increasing indicating the growing need for investment in the capital markets (including the corporate bond market) where the capacity has not settled thus being the third factor (Financial and Capital Markets Commission, 2017).

The fourth factor is the ongoing *Capital Markets Union* initiative, which is delivering the considerable effect on the corporate financing practices. After the financial crisis of 2008-2013 has proved the dependency of Europe on banking funding and its spill-over effect on the whole countries, the increasing role of the alternative to bank financing is endorsed by the *European Commission*. The *Capital Markets Union* as a single market for 28 member states (including Latvia) emphasises a sizeable alteration and stimulation of corporate bond markets as an alternative to bank financing. The corporate bond market in Latvia while perceiving its natural boost in development should be analysed for growth potential and need within the *Capital Markets Union*, the recommendations for the country participation in the *Capital Markets Union* should be developed.

The fifth factor is the need to determine Latvia specific drivers of the ongoing growth of the corporate bond market– despite the similarities as traditionally depicted within the Baltic economies, the weight of the number of Latvian public corporate bonds among Baltic countries has reached 94% (Nasdaq Baltic, 2017). No obvious macroeconomic or legal factors indicate the presence of a more favourable environment for the corporate bond market development in Latvia. The determinants of the growth when revealed should be scrutinised by other Baltic countries and applied if possible. Furthermore, stressing the importance of the role of the capital markets, all three Baltic countries have agreed on creating a pan-Baltic capital market with the support of the *European Commission* and the *European Bank for Reconstruction and Development*. As reached on November 6, 2017, the agreement, being the sixth factor, further indicated the high level of urgency comprehending the current position and analysing the determinants and trends in the development of the corporate bond market in Latvia to reasonably utilise the pan-Baltic market opportunities (Ministry of Finance of the Republic of Latvia, 2017).

There is an increasing academic interest on the development of the corporate bond markets, where in the research outstanding the Author could neither identify the unified framework for the analysis of the corporate bond market development in a country nor ascertain the thorough analysis and assessment of the corporate bond market in Latvia. This research provides the

first profound study on the development of the corporate bond market in Latvia and its determinants. The academic papers of: Ayala et al. (2017), Lin and Milhaupt (2017), Astrauskaite (2016), Wyman (2015), Laeven (2014), Felman et al. (2014), Astrauskaite (2014), Mu et al. (2013), Bae (2012), Cihak et al. (2012), Gozzi et al. (2012), Sui (2011), Adelegan and Radzewicz-Bak (2009), Dittmar and Yuan (2008); Eichengreen et al. (2008), Khalid (2007), Braun and Briones (2006), Burger and Warnock (2005), Eichengreen and Luengnaruemitchai (2004), World Bank (2004), Fabella and Madhur (2003), Rajan and Zingales (2003), Jiang et al. (2001), Harwood (2000) have targeted the development of the corporate bond market in a country or country samples. Broader academic attention is paid to the borrowing source for the European small and medium enterprise (SME) segment, where more recent studies focus on the financial crisis 2008-2013 driven shift from bank-based to market-based financing (including corporate bonds) and *CMU* aspects: Acharya and Steffen (2016), Langfield and Pagano (2016), Skabic (2016), Dorn (2015), Duca et al. (2015), Kenadjian (2015), Rusek (2015), Veron and Wolff (2015), Zaghini (2016), Astrauskaite and Paskevicius (2014), Bending et al. (2014), Harford and Uysal (2014), Law and Singh (2014), Ryan et al. (2014), Sawyer (2014), Hardie et al. (2013), Fecht et al. (2012), Allard and Blavy (2011), Hameed (2007), Tetrevova (2007), Faulkender and Petersen (2006), Arteta (2005), Bose and Dipankor (2003), Peterson (2003), Levine (2002), Demirguc-Kunt and Maksimovic (2002), Levine (2002), Allen and Gale (2001), Rajan and Zingales (2001), Fujita (2000). While Latvia is covered in the policy and economic review papers reporting the progress of SME financing and *CMU* action plan, and there are studies on the access to alternative to bank financing for SME segment in Latvia: Rupeika-Apoga (2014, 2014a, 2014b), and its venture capital segment: Jakusonoka (2016), Prohorovs et al. (2015), Jakusonoka and Liepnieks (2014), Prohorovs and Jakusonoka (2012); no existing academic studies focus on the corporate bond market in Latvia and the determinants of its development. The topic has been covered in the academic journals: *Journal of Finance*, *Journal of Financial Economics*, *Journal of Banking & Finance*, *Journal of International Money and Finance*, *The Journal of Economic Perspectives*, *Journal of Financial Markets*, *Applied Economics*, *Journal of International Economics*, *Oxford Review of Economic Policy*, *Journal of Financial Stability*, *Journal of International Economics*, *Money & Finance*, *Journal of Economic Literature*, *Journal of Business Research*, *Journal of Financial Intermediation*, *European Economic Review*, *Economic Policy*, *European Research Studies Journal*, *Research and Expertise on the*

*World Economy, Review of Financial Studies, Review of Financial Economics, Review of Economic Studies, Business, Management and Education, American Economic Review, Economic Science for Rural Development, Ruhr Economic Papers, Atlantic Economic Journal, Asian-Pacific Economic Literature, Asia-Pacific Development Journal, Zagreb International Review of Economics & Business, Procedia Economics and Finance, Swiss Society of Economics and Statistics* and other.

The **goal** of this thesis is to provide a theoretical background for measuring the development of the corporate bond market in Latvia, to identify the key determinants of the development of the corporate bond market in Latvia, and to produce recommendations for actions needed for the development of the corporate bond market in Latvia within the *Capital Markets Union*.

To achieve the goal of the research, the following **tasks** should be accomplished:

- 1) Expand the definition of a corporate bond by both adding the development in the academic research outstanding and ongoing changes in the financial markets and *EU* regulations;
- 2) Explore the frameworks of development of a corporate bond market as elaborated by the academic research and recognise corporate bond market development determinants;
- 3) Reveal the role of the borrowed funding in the economic system of a country and compare bank-based and market-based economic systems; demonstrate the tendencies in the period after the financial crisis of 2008-2013 applying *the Capital Markets Union* initiative of the *European Commission* and investigate *CMU* effect on the corporate bond market in Latvia;
- 4) Apply expositive and comparative elements frameworks to analyse the development of the corporate bond market in Latvia;
- 5) Identify the determinants of the corporate bond market in Latvia by running the statistical analysis for the quantitative and qualitative factors;
- 6) Develop the Corporate Bond Market Development model to identify the development of the corporate bond market in Latvia.

The **object** of the research is the corporate bond market in Latvia.

The **subject** of the research is the measurement of the development of the corporate bond market in Latvia.

The **hypothesis** of the research is: the development of the corporate bonds market can be measured with the help of Corporate Bond Market Development model.

The **theses** presented for defence are:

- 1) While there is high corporate bond market recognition present by the academics, the existing research lacks a framework for measuring the development of the corporate bond market in Latvia.
- 2) The stage of development of the corporate bond market in Latvia can be classified as “developed”.
- 3) Development of the corporate bond market in Latvia is influenced by macroeconomic factors, development of the government bond market, domestic savings and regulations.
- 4) The actions relevant to the development of the corporate bond market in Latvia within the *Capital Markets Union* are the development of cross-border securities trade and securitisation practices.

During the development of the research the quantitative and qualitative research **methods** were applied: analysis of scientific publications and research results: analysis of normative documents; quantitative research methods: surveys; secondary data analysis (macroeconomic data based on data from the *Bank for International Settlement*, the *World Bank* database, *Bloomberg* and *Reuters* databases; financial market indicators and data analysis based on data from *Nasdaq Baltic*, *Bank for International Settlement*, *Treasury of the Republic of Latvia*, *Bloomberg* and *Reuters* databases); regression and correlation analysis, where the correlation analysis was performed to select the independent variables to be included into the regression analysis, multicollinearity tests, the tests of the statistical significance of the regression coefficients; for the data obtained by surveys, data grouping by different parameters (cross-tabulation) was performed; graphical analysis; data was analysed by indicators of descriptive statistics: indicators of central tendency or location (arithmetic mean, mode, median), indicators of variability (range, standard deviation, standard error of mean), indicators of skewness and kurtosis; qualitative research methods: expert interviews and in-depth interviews.

The **period** of the analysis of the thesis is 1993-2017. The comparative elements frameworks applied in the analytical chapter do not include the pre-crisis period before 2008. The pan-

el regression in the practical part is run for the period 2010-2016 and contains 118 observations. The primary data analysed in this research was obtained by means of the number of surveys and in-depth interviews conducted during the period of the research: 1) surveys and in-depth interviews with financial sector issuers (FSIs) were conducted in the period June-August 2017; 2) in-depth interviews with financial industry specialists were run in February 2016; 3) surveys with 100 largest Latvian companies were conducted in the period August- October 2012. No similar primary data has been collected before.

The **theoretical and methodological basis** consists of scientific literature, previously performed research, data from the *Bank for International Settlement*, *Bloomberg* database, *European Union*, *Financial and Capital Market Commission*, *Nasdaq CSD SE (Societas Europaea)*, *Latvian Commercial Bank Association*, *Lursoft* database, *Manapensija*, *Nasdaq Baltic*, *Treasury of the Republic of Latvia*, the *World Bank* database. Additionally, the primary data from the companies in Latvia was collected and used (via questionnaires and interviews).

The research introduces **scientific novelties**:

- 1) Identified, classified and provided the comparison of the corporate bond market development frameworks as elaborated by the academic research and identified corporate bond market development determinants;
- 2) Developed the expositive and comparative elements frameworks and staging framework to reveal the development of the corporate bond market in a country;
- 3) Analysed and classified the role of the borrowed funding in the economic system of a country, revealed the paradigm shift in the perception of corporate financing (borrowed financing) in Europe by analysing its role in the bank-based and market-based economic systems;
- 4) Researched corporate bond market related developments in the *Capital Markets Union* initiative of the *European Commission*, identified the political initiatives related to the corporate bond market development;
- 5) Developed and applied the Corporate Bond Market Development (CBMD) model to identify the development of the corporate bond market in a country.

The research provides **practical significance** of its results for the potential users in corporate, infrastructure, regulatory and academic environment:

1. Existing and potential corporate bond issuers in Latvia might apply the results of the expositive and comparative elements frameworks and CBMD model for identifying the current level of the corporate bond market development in Latvia as part of their funding strategy planning. The analysis of the *CMU* upcoming and recommended actions for Latvia should be studied by the existing and potential corporate bond issuers as the vital inside into the future development of the corporate bond segment for identifying the corporate bond market development directions and the upcoming opportunities. Moreover, the FSI segment might use the in-depth analysis of the segment (the primary data as obtained and analysed as well as the analysis of the secondary data) for both benchmarking its existing and elaborating the future funding strategy.
2. Stock exchange and central depository in Latvia might extensively use the analysis of the results of the surveys and interviews to the FSI and corporate segment as to benchmark and progress its corporate bond segment enhancement and capacity (including pricing). The results of the application of the expositive and comparative elements frameworks, Corporate Bond Market Development model as well as the plans and recommendations as prepared by this research to be applied for Latvia in *CMU*, should be studied for understanding and strategically planning the future development of the corporate bond segment. The results of the FSI segment survey and in-depth interviews have been preliminary discussed with *Nasdaq Riga* and scheduled for more thorough discussions.
3. Regulators (government, *Financial and Capital Market Commission (FCMC)*) might use the results of this first research and measurement of the corporate bond market development in Latvia for adjusting the existing and developing the new policies for corporate bond markets regulation (including taxation). The results of the application of the expositive and comparative elements frameworks and Corporate Bond Market Development model should be acknowledged by the regulators for the indepth study of the corporate bond segment and its further utilisation for SME financing. The research provides in-depth competence source and practical study results of the perception of the corporate bond market by both potential and existing issuers in Latvia, which is the valid input for forming Latvia's position in *CMU*. The views and prospects of Latvia within the *Capital Markets Union* initiative developed by the research might be applied.

4. Academics might have an interest in the results of the research as the valid input into the future studies on the corporate bond market in Latvia in the way of how the primary data was obtained (survey structure, interview structure) and analysed in the research, how and which countries were classified as peer countries for Latvia for the analysis of the development of the corporate bond market. The primary data obtained and analysed could be used in the further academic analysis. The expositive and comparative elements frameworks, staging framework and Corporate Bond Market Development model might be further developed and applied for the analysis of the corporate bond market of a country or group of countries. The econometric model and its methodology might be further analysed and applied.

### **Structure of the research**

The dissertation consists of **three parts**:

The **first part** contains the analysis of the existing academic research on corporate bond market development. The theoretical part starts with the analysis and comparison of the corporate bond definitions in the result providing the definition to be used in this research. The Author progresses the theoretical part with the analysis of the corporate bond market development determinants as present in the existing academic studies; groups them into two types of frameworks: expositive and comparative elements. Based on the analysis of the existing academic research, and adding more recent studies and *EU* regulations, the Author develops expositive and comparative elements frameworks to apply for the analysis of Latvian corporate bond market development. The Author analyses and compares the staging frameworks of corporate bond market development and develops the staging framework to apply for the analysis of the development of the corporate bond market in Latvia. The extensive academic research emphasises the change in the corporate funding paradigm in Europe after the financial crisis of 2008-2013 and the role of *CMU* in the shift. The Author finishes the theoretical part by defining recent trends in the development of the *Capital Markets Union* initiative.

Covered in the **second part**, are expositive and comparative elements frameworks. Application of the developed expositive elements framework reveals that Latvian corporate bond market has positive dynamics in both elements clusters: measurement elements, legal, and macroeconomic elements. To identify the comparative level of the development of the bond market in Latvia and its corporate segment, three country samples are developed and tested by the comparative elements framework in the area of size, stability, access, and efficiency. The analytical



part finishes with the analysis of how the *Capital Markets Union* initiative influences corporate bond market development in Latvia, where size is scrutinised as the central area for the development needed. The actions needed for the further development of the corporate bond market in Latvia within the *Capital Markets Union* are defined.

The **third part** contains the practical analysis of the corporate bond market in Latvia. While the size area is revealed to be in focus for the further corporate bond market development in Latvia, the Author analyses the factors influencing the amount of the corporate bonds outstanding in Latvia. The empirical study of the qualitative and quantitative factors of the corporate bond market in Latvia as the determinants of the development is presented in the third part. The quantitative factors are studied with the means of statistical tools running the regression on secondary data while for the study of the qualitative factors the number of surveys and in-depth interviews has been conducted both for the existing corporate bond issuers as well as the largest Latvian corporate companies as the potential corporate bond issuers in order to get primary data for the analysis. In the result of theoretical, analytical and practical analysis of the corporate bond market in Latvia, the Author identifies the determinants of the development of the corporate bond market in Latvia and develops a Corporate Bond Market Development model for measuring the development of the corporate bond market in Latvia.

### **Approbation**

The main results of the thesis were presented and discussed in *international and local scientific conferences*:

1. Determinants of the Development of the Corporate Bond Market in Latvia. *16<sup>th</sup> International Conference on European Processes: the Future of European Union International Role: Political, Economic and Social Challenges*. Organised by Kaunas University of Technology. April 27 2018. Kaunas, Lithuania.
2. Market Based Financing Alternatives of Infrastructure of State Owned Enterprises. *16<sup>th</sup> International Conference on European Processes: the Future of European Union International Role: Political, Economic and Social Challenges*. Organised by Kaunas University of Technology. April 27 2018. Kaunas, Lithuania.
3. Corporate bonds issuance as the alternative to banking source of funding for financial sector companies in Latvia. *76<sup>th</sup> Conference of the University of Latvia. Panel discussion: Innovations in Latvian Companies and Industries Competitiveness Enhancement within the Framework of Globalization*. Organised by the University of Latvia. 14 February 2018. Riga, Latvia.
4. Sustainability of FSI Segment as the Forming Segment of Latvian Corporate Bond Market. *58<sup>th</sup> International Scientific Conference "Scientific Conference on Economics and*

- Entrepreneurship*” organised by Riga Technical University. 13-14 October 2017, Riga, Latvia.
5. SME financing in Latvia: is there an alternative to banking present? *5<sup>th</sup> International Conference Entrepreneurship, Innovation and Regional Development -EIRD 2017 Smart Growth of the Local Community in the Global World*. Organised by Stockholm School of Economics in Riga, RISEBA University of Business, Arts and Technology and Ventspils University College (Latvia), University of Tartu and Tallinn, University of Technology (Estonia), Kaunas University of Technology and ISM University of Management and Economics (Lithuania). Hosted by Ventspils University College. 30 June 2017. Ventspils, Latvia.
  6. Development of the Corporate Bond Market in Latvia. Doctoral Pre-Conference. Organised by Stockholm School of Economics in Riga, RISEBA University of Business, Arts and Technology and Ventspils University College (Latvia), University of Tartu and Tallinn, University of Technology (Estonia), Kaunas University of Technology and ISM University of Management and Economics (Lithuania). Hosted by Ventspils University College. 29 June 2017. Ventspils, Latvia.
  7. Capital Markets Union: The Case of Latvian Corporate Bond Market. *International Scientific Conference New Challenges of Economic and Business Development – 2017: Digital Economy*. University of Latvia. 19 May 2017. Riga, Latvia.
  8. Development of the Corporate Bonds Market in Latvia - The Doctoral Workshop in Finance organised by the University of Latvia and Nordic-Baltic Network in Corporate and International Finance. May 18, 2017. Riga, Latvia
  9. Waiting for the Capital Markets Union: the Position of Latvian Corporate Bond Market. *15<sup>th</sup> International Conference on European Processes: the Future of European Union International Role: Political, Economic and Social Challenges*. Organised by Kaunas University of Technology. 7 April 2017. Kaunas, Lithuania.
  10. Corporate Bonds as the Alternative for Bank Crediting: Analysis of Latvian Market. *Annual International Conference Evolution of International Trading System: Prospects and Challenges*. Organised by St. Petersburg State University. 21 October 2016. St. Petersburg, Russia.
  11. Measuring Efficiency of the Bond Market in Latvia. *XXV The European Academy of Management and Business Economics (AEDEM) International Conference*. Organised by The European Academy of Management and Business Economics. Hosted by RISEBA. 1 September 2016. Riga, Latvia.
  12. Revealing the Stage of Development of Latvian Bond Market. *International Conference: New Challenges of Economic and Business Development – 2016: Society, Innovations and Collaborative Economy*. Organised by the University of Latvia. 13 May 2016. Riga, Latvia.
  13. Framework for Analysis of Latvian Corporate Bond Market Development. *International Conference Economic Science for Rural Development*. Organised by Latvia University of Agriculture. 21 April 2016. Jelgava, Latvia.
  14. Development of Latvian Corporate Bond Market. *74<sup>th</sup> Conference of the University of Latvia*. Panel discussion: the Competitiveness of Latvia: Availability of Financing. University of Latvia. 18 February 2016. Riga, Latvia.
  15. Do Regulation Policies Stimulate or Decelerate Corporate Bond Market Development in Latvia? *9<sup>th</sup> ICAFT International Conference on Accounting and Finance in Transi-*

- tion, *European and World Experience and Public Policy Consideration*. Organised by University of Business, Arts and Technology (RISEBA). 12 October 2012. Riga, Latvia.
16. Future Trends of Latvian Financial Market Development. *11<sup>th</sup> International Conference of ISSEI*. Organised by the University of Helsinki. 1 October 2008. Helsinki, Finland.
  17. Fixed Income Market as the Alternative Source of Financing for Latvian Companies. *4<sup>th</sup> International Conference Baltic Business and Socio-Economic Development*. Organised by the University of Latvia. 30 September 2008 Riga, Latvia.
  18. Latvian debt market: 14 Years of Experience and its Future Development. *66<sup>th</sup> Conference of the University of Latvia*. 21 February 2008. Riga, Latvia.
  19. Corporate Governance: its definition and application in Latvia. *International Conference Economic Science for Rural Development*. Organised by Latvia University of Agriculture. 26 April 2006. Jelgava, Latvia.

*Scientific publications in peer-reviewed issues:*

1. Tocelovska, N., Sloka, B. Arfejevs, I. (2018). Determinants of the Development of the Corporate Bond Market in Latvia. Proceedings of the *16<sup>th</sup> International Conference on European Processes: the Future of European Union International Role: Political, Economic and Social Challenges*. April 27, 2018, Kaunas University of Technology, Kaunas, Lithuania (in print).
2. Arefjevs, I., Spiridonovs, J., Tocelovska, N. (2018). Market Based Financing Alternatives of Infrastructure of State Owned Enterprises. Proceedings of the *16<sup>th</sup> International Conference on European Processes: the Future of European Union International Role: Political, Economic and Social Challenges*. April 27, 2018, Kaunas University of Technology, Kaunas, Lithuania (in print).
3. Tocelovska, N., Sloka, B. (2017). Sustainability of FSI Segment as the Forming Segment of Latvian Corporate Bond Market. Proceedings of the *58<sup>th</sup> International Scientific Conference "Scientific Conference on Economics and Entrepreneurship"*. 13-14 October 2017, Riga Technical University, Riga, Latvia, pp. 124-125.
4. Tocelovska, N., Sloka, B. (2017). SME financing in Latvia: is there an Alternative to Banking Present? *Journal of Logistics, Informatics and Service Science*, Volume 4, No. 2, pp. 51-66.
5. Tocelovska, N. Purmalis, K. (2017). Capital Markets Union: the Case of Latvian Corporate Bond Market. Proceedings of the *9<sup>th</sup> International Scientific Conference: New Challenges of Economic and Business Development*. May 18-20, 2017, University of Latvia, Riga, Latvia, pp. 671-680. Indexed in **Web of Science** database.
6. Tocelovska, N. (2017). Waiting for the Capital Markets Union: the Position of Latvian Corporate Bond Market. *European Integration Studies*, Volume 2017/11, pp.110-119. Indexed in **Web of Science**, **EBSCO** database.
7. Tocelovska, N. (2016). Corporate Bonds as the Alternative for Bank Crediting: Analysis of Latvian Market. Proceedings of the *Annual International Conference Evolution of International Trading System: Prospects and Challenges*. Organised by St. Petersburg State University, pp.146-155. Indexed in **Russian Science Citation Index** database.
8. Tocelovska, N. (2016). Measuring Efficiency of the Bond Market in Latvia. Proceedings of the *XXV The European Academy of Management and Business Economics (AEDEM) International Conference*, pp. 243- 256.
9. Tocelovska, N. (2016). Revealing the Stage of Development of Latvian Bond Market. *University of Latvia International Conference: New Challenges of Economic and Busi-*

- ness Development – 2016: Society, Innovations and Collaborative Economy, pp.845-857. Indexed in **Web of Science** database.
10. Tocolovska, N. (2016). Framework for Analysis of Latvian Corporate Bond Market Development. Proceedings of the *International Conference “Economic Science for Rural Development”*. Latvia University of Agriculture, Volume 43. pp. 358-365. Indexed in **Web of Science**, **EBSCO** database.
  11. Tocolovska, N. (2016). Descriptive factor analysis of Latvian corporate bond market. Proceedings of *European Doctoral Programmes Association in Management and Business Administration (EDAMBA)* International Scientific Conference for Doctoral Students and Post-Doctoral Scholars. pp. 374-382. Indexed in **Web of Science** database.
  12. Tocolovska, N. (2008). Fixed Income Market as the Alternative Source of Financing for Latvian Companies. Proceedings of the *4<sup>th</sup> International Conference Baltic Business and Socio-Economic Development*, pp. 66-75.
  13. Tocolovska, N. (2008). Problems of Latvian Fixed Income Market. Scientific Papers of *University of Latvia*, Volume 744, pp. 110-120.
  14. Tocolovska, N. (2008). Latvian Debt Market: 14 Years of Experience and its Future Development. Scientific Papers of *University of Latvia*, Volume 737, pp. 345–353.
  15. Tocolovska N. (2008). Future Trends of Latvian Financial Market Development. Proceedings of the *11<sup>th</sup> International Conference of ISSEI University of Helsinki*.
  16. Tocolovska N., Vaidere. I. (2006). Corporate Governance: its Definition and Application in Latvia. Proceedings of the *International Scientific Conference Economic Science for Rural Development*. Nr.11, pp. 140-143. Indexed in **EBSCO** database.

#### **Other activities:**

1. Providing media the analysis on corporate financing by issuing securities in Latvia. *Diena* daily newspaper. 1 March 2018, Riga, Latvia. The Author has published more than 100 articles on Latvian securities market in the period 2006-2018 in Latvia.
2. Providing a public talk on securities, both corporate bonds and equities as an investment alternative by the retail sector. *Nasdaq Riga* conference “*CEO Meets Investors 2017*”. 29 November 2017, Riga, Latvia.
3. Hosting a workshop and panel discussion on the corporate bond market at the Annual International Conference for Students and Young Scientists "Carpe Scientiam" organised by the *Higher School of State Audit of Lomonosov Moscow State University* 7-10 November 2017, Moscow, Russia.
4. Academic and research exchange to *Rey Juan Carlos University* Madrid March - April 2017. During the exchange period experience exchange by both teaching and academic activities in the area of finance as well as increasing teaching and research cooperation between *Rey Juan Carlos University* and the *University of Latvia*: establishing research connections, discovering potential research activities, monitoring and tutoring student research and project activities, participating in thesis reviews. Madrid, Spain.
5. Participation in more than 20 high-level conferences as the presenter on capital market development: conferences organised by *Nasdaq* (such as annual conference CEO meets investors), *CBONDS* (organised in London, CIS countries) and participant: *Eurofi* 2016, *Bloomberg* and *Reuters* conferences in the period 2008-2017.
6. The Author is the co-author of two scientific publications indexed in **Web of Science** database: Cost-Effectiveness Analysis of Helicobacter Pylori Diagnostic Methods; Gastric Cancer Screening Cost Efficiency Analyses Using Biomarkers, 2017.

7. The Author is the contributor to writing a book "*10:00-14:00. Securities Market in 2008. The Experience of Best Latvia's Experts for Free*" ("*10:00–14:00. Vērtspapīru tirgus. Latvijas pieredze 2008. Latvijas labāko speciālistu padomi bez komisijas maksas*") (Pelane and Ukenable, 2008).

# **1. Theoretical background and development measurement of a corporate bond market**

The vast academic research outstanding on the financial instruments could be clustered into per type of securities and per region. The choice of the security as selected for the research is traditionally linked to the presence of the secondary data: equity segment gets the concentrated attention of the academics, followed by the sovereign bond segment. Sovereign bond segment while being the safest type of debt (Jakusonoka, 2001), also has the largest size as compared to other bond segments in a country (Fabozzi, 2005) and thus better transparency both from the exchange and issuer (government) side. The corporate bond segment is underexplored as compared to equity and sovereign bond segments due to the relative lack of transparency of the secondary market and thus lack of historical data present. Geographically, the existing research on the bond market could be grouped as analysing the major developed markets: the USA and developed Europe, and developing: Asia, Russia, and Poland where Chinese market gets a comparatively more thorough analysis of the corporate bond market segment: Liang (2011), Li (2010) and Chen (2002).

The Baltic region bond segment gets minor attention, where academics explore banking funding or broader investment concept: Babuskins (2004) covered formation and development of investment, Kauzens (2002) analysed financial markets in general, Kakanis (2006) and Sarkans (2002) narrowed their research to equities and sovereign debt accordingly, Rupeika-Apoga (2014, 2014a) analysed the alternative funding as present in the financial markets.

## **1.1. Analysis of the definitions of a corporate bond**

There exists no one unified definition of a corporate bond. Financial Instrument Market Law in Latvia defines debt as bonds or other type of transferrable securitised debts which are not stocks (Financial Instrument Market Law, 2016). The Markets in Financial instruments Directive II stresses the transferrable nature of bonds classifying them as “transferrable securities” negotiable on the capital market, with the exception of instruments of payment. The Directive groups bonds with other form of securitised debt for the trading aspects but neither delivers a separate corporate bond definition nor puts an emphasis on the traditional financial instruments (non-derivatives) (The Markets in Financial instruments Directive II, 2014). The Author discovers that majority of the existing definitions of bonds when issued by corporates or corporate bonds are

broad enough to cover a wider range of products besides to the corporate bond securities: e.g. Ross et al. (1990) defined bonds as “a certificate showing that a borrower owes a specific sum”. Nevertheless, there are common characteristics, which are implied by the academics when defining corporate bonds: Bodie et al. (2011), Praude (2009), Berk and DeMarzo (2007), Bodie and Merton (1998), and Benninga and Sarig (1997) empathised the exchange of investors’ money as paid to the corporate today for the promised payments back in the future; Arnold (2002) and Ross et al. (1990) accented the long-term maturity of bonds; Elton et al. (2007), Apsitis et al. (2003), Benninga and Sarig (1997) stressed the limited obligations of the issuer in terms of corporate financing. While Ross et al. (1990) and Samuels et al. (2000) underlined the secured or unsecured essence of the bond liability, Bodie et al. (2011) defined secured bonds as the ones, which had the collateral, where unsecured bonds had no collateral. Moreover, the Author identified contradictions in the definitions outstanding: unsecured bond definition was interpreted by Samuels et al. (2000) and Bodie et al. (2011) in an opposing manner: Samuels et al. (2000) indicated the interchangeability of terms “debenture” and “bond”, which could be referred as “loan stock”, while, Bodie et al. (2011) argued that only unsecured bonds are debentures. Moreover, Bodie et al. (2011) added the options attached to the corporate bonds: callable bonds and convertible bonds.

More explicit definitions covering compound aspects of the corporate bonds are provided by Praude (2009), Dittmar and Yuan (2007), and Ljalin (2003). Ljalin (2003) summarised the uniqueness of the instrument as compared to alternative financing methods: 1) transferability-bonds can be transferred from one owner to another thus making bonds different from bank credits; 2) bonds do not provide ownership rights different from equities; 3) bonds attract resources from the market, which makes them different from promissory notes. Dittmar and Yuan (2007) defined corporate bonds in relation to sovereign bonds, which acted as benchmark securities representing the systematic factor of the country. In contrast, emerging market corporate bonds depend not only on the systematic factors but also bear idiosyncratic risk specific to the company issuing the bond. Praude (2009) defined bonds as debt securities, which proved the investment of the resources of the bondholder and the liability of the issuer to pay regular fixed income and provided the nominal of the bond within the fixed period. While Praude (2009) has listed the main corporate bond classification criteria: by issuer, by maturity, by collateral, by the ownership, by interest payment way, by interest payment type, by covenants; the Author adds the credit

risk measurement criteria (credit rating: investment grade, junk bonds), trading of the bonds (public or over-the-counter) and geography (domestic and international). Domestic or local debt is issued under the local legislation and is listed in the local depository. International bonds are traditionally issued in the form of Eurobond or the bond denominated in a currency other than that of the currency of the country in which it is issued (Bodie et al., 2009). While the list of the main characteristics could vary for different corporate bonds, the individual characteristics of every security are disclosed in the issue prospectus and can be adjusted by the issue.

The scope of this research is publically traded local corporate bonds of Latvia, which form the corporate bond market in Latvia. The Author further elaborates the definition of corporate bonds as developed by Praude (2009) to reflect the development of the definitions as done by the academic studies and progressed by ongoing changes in the financial markets and *EU* regulations. The definition of a corporate bond as used in this research and providing the limitation for the research is:

*A corporate bond is a transferable long-term debt security providing from one side the proof of investment of investor's resources and from another side issuer's (company's) liability to repay nominal and coupon/s of the bond within the fixed period. The structure of the corporate bond is defined by the issue prospectus. Corporate bonds may be publically listed or issued as a private issue and not publically listed (or publically listed later).*

## **1.2. Frameworks for the analysis of the development of a corporate bond market**

The precondition for a market existence is the presence of supply and demand factors and infrastructure setup; still, those variables do not disclose the development gap between different corporate bond markets and the determinants justifying it. There is a need to introduce the dimensions for the analysis of the development of the corporate bond market and its determinants. There are various attempts to analyse the development of a corporate bond market. The Author divides academic studies analysing the development of corporate bond markets into three groups: 1) expositive elements frameworks: Lin and Milhaupt (2017), Astrauskaite (2016), Laeven (2014), Felman et al. (2014), Astrauskaite (2014), Mu et al. (2013), Bae (2012), Gozzi et al. (2012), Sui (2011), Adelegan and Radzewicz-Bak (2009), Dittmar and Yuon (2008), Eichengreen et al. (2008), Braun and Briones (2006), Burger and Warnock (2005), Eichengreen and Luengnaruemitchai (2004), Fabella and Madhur (2003), Rajan and Zingales (2003), Jiang et al. (2001), Harwood (2000); 2) comparative elements framework: Ayala et al. (2017), Wyman



(2015), Cihak et al. (2012), World Bank (2004); 3) stages of development: Wyman (2015), Khalid (2007).

### **1.2.1. Expositive elements frameworks**

Expositive elements frameworks provide the dimensions for assessing a corporate bond market. The studies reveal one or several main factors as influencing the development of a corporate bond market based on the qualitative or statistical analysis made. The exploration of the academic research outstanding reveals the presence of four main groups of indicators as determined to be influencing the development of a corporate bond market: size, macroeconomic indicators, legal factors (including market regulations and taxation), and presence of securities market infrastructure (Tocelovska, 2016b).

Astrauskaite (2016) summarised the factors that influenced the development of a corporate bond market as legal framework, state regulation and taxes, information and communication technologies, competition with bank loans. The earlier research by Astrauskaite (2014) did not find enough supportive evidence to either reject or accept the hypotheses about growing information and communication technologies measures insignificance on the country's bond market development. Fabella and Madhur (2003) applied the expositive elements framework containing: size of the bond market, secondary market turnover, maturity structure of government bonds, investor base, tax treatment of bonds, market infrastructure, primary issuance method, secondary market transactions, cross-country electronic connection, and qualitative assessment of the legal and regulatory framework. Burger and Warnock (2005) added the influence of the rule of law, creditor rights, fiscal balance, country size, growth rates.

Ayala et al. (2017) stressed the role of institutions, macro fundamentals, and global cyclical factors, where the relative sensitivity to global factors appeared to depend on the size of the foreign currency bond market rather than local fundamentals. Eichengreen and Leungnareumitchai (2004) concentrated their study on the size factor, where the expositive elements framework was extended into the comparative field- the authors found that larger countries had better-capitalised bond markets as related to GDP. The study also argued that the development of a corporate bond market was related to the banking sector, where the countries with more competitive, better-capitalised banking systems had larger markets. The factors, which are influencing the development of the bond market, are institutional quality such as level of corruption and introduction of internationally recognised accounting standards by the companies.

Eichengreen et al. (2008) further developed the framework and found size, GDP per capita and trade openness, interest rate volatility were positive and significant for private bond markets. Mu et al. (2013) analysed African corporate bond markets - similar to Eichengreen and Luengnarue-mitchai (2004) - the researchers determined that economic size, GDP per capita and the land area had a positive and statistically significant effect on the market. Bae (2012) in his research on Chinese bond markets distinguished that GDP per capita (as the measure of economic develop-ment) was the most significant variable, where the size of the banking sector and size of the sov-ereign bond market had a positive influence on the development of the corporate segment.

The quality of property rights and contracting institutions was found as a non-influencing factor for the development of the corporate bond market by the study of Braun and Briones (2006). The researchers stressed that the bond market development had a positive correlation with GDP per capita as a measure of general economic development. The presence of institu-tional investors in the market was positively correlated with the development of bond markets. The study found other factors of minor importance: macroeconomic aspects, country size effect, and the existence of a fixed setup.

Macroeconomic indicators of the country as influencing the development of the corporate bond market segment were identified by Burger and Warnock (2005) and Eichengreen and Leungnareumitchai (2004). Burger and Warnock (2005) have revealed that countries with stable inflation rates and strong creditor rights have more developed local bond markets and rely less on foreign-currency-denominated bonds, where the ability to borrow internationally in the local currency helps to avoid the pitfalls of a currency mismatch and thus may further stabilise macro-economic performance. Eichengreen and Leungnareumitchai (2004) revealed the influence of the stable exchange rate on the bond market development through lower currency risk and thus en-couraging foreign market participants. While the study of Dittmar and Yuan (2008) related the corporate bond segment to the sovereign one and revealed that the latter by establishing the benchmark did promote the corporate one, the previous study of Eichengreen and Leungnareumitchai (2004) did not prove the tight relationship.

Even though not providing the homogeneous opinion on the influence of the sovereign segment, the majority of the academics do support the interrelation of both sovereign and corpo-rate bond segments in a country. Laeven (2014) analysed the development of local capital mar-kets and found the factors influencing the development to be: macroeconomic policies and legal

environment that protects property rights (the government can provide for stable macroeconomic policies and an institutional framework that promotes investor rights), presence of a rating agencies (rating agencies provide an independent credit risk assessment needed for the development of local corporate bond markets - could be encouraged by the government). The study stressed pension reforms, financial liberalization, and tax reforms to increase the market size.

Additional factors were determined by the academic studies. Adelegan and Radzewicz-Bak (2009) analysed the corporate debt market in Africa. The research indicated that the variables positively correlated with the development of the corporate bond market were the domestic bank credit, the variability of the exchange rates, lack of capital control and fiscal balance. Sui (2011) further pointed on the lack of innovative varieties of corporate bonds (comparatively low yield and 3-5 years duration choice), excessive administrative control over corporate bond issuance, lack of authoritative credit rating institutions, undeveloped secondary corporate stock market, and poor information disclosure.

Rajan and Zingales (2003) stressed that the openness of the economy stimulated securities markets development. Felman et al. (2014) focused on ASEAN-5 bond markets (a group of countries including Indonesia, Malaysia, the Philippines, Singapore, and Thailand) indicating that investor base and infrastructure investments expanded the bond market. Harwood (2000) found an indirect positive influence of the sovereign debt segment on the corporate debt segment. Gozzi et al. (2012) identified that companies issued different bonds in local and international markets and thus two markets offered different types of securities thus acting as complements: for international markets firms conducting larger issues, of shorter maturity, in foreign currency, and with fixed interest rates. Jiang et al. (2001) examined both *Organisation for Economic Cooperation and Development (OECD)* and emerging economies to determine the positive correlation between bond issuance and bank credits. While proved to be the statistically important for the country sample as selected by the authors of the research, those factors were seldom indicated by the other studies.

In the result of the analysis of academic studies as classified to provide expositive elements frameworks, the Author has developed the expositive elements framework, which will be applied to the analytical study of the development of the corporate bond market in Latvia (Table 1). While there is a lack of a unified approach of grouping or classifying the factors between the

studies outstanding, the Author groups the determinants into two clusters: measurement elements of the bond market and legal and macroeconomic elements.

**Table 1. Corporate bond market expositive elements framework**

<b>Measurement elements of the bond market</b>	<b>Legal and macroeconomic elements</b>
Size of the bond market (sovereign and corporate, local and international segment)	Qualitative assessment of the legal and regulatory framework (including information disclosure, primary issuance method)
Secondary market turnover, transactions of the corporate bond market	Lending to SME segment, foreign ownership of the banks
Maturity structure of government bonds (including the presence of a benchmark yield curve)	Tax treatment of bonds
Investor and issuer base of the corporate bond market	Internationally recognised accounting standards
Market infrastructure (including cross-country electronic connection, information and communication technologies, presence of the credit rating agencies, efficient 'REPO' market, active market makers (dealers)) of the corporate bond market	Macroeconomic factors: country size, growth rates, global cyclical factors, openness of the economy, stable exchange rate, interest rate volatility
Stock market development	

*Source: Author's construction based on theoretical findings.*

While most of the expositive elements studies provide the framework for analysis of the corporate bond market in a country, the analysis is based on the qualitative assessment of the situation. Moreover, the determinants of the development of the corporate bond market are specific to the country, or country sample analysed. The expositive elements frameworks lack the universal applicability and thus are criticised by the Author for their limited applicability.

### **1.2.2. Comparative elements frameworks**

Comparative elements frameworks provide a ratio-based structure for the comparative assessment of the corporate bond market of a country as related to another country or group of countries. The Author detects the study of the *World Bank* (2004) as the first attempt to standardise the assessment of the development of a bond market via the variables introduced. According to the *World Bank* (2004) the previous attempts to analyse and measure the development of the financial sector were deficient in four critical aspects: lack of benchmarking, lack of a single focal point, lack of comprehensive information, lack of proper definitions thus could be treated more as a data collection exercises in a one or few selected dimensions. As compared to the studies of Fabella and Madhur (2003), Burger and Warnock (2005), Braun and Briones (2006), and Dittmar and Yuon (2008), essential limitation factors were employed and interpreted by the Author as influencing the results of the Financial Sector Development Indicators (FSDI) as provided by the *World Bank* (2004): lack of macroeconomic factors, lack of regulation framework and

development of the banking sector. FSDI framework measures the comparative development of the bond market and its corporate segment of a country by dividing the relevant ratios into 4 groups: size, access, efficiency and stability (Table 2). FSDI has been previously applied and tested.

**Table 2. Financial Sector Development Indicators framework**

<b>Size</b>	<b>Efficiency</b>
Ratio of private sector bonds to GDP	Quoted bid-ask spreads(10-yr government bond yield)
Ratio of public sector bonds to GDP	Turnover of private sector bond on securities exchange
Ratio of international bonds to GDP	Turnover of public sector bond on securities exchange
Dummy variable: Existence of bond market	Settlement Efficiency Index
Dummy variable: Existence of corporate bond market	
<b>Access</b>	<b>Stability</b>
Government bond yield (3 months and 10 years)	Volatility of sovereign bond index
Ratio of domestic to total debt securities	Skewness of sovereign bond index
Ratio of private to total debt securities (domestic)	Ratio of short-term to total bonds (domestic)
Ratio of new corporate bond issues to GDP	Ratio of short-term bond to total bonds (international)
New corporate bond issues (\$ billion)	Correlation with German bond returns
	Correlation with US bond returns

*Source: World Bank (2004).*

Size dimension represents the most common measure used in the academic studies: Fabella and Madhur (2003), Burger and Warnock (2005), Braun and Briones (2006), Eichengreen and Leungnareumitchai (2004), Eichengreen et al. (2008) have provided the relative comparison of the elements of the bond market to GDP. The FSDI study has discovered that high-income OECD countries had substantially larger bond markets, whereas the developing countries had difficulty utilising international markets (World Bank, 2004). Among the reasons mentioned was the limitation of the management of fiscal and exchange rate policies in the developing countries. The FSDI study suggested that to overcome the size constraint for the small countries and develop bond markets, they should issue bonds in foreign countries and foreign currencies, or develop common securities exchanges and spread the infrastructure costs among members.

Access dimension characterises the cost of capital and simplicity for domestic companies to access it (World Bank, 2004). The study revealed that bond issuance in high-income OECD countries accounted for nearly 90% of the corporate bond issues globally. Corporate bond issues

in developing countries are still small by global standards. Efficiency dimension targets the liquidity of the secondary bond market by measuring the spread to the benchmark. Efficiency factor is widely present in other analyses of the corporate bond market: the turnover in the secondary market and the number of secondary market transactions have been analysed by Fabella and Madhur (2003). Stability dimension was analysed by measuring volatility, skewness, maturity structure and the correlation between bond returns (World Bank, 2004). The results have revealed that the larger markets are more efficient and provide more trouble-free access to the capital. Fabella and Madhur (2003) analysed stability by introducing the maturity structure of the market.

The study of Cihak et al. (2012) further developed the FSDI framework. The study has stressed that size, access, efficiency, and stability are proxies of the services provided by the financial system, where “access” does not directly measure how well the financial system identifies good investments, regardless of the collateral of the individual; but it provides an approximation of the scope of use of particular financial institutions and instruments. While the paper of Cihak et al. (2012) covered the whole financial sector, the study of the *World Bank* (2004) guided the flexibility to analyse either of financial institutions, financial market or both, where FSDI analysed the bond market and its corporate segment. Both the study of the *World Bank* (2004) and Cihak et al. (2012) analysed the whole scope of the financial market including financial institutions and financial markets, where FSDI covered bond market and its corporate segment. While providing 3-6 metrics for each of the areas, the framework provides relative flexibility for its implementation where the broad dimensions: size, access, efficiency, and stability are fixed, the headline indicators or ratios can be adjusted depending on the research object. The indicators analyse the raw data in the form of expert opinions, regression, and principal component analysis or other statistical techniques (The World Bank, 2004).

The study of the *World Bank* when testing the model on the selected data set indicated that efficiency area indicators were represented by quoted bid-ask spreads (10-yr government bond yield) instead of the four metrics of the bond market efficiency measurement offered: quoted bid-ask spreads (10-yr government bond yield), turnover of private sector bond on securities exchange, turnover of a public sector bond on securities exchange and settlement efficiency index. While measuring the bid-ask spread of the government benchmarks, the study signalled the turnover indicators for the public and private segment were not reasonable since many trades

were missing due to their over-the-counter (OTC) trading basis. Moreover, the study of Cihak et al. (2012) also stressed that the turnover ratio for the bond segment suffered from incomplete data. In the result of the analysis of efficiency indicators, the Autor has detected the need for complementing efficiency area indicators with additional measures. Besides, the methodology of FSDI stressed that while the dimensions such as size, access, efficiency, and stability remained fixed, the sectors could be adjusted depending on the review desired. Moreover, it is flexible for substituting information within the matrix.

The efficiency of the bond market and its corporate segment is not an easy indicator to analyse from the perspective of the empirical evidence. Fadejeva and Romanova (2012) defined market efficiency from the standpoint of market prices reflecting all available information about the corresponding company. Rupeika-Apoga (2013) indicated three directions to focus on improving financial market efficiency: macroeconomic policy and data transparency; supervision and regulation of financial intermediaries; and institutional and market infrastructure. Hartzmark et al. (2011) stated that efficiency indicators were not fully understood by the academics. While being widely studied by the researchers, efficiency is still raising questions, especially when applied to the corporate bond segment for the non-USA area.

The Author finds that most of the researchers have concentrated their studies in equity segment and US bonds because of the high availability of the historical data. For the corporate bond segment the historical data is limited due to 1) substantial difference between equity and bond market setup, 2) different level of data availability for European and USA corporate bond segments. The difference between the market infrastructure, trading process, and market participants for the two asset classes makes the results of the stock market less applicable for the analysis of the bond market. The central gap between the two financial instrument trading processes is in exchange trading vs. OTC trading for bonds as well as the investor base. For equities, the transparent exchange trading takes place publically with trade information disclosing the details of the price, quantity, and timing. While the trading characteristics such as turnover, size per market maker, trading size etc. for equity are relatively easy identified, the OTC nature of the bond market makes those characteristics difficult to analyse. The process of trading bonds is not public. The market makers, typically the banks trading the bonds on their name, provide daily quotes to the information vendors such as *Reuters* and *Bloomberg*, where the professional market participants (clients of *Reuters* and *Bloomberg*) can access the information on the pricing. Addi-

tionally, the potential buyer or seller contacts the price provider directly for the update of the quote information, where specific size or news published could affect the pricing. Goldstein et al. (2017) stressed the relatively infrequent nature of OTC trades of bonds as compared to equities and government bonds: while in 2014 corporate bonds weighted for 20.1% of the total bonds outstanding in US market, the trading volume for corporate bonds accounted 3.7%. Even though the majority of the bonds are listed on the exchange, the trading volumes in the regulated markets are small and not representative for the whole market- corporate bond trading is decentralised and almost fully takes place OTC.

Both exchange and OTC bond trading are regulated by the local regulatory authority, where the exchange imposes additional regulation on all the bond issuers and trading process. Moreover, Hartzmark et al. (2011) stressed the differences in the average transaction size and frequency of trades, where nothing in the economics literature suggested that in an efficient market a security must trade every day, while Edwards et al. (2007) found that from the sample observed bonds lacked trades 48% of the days with average as low as 2.4 trades per day. The lack of daily trading could mean that the investors are waiting for the “right moment” or that trade is done OTC. The investor base for both asset classes is different as well: private individuals are well-represented in a stock market due to the low entry costs and small volumes of investment allowed. The bond market is typically dominated by the institutional investors such as pension funds, insurance companies, banks, which could apply the less active buy-and-hold strategy. The difference between the markets is important from the perspective of the scope of control and influence: the study of Ramos-Francia and Garcia-Verdu (2017) has found that the financials authorities might be able to impose a fee on investors (which are not asset managers), however holding minimal influence on the asset managers actions.

Transparency is traditionally treated as one of the main characteristics of efficiency while the academic studies on the topic vary in their findings. The importance of efficiency of the market was recognised by Fama (1970) where he defined the efficient stock market as the one, where prices at each moment included available information about future values. The study raised the link between efficiency and transparency. Madhavan (2000) defined market transparency as the ability of market participants to observe information about the trading process. Hartzmark et al. (2011) selected price availability and presence of volume information as the definition of transparency. Duffie et al. (2017) emphasised the role of benchmarks in price trans-



parency of the OTC markets: while the benchmark decreases dealers' profit margins, it encourages greater participation by investors. The majority of studies have determined that the higher level of transparency positively contributed to market efficiency: Pagano and Roell (1996) have found that greater transparency generates lower trading costs for uninformed traders on average, although not necessarily for every trade size, the study of Gu and Helenkamp (2010) has stated that more transparency intensifies competition, lowers prices and enhances welfare. Still, the view has not been shared by many academics: the research by Scalia and Vacca (1999) revealed that more anonymity increased the market liquidity and reduced volatility, Edwards et al. (2007) discovered that higher transparency by raising the cost of the price providers via liquidity providing eventually decreased the participation of the price providers and thus decreased efficiency, the study of Gu and Helenkamp (2010) proved that too much market transparency harmed competition and reduced welfare.

The Author divides the academic studies on the market efficiency between the ones on the stock market and bond market because of: a) difference between the public (equity) and OTC (bond) origin of trading and b) uncommon investor base: retail investors dominate equity trading whereas professional investors dominate bond trading. The paper of IOSCO (2004) found that while the transparency of exchange-traded corporate bonds was often the same as, or similar to that of other listed securities, there was little if any transparency for OTC-traded corporate bonds. The study revealed several factors, which influenced the limited need for the transparency of the bond market. Due to its focus on the professional investors the participants of the bond market: a) have confidence in the bond market and can determine the fair value themselves and thus compare it with the price received, b) have access to the price info, which is not available to the public, c) corporate debt market is self-pricing so that if the professional client is not satisfied with the price offered she will go to another price provider, which creates the competition for the price providers and keeps them from overcharging. Retail investors lack all the factors described; moreover, authors are stressing that bond market structures are becoming more complicated thus calculating fair value and pricing is more difficult and less formulaic.

The study of Edwards et al. (2005) supported the division between retail and professional investors in their approach to prices and the effect of the increased transparency. The study of Genberg (2015) stressed that professional (or institutional) investors typically have long investment horizons and thus contribute to the stability of the bond market. The study of IOSCO

(2004) put the focus on the professional investors due to the OTC and revealed several factors, which influenced the limited need for the transparency. While professional investors have sufficient knowledge and information on the market with their ability to determine the fair price and look around for better prices, the retail investors have limited awareness on the market prices, and lack the ability to determine the fair price. Moreover, they cannot talk directly to the price providers and negotiate the better pricing. While they cannot compare the price received with the publically available information, retail investors are less likely to participate in the bond market. The study stressed the importance of the transparency of supply and demand.

Market transparency and investor base were emphasised in the study of Hartzmark et al. (2011) when summarising the factors recognised in securities litigations by the federal courts in the US as the determinants of the securities market efficiency: a) high average weekly turnover of the securities; b) continuous coverage of the securities by investment professionals, along with the regular disclosures by the company; c) a relatively high number of market makers or dealers of the securities, along with arbitrageurs; d) the securities were eligible to file on U.S. Securities and Exchange Commission Form-S-3 and to incorporate by reference on U.S. Securities and Exchange Commission Form S-4; e) a relatively large cumulative face value of the securities; f) a relatively large proportion of institutional holdings of the securities; g) opportunities for arbitrage, including short selling at reasonable borrowing rates or observing violations in put-call parity; h) a reasonably small bid-ask spread; and i) a sufficiently large float (i.e., the number of outstanding securities that are not held by insiders of the corporation).

While transparency is one of the measures of market liquidity, the study of the *World Bank* (2004) has focused on liquidity to measure the efficiency of the market. The paper of Cihak et al. (2012) related the efficiency proxies to turnover since higher turnover meant more liquidity, which in turn allowed the market to be more efficient. This coefficient is challenged for the bond markets since often suffers from incomplete data. Thus the research stressed that the most commonly used variable was the tightness of the bid-ask spread. The research of Biais et al. (2006) defined efficient bond prices as the ones incorporating all available information, where liquid bond markets brought transactions costs down for investors. While identifying the cases and reasons why transparency enhances liquidity and welfare, as well as cases and reasons why it reduces liquidity and welfare, the paper has not provided a clear view about the influence of transparency on the liquidity in the market. Additionally, Bessembinder and Maxwell (2008)

identified the difference between the liquidity of the corporate bond market and other bonds, where the latter were relatively more liquid than corporate bonds.

While most of the academics establish a clear connection between efficiency and liquidity, similar to measuring efficiency, there is no consensus on how to measure the liquidity of an asset. The research of Houweling (2003) stressed liquidity to be a rather subjective concept where a lot of measures have been proposed by the researchers to approximate the liquidity of a bond. The study of Guo et al. (2017) named the factors influencing the liquidity in the financial markets as the cost of dealers' inventories, information asymmetry including the information about the fundamental value of the company. While not identifying the united view on measuring liquidity, the study of Dick-Nielsen et al. (2012) used bid-ask spread, price impact on trades, turnover, zero-trading day (as a percentage of trading days in a quarter), and liquidity risk. FCA (2016) applied similar to Dick-Nielsen indicators. Fleming (2001) selected trading volume, trading frequency, bid-ask spreads, quote sizes, trade sizes, price impact coefficients, and on-the-run/off-the-run yield spreads for the analyses.

Houweling (2003) emphasised that when measuring the OTC market (known for its lack of transparency) liquidity indirect measures that were based on bond characteristics and/or end-of-day prices should be used. The research of Houweling (2003) applied metrics such as issue amount, listed age, missing prices, price volatility, and a number of contributors, yield dispersion; to estimate bond liquidity. All of the metrics were based on the bond characteristics and end-of-day prices since the article stressed the OTC basis of the trade in corporate bonds. Mizrach (2015) stressed the importance of bid-ask spread and called it a "first order measure". The research mentioned price providers (or counterparties) as the measure of bond liquidity. The article explained that dealers appeared to source more counterparties to make trades, which stimulated the growing size of dealer networks. Other criteria mentioned by Mizrach (2015) were not relevant since research made for USA market based on Trade Reporting and Compliance Engine (TRACE) reporting data: changes in buy-side participants, trading costs, average trade size and block trade, trades and volume, credit quality, trading activity in new issues. The distinctive data analysis of the USA market was stressed by Heck (2015), which described that since 2005 almost 99% of the transactions in this market have been reported in TRACE under U.S. Securities and Exchange Commission approved rules, which created a much more prolific environment for the corporate bond research for the US segment.

The research by Wyman (2015) has provided another attempt to measure the development of the corporate bond market. The framework possesses the characteristics of descriptive and comparative frameworks still lacking the application practice and methodology for a potential application. As opposed to FSDI, the framework by Wyman (2015) has focused on the measurement of the progress not naming the factors that can influence the development of the corporate bond market. The framework divides the measurements into 4 areas: issuers and investors' ability to access corporate bond markets, perceived risk of the market framework, relative cost and returns from participating in the market, and ability for them to effectively find a match for their supply or demand. While stressing that it is difficult to include and measure all the factors affecting the development of the corporate bond market, the research has suggested a set of proxy metrics that can be used to evaluate corporate bond market development. Similarly to FSDI (2004), the research suggested flexibility and adding more metrics.

In the result of the analysis of the academic papers outstanding, the Author has identified the factors to measure the areas of size, access, efficiency, and stability. The measures are incorporated into the comparative elements framework as developed by the Author (Table 3).

**Table 3. Corporate bond market comparative elements framework**

<b>Size</b>	<b>Efficiency</b>
Ratio of sovereign bonds to GDP	Quoted bid-ask spreads (10-yr government bond yield)
Ratio of corporate bonds to GDP	Number of the counterparties providing the prices
Ratio of international bonds to GDP	Size of the quote
<b>Access</b>	<b>Stability</b>
Government bond yield (3 months and 10 years)	Volatility of sovereign bonds
Ratio of domestic to total debt securities	Skewness of sovereign bonds
Ratio of corporate to total debt securities (domestic)	Ratio of short-term to total bonds (domestic)

*Source: Author's construction based on scientific publications analysis.*

The Author will apply the comparative elements framework developed to the analytical study of the development of the corporate bond market in Latvia.

### **1.2.3. Stages of the development of a corporate bond market**

Stages frameworks provide the metrics for evaluation of the stage of development of the corporate bond market in a country. As related to the expositive and comparative elements frameworks, stages frameworks do not require the comparative peer countries while delivering the evaluation of the development of the corporate bond market in a country (any country, one

country at a time). While defining the evolutionary process of the development of the corporate bond market in a country, stages frameworks lack time or historical timeline component- the stage of the development is defined in momentum.

The stages of development were analysed by Khalid (2007) with the focus on bond market segment and Wyman (2015) with the focus on the corporate bond market segment. Khalid (2007) defined 3 stages of the development of the bond market in a country: initial, intermediate and developed. The metrics as listed by Khalid (2007) were saving and investment opportunities, issuer and investor base, intermediaries, infrastructure, macroeconomic stability, regulatory system, credit rating agency, benchmark. The research by Wyman (2015) has named various factors that can influence the stage of development of the corporate bond market such as policy development actions: market and product development (market infrastructure, benchmark curve, credit rating agency) and risk management (regulatory body, market standards, and standardisation practices); and types of market participants: issuers and investors. The Author, in the result of the analysis, has developed a staging framework and identified six stages of development of the corporate bond market in a country while further revealing the determinants of the corporate bond market development (Table 4).

**Table 4. Stages of the development of a corporate bond market**

<b>Stage</b> <b>Metric</b>	<b>Non-developed</b>	<b>Developing</b>	<b>Basic development</b>	<b>Developed</b>	<b>Stable development</b>	<b>Well developed</b>
Market infrastructure	Non-existing	Basic	Moderately developed	Well-developed	Well-developed	Well-developed
Benchmark curve	Non-existing	Existing for shorter maturities	Existing for midterm maturities	Existing for all maturities	Existing for all maturities	Existing for all maturities
Macroeconomic and political environment	Weak	Stable	Good	Favourable	Favourable	Favourable
Legislative base	Non-established	Regulatory body to govern securities market introduced, reasonable documentation being developed	Market standards are being developed, minimum level of documentation and disclosure is standardised	Evolve regulations to better reflect regional/ international standards and meet evolving stakeholder needs	Refine regulations to adapt to more complicated market structure and instruments	Potential bilateral or international treaties to facilitate and govern cross-border capital flows
Issuers	Government	Government, quasi – sovereign compa-	Government/ quasi, financial institu-	Government/ quasi, financial institu-	Government/ quasi, financial institu-	Government/ quasi,

		nies	tions, largest corporates	tions, medium – large corporates	tions, wider range of local corporates	financial institutions, wider range of local corporates
Investors	No sizeable savings	Foreign investors, banks, domestic institutional investors	Foreign investors, banks, domestic institutional investors	Foreign investors, banks, domestic institutional investors and retail	Foreign investors, banks, institutional investors, retail investors, alternative investors	Foreign investors, banks, institutional investors, retail, alternative investors
Credit rating agencies	Non-existing	Non-existing	Non-existing	Non-existing	Being developed	In place
Actions to take:	Establish the basic norms for a bond market to function in the most efficient manner. The policies of financial liberalization should be combined with deregulation, market determined pricing mechanism, macroeconomic stability, central bank reforms, incentive mechanism for market participants and banking sector reforms.	Establish benchmark curve through government bond issuances Develop institutional investors	Measures should be taken to develop a primary market of public and private securities. Country need public company, disclosure regulations, credit rating agency, and OTC arrangements to support trading. The country should have a benchmark for pricing long maturities.	Country should develop a secondary market for securities, to help pricing new issues. Reduce issuance costs and issuance timeline Promote growth of asset management industry; among issuers an investor relations culture and ability to manage compliance of covenants	Introduce more sophisticated financial instruments Development of a domestic swap curve Ability for repos – securities, borrowing/ lending Disclosure rules to be strengthened. Training of individuals involved is important to clearly understand the market risk, reward, best practices	Introduce (regulatory) approval processes for international issuers. Potential linkages of domestic market with international markets

Source: Author's construction based on scientific publications analysis.

The stages act as the measure of the development of the corporate bond market in a country including the actions recommended to be taken by the government at the respective stage. The framework identifies seven metrics: market infrastructure, presence of the benchmark curve, macroeconomic and political environment, legislative base, issuers, investors, and presence of the credit rating agency in a country. The Author will incorporate the staging framework into the Corporate Bond Market Development model and apply to Latvia in part 3 of this research.

Even though the academics vastly apply expositive elements frameworks in their analysis, the Author suggests comparative elements frameworks and stages of development as pre-

ferred for the application (when compared to expositive elements frameworks) due to their more universal approach and wider applicability.

#### 1.2.4. Determinants of the development of a corporate bond market

While expositive and comparative elements frameworks and staging framework provide the structure for assessing the development of the corporate bond market, they contain the determinants as identified by the academic studies to be influencing the development of the corporate bond market. In the result of the theoretical analysis of expositive and comparative frameworks and staging frameworks outstanding, the Author has identified 27 factors, which are claimed by the researchers to influence the development of the corporate bond market in a country (Table 5).

Table 5. **Determinants of the development of a corporate bond market**

Factor	Source
1. country size and wealth (most frequent measure as defined by the academic studies: GDP per capita)	Mu et al. (2013), Bae (2012) Eichengreen et al. (2008), Braun and Briones (2006), Burger and Warnock (2005), Eichengreen and Leungnareumitchai (2004)
2. qualitative assessment of the legal and regulatory framework (most frequent measures as defined by the academic studies: influence of rule of law, creditor rights, property rights, lack of capital control)	Astrauskaite (2016), Wyman (2015), Laeven (2014), Adelegan and Radzewicz-Bak (2009), Burger and Warnock (2005), Eichengreen and Leungnareumitchai (2004), Fabella and Madhur (2003)
3. lending to SME segment, foreign ownership of the banks	Astrauskaite (2016), Behr et al. (2015), Hasan et al. (2014), Hakenes et al. (2014), Popov and Udell (2012), Bae (2012), Adelegan and Radzewicz-Bak (2009), Eichengreen and Leungnareumitchai (2004), Jiang et al. (2001)
4. size of the sovereign bond market (most frequent measures as defined by the academic studies: sovereign debt to GDP, turnover of sovereign debt on the exchange)	Bae (2012), Dittmar and Yuan (2008), The World Bank (2004), Harwood (2000)
5. stable exchange rate	Adelegan and Radzewicz-Bak (2009), Eichengreen and Leungnareumitchai (2004)
6. investor and issuer base	Wyman (2015), Felman et al. (2014), Fabella and Madhur (2003)
7. market infrastructure	Wyman (2015), Felman et al. (2014), Fabella and Madhur (2003)
8. tax treatment of bonds	Astrauskaite (2016), Fabella and Madhur (2003)
9. internationally recognised accounting standards	Eichengreen and Leungnareumitchai (2004)
10. growth rates	Burger and Warnock (2005)
11. secondary market turnover and transactions	The World Bank (2004), Fabella and Madhur (2003)
12. interest rate volatility	Eichengreen et al. (2008)
13. global cyclical factors	Ayala et al. (2017)
14. information and communication technologies	Astrauskaite (2016)
15. size of the bond market	The World Bank (2004), Fabella and Madhur (2003)
16. active market makers (dealers)	Wyman (2015)
17. quoted bid-ask spreads (10-yr government bond yield)	The World Bank (2004)
18. presence of a benchmark yield curve	Wyman (2015)

19. maturity structure of government bonds (most frequent measure as defined by the academic studies: ratio of short-term to total bonds (domestic), ratio of short-term bond to total bonds (international))	The World Bank (2004), Fabella and Madhur (2003)
20. international debt (measure as defined by the academic study: international debt to GDP)	The World Bank (2004)
21. stock market development	Sui (2011)
22. openness of the economy	Rajan and Zingales (2003)
23. efficient 'REPO' market	Wyman (2015)
24. primary issuance method	Fabella and Madhur (2003)
25. information disclosure	Sui (2011)
26. cross-country electronic connection	Fabella and Madhur (2003)
27. presence of the credit rating agencies	Wyman (2015), Laeven (2014); Sui (2011)

*Source: Author's construction based on scientific publications analysis.*

The Author has grouped similar determinants and provided the details of the most frequent measures as applied by the researchers. The Author has further divided the factors (Table 5) as affecting the stage of the development of the corporate bond market in a country (Table 4): presence of market infrastructure, presence of benchmark curve, macroeconomic and political environment, legislative base, presence of investor and issuers, presence of credit rating agencies. The seven factors described could be grouped into 3 groups: 1) macroeconomic and legislative factors, 2) the factors related to the market participants: issuers and investors; as well as market infrastructure providers, 3) corporate bond market specific metrics. The Author will apply the metrics for both further analytical study of the corporate bond market in Latvia (applying both expositive framework and comparative framework), empirical study, establishing the Corporate Bond Market Development model and its application for identifying the development of the corporate bond market in Latvia.

### **1.3. Corporate bond market as part of the financial system of a country**

While the development of the corporate bond market can be defined and measured, the processes as undergoing in the country as well as globally cannot be skipped and should be analysed for their influence and potential implications from the perspective of the corporate bond market development. The academic discussion on whether financing on both corporate and sovereign level should be bank-based or market-based has taken place for a long period of time where the academic research on the topic concentrates in the period mid-1990s- early 2000s. Langfield and Pagano (2016) have explained that since the early 1990s, the European banking system has expanded rapidly, where the European capital markets experienced moderate changes. In the result, European financial structure has become strongly bank-based. The second wave



of academic interest to the topic could be observed in mid-2010, where the reflections from the financial crisis and proximity of *Capital Markets Union* initiative by the *European Commission* stimulated the discussion. Moreover, the study of Ayala et al. (2017) underlined the increase in the corporate bond issuance after the global financial crisis, where in the period 2009-2014 the issuance of emerging markets non-financial corporate bonds increased more than 3 times.

Academic papers support the view that the financial markets are not the natural first choice for the company. The study of Ma et al. (2005) and Tetreva (2007) stressed that initially, firms relied on internally generated funds or funds borrowed from the extended family of firms, afterwards relying on external funding in the form of bank loans. Rupeika-Apoga and Danovi (2015) supported the view by finding that small and micro enterprises in Latvia were financed mostly by own capital and family and friends, besides to state support/grants programmes for start-ups, while medium-size companies in Latvia were mostly using debt capital (short-term credit loans, bank overdrafts, and credit lines), leasing, retained earnings, government grants and different kinds of guarantees, especially export guarantees. Kantane et al. (2010) highlighted the increasing role of financial management during the development stage of enterprise in a situation of increased competition. The importance of debt financing was found to be increasing in the course of the economic development of a country.

The financial system of the country brings together lenders, borrowers, financial markets and financial intermediaries with the aim to channel financial resources from the financial market participants with the excess to other financial market participants, who have a shortage. Mishkin (2009) defined two flows of the financial resources between the borrowers and lenders: through the financial markets or direct finance and the financial intermediaries or indirect finance. The practice of dividing market and bank financing is also used to characterise the entire economy. In the bank-based financial system, the role of the banks is central to redistributing financial resources. On the contrary, in the market-based financial system, securities market shares the stage with the banks in getting private savings to companies, applying corporate control, and easing risk management (Demirguc-Kunt and Levine, 1999). Studies by Levine (1997, 2002) summarised academic views by dividing market-based and bank-based approaches.

The studies of Gerschenkron (1962), Boot and Thakor (1997), Boyd and Smith (1998), Rajan and Zingales (2001) supported the view that banks contribute more efficiently to the financial market of the developing countries. Diamond (1984) pointed to the monitoring function

of banks thus smoothing the risk; while Benston and Smith (1976) on lowering of transaction costs of funds. Moreover, the state-owned banks will route the money flow to the vital projects thus developing the economy. The study of Allen and Gale (2001) further highlighted the role of banks in the early stage of economic development while the sufficient legal and financial frameworks were not in place. Fecht et al. (2012) stressed that banks remained at the core of the financial system and were linked to each other via interbank and other relevant tools. The paper found that the enhanced concentration in lending did not necessarily increase risk since a well-functioning interbank market allowed to achieve the necessary diversification.

Correlation between SME financing and the structure of the banking sector was found by Hasan et al. (2014) where the increasing number of foreign banks in a country stimulated the vulnerability of the SME segment. The relation between the ownership of the banks, the scale of banks and their lending practices to SMEs were found: local cooperative banks lend more than large domestic banks and foreign-owned banks. Moreover, it was found that SMEs perform better in counties with a majority of cooperative banks than in counties dominated by foreign-owned banks or large domestic banks.

Popov and Udell (2012) have found that foreign bank presence in a country is associated with higher access to loans, higher firm-level sales, and lower loan rates and higher firm leverage, as well as their tendency to finance only larger, established, and more profitable firms. Hakenes et al. (2014) have verified the direct positive link between the presence of small regional banks and the development of the local economy and its growth with the effect being stronger in less developed regions while stressing their role in many European countries. The study of Hasan et al. (2014) proved the negative effect on profitability, leverage, and investment of SME firms on the presence of a larger number of foreign-owned banks in a country.

Popov and Udell (2012) stressed that heavy foreign ownership in eastern European banking where by 2008 foreign banks controlled around 4/5 of the assets of the banking segment. Behr et al. (2015) stressed the role of the government involvement in the lending process via banks with government ownership and their lending patterns relevant to the respective economic cycle phase. Those banks would approve relatively more SME loan applications in recessions while being less generous in booms thus controlling the cyclicity of the banking system in a country. The stimulation of economic growth via stimulating SME lending has been emphasised

by Behr et al. (2015) suggesting the increased role of local savings banks, government-sponsored or guaranteed lending.

The academics widely criticise bank-based financing as the main type of funding of the European companies. For every credit, bank applies the rigid limit system thus measuring the risk and size of the debt, which according to the study of Levine (2002) may oblige the companies to introduce the conservative strategy and low risk thus limiting the potential cash flows. Another burden is that short-term bank loans or credit lines are not the most stable financial basis for a company as the rise in interest rates can deliver high rollover costs or even denial to roll over the debt in the case of capital market troubles. This view was supported by the study of Arteta (2005), which stressed the potential impact of the crisis on the availability of borrowed funds.

Banks are more open for the short-term financing, where the extension of the time horizon brings additional risks for the financial institution. The studies by Hart and Moore (1995) and Caprio and Demerguc-Kunt (1998) have discovered that firms tend to match maturities of their assets and liabilities. While the longer-term horizon of capital budgeting projects requests longer time resource, the study of Hameed (2007) has argued that in the emerging markets, due to weak corporate practices, i.e. accounting, auditing, and contract enforcement, banks solve the asymmetric information problem by lending for shorter terms. As a result, banks tend to lend for shorter terms than corporate bonds.

Demirguc-Kunt and Maksimovic (2002) stressed that the development of securities markets was more related to long-term financing, while the development of the banking sector to the availability of short-term financing. An opportunity to attract financial resources for a desired period of time in the desired currency and at a fixed rate provides the flexibility to the capital structure of the enterprise. The study of Sharma (2001) supported this view by stressing that the maturity mismatch in the corporate sector arising from receiving short-term banking credits to finance long-term projects should be solved by the bond market. Moreover, Arteta (2005) pointed that the flexibility was attained not only when issuing bonds- the liquidity of corporate bond secondary market made it possible for the company to repay its debt at any time by simply buying the bonds from the market. Harwood (2000) linked the bank- and market-based financing by stressing the positive influence of the banking sector in the development of the bond financing since banks acted as intermediaries in the trade as well as placed the excess funds in the market.

Corporations come to the bond market to address their financing needs where long-term oriented and cost-effective financing forms the continuity of the company and builds its competitiveness in the market. Corporate bond funding is advantageous for the company as it does not change the shareholder structure of the company thus being an active preventive tool against the takeover of the firm. Besides the absence of the indirect effect like bank introduced credit covenants- bonds holders do not interfere in the company's operations as banks do. Additional transparency and formation of the public credit history (as an important part of the bond issue process) can be a preparatory tool for the merger and acquisition process of the company.

Academic literature provides broad motivation for corporate debt issuing, where the study of Tocolovska (2008) summarised 4 factors as the economic rationale for corporate bond issue in comparison to bank credit and selling shares for a company: long-term source of financing, improvement of the cash flow by decreasing the cost of debt, optimization of the financial structure, efficient ownership structure. Hameed (2007) supported efficient competition to bank funding and long-term financing factors adding the aspect of enhancing financial sector stability.

The study of Faulkender and Petersen (2006) revealed that firms, which managed to raise debt publically not from the bank, had 40% more debt and 50% higher leverage ratios. The latter was supported by the study of Hameed (2007) - the bond issuer could apply its own chosen debt structure and attract additional finance without stating the specific need for it. The concept of attracting maximum funding possible was criticised by the study of Law and Singh (2014), which argued that additional funds were favourable for the company till the optimal level was reached thus the optimal level should be known and efficient channelling of financing should be applied.

A corporate choice for bond funding from the optimal capital structure perspective has been widely analysed in the academic studies. While Zelgalve and Romanova (2011) underlined the absence of a precise definition of the optimal capital structure of a company, the study revealed the increasing role of debt as the motivator for increasing the asset base of Latvian companies in the period of 1995 to 2008. The study of Faulkender and Petersen (2006) revealed that the decision of the large firms on the capital structure was dependent on capital market conditions. Saksonova and Cikste (2011) identified tax legislation, systematic environment risk, possible conflicts of interest, quality of assets and the availability of financing as the central factors necessary for optimizing capital structure. Ma et al. (2005) provided the view that multiple fi-

nancing channels (including the corporate bond market) improved firms' capital structures, promoted competition and encouraged innovation. Tetrevova (2007) stressed that issuing corporate bonds helped financials. The investment stage is often very costly for the company and the cash flow from the revenue-generating entities are seldom enough to finance all the new investments (Chorafas, 2005). Tetrevova (2007) concluded that corporate bonds could be used by company management for implementing both the rule of a horizontal property-financial structure and the rule of a vertical financial structure, however also for meeting the effort to reach an optimal financial structure.

Schinasi and Smith (1998) illustrated that effective securities markets were capable of pricing financial risks at least as well as bank credit officers, thus defining the objective market price of the corporate debt. The lower borrowing rates are attained by improving the public image of the company and the quality of its debt, acquiring the credit rating or raising the existing credit rating. Furthermore, the study by Faulkender and Petersen (2006) discovered that the companies with a credit rating held more external debt. Thus credit history and increased capital structure flexibility of the company are traditionally mentioned as the main advantages of issuing corporate bonds, which affects the interest paid for the funds utilised.

The stable and transparent credit history of the company is raising its opportunities to get additional financial resources at the decreasing price. The activity that decreases the costs of the business is increasing its profitability. This view was supported by the study of Hameed (2007), who proved that the positive credit history spoke instead of the company and attracting financing for less interest- selling its debt to the public formed the credit history of a company by increasing its transparency and accessing its risks through credit rating.

Besides establishing the credit history of the company, public debt issue also disseminates the credit default risk among many investors. Batten and Szilagyi (2002) defined that the bond market gathered the savings to make them distributed to the other sectors in need of funds to finance the capital investments. From the other perspective, the investment process redistributes the risk of the issuer between numerous investors thus shifting the potential losses out from the local banking sector. The study of Ibrahim and Wong (2006) pointed that this diversification helped companies to address capital needs more effectively, and allowed matching their asset-liability profiles. The effective harmonisation of the asset-liability sides of the balance sheet significantly improves the cash flows of the company.

Ibrahim and Wong (2006) stressed that a well-developed corporate bond market was crucial for risk diversification of the financial system, and adopting a market mechanism in the allocation and pricing of credit would also ensure greater efficiency in the allocation of funds to borrowers. The study of Ayala et al. (2017) revealed the opposite link: for the emerging markets, the corporate debt structure was dependent on the local fundamentals and global bank leverage. The study by Valle (2001) distinguished the functions of the corporate bond market emphasising that it diffused stresses on the banking sector by diversifying credit risks across the economy and supplied long-term funds for long-term investment needs. Corporate borrowers or bond issuers and investors are the participants in the bond market, which is divided into primary and secondary activity segments (Reilly and Brown, 2005).

The role of the bond market was characterised by Turner (2007) as central in financial markets because it generated market interest rates that told investors the opportunity cost of funds at different points in time, which was essential for any capital market development. The efficiency of corporate long-term financing via corporate debt was proved by Demirguc-Kunt and Maksimovic (2002), Bose and Dipankor (2003) and Harford and Uysal (2014). The research by Harford and Uysal (2014) concentrated on the efficiency issues and concluded that constrained access to debt external financing encouraged managers to be more selective in their investment decisions. The choice for the financing instruments as the subject to the terms and amount of capital needed was found by the study of Bose and Dipankor (2003): large-scale, long-term fixed investments were best financed through long-term corporate debt. Braun and Briones (2006) found that the average maturity of corporate bonds was positively correlated with the size of the overall bond market and of the sovereign segment.

Additionally, the studies by Allen and Gale (2001), Fujita (2000) and Levine (2002) revealed that market fund gathering added competition and thus efficiency and diversification to the process. Ryan et al. (2014) proved that financing constraints increased for companies as bank market power increased. The study of La Porta et al. (2001) showed that state-owned banks were more oriented on achieving political goals thus allocating the resources inefficiently. Peterson (2003) stressed that bonds had more ways to tap institutional and household long-term savings.

The criticism on the bond issues as the choice of funding by the corporate is rather scarce occasionally mentioning high costs, the lengthy process of preparation of issue documentation and accounting reporting as prepared under IFRS. Upon every bond issue, the documentation in

the form of bond issue prospectus is established between the issuer and investors in the result providing the conditions of borrowing for the issuer and terms of investment for investors. Still, the substantial workflow should be done by the issuer only when preparing the first prospectus as every next issue is using similar documentation and is relatively quicker in its preparation. While not broadly explored by the academics, the increasing regulatory burden as established by the *EC* is expanding the administration function as provided by the issuer thus requiring additional resources of the issuer.

While providing comparatively broad analysis on the motivation of corporate bond issuance, the academic literature is comparatively modest on the analysis of the FSI segment as the issuer segment in the debt market. Hawkins (2002) stressed that banks were both purchasers and issuers of bonds: banks held the majority of corporate bonds in Indonesia, Argentina, Brazil, Chile, and Malaysia while in Brazil, China, Germany, India, Indonesia, Mexico, Poland, Russia, and Thailand banks and other financial institutions accounted for most domestic bond issuance. The study of Braun and Briones (2006) revealed the high importance of FSI segment for the securities market of a country: the main difference between large and small bond markets was found to be that in the large markets issuers were disproportionately financial institutions.

The analysis of Wijesiri et al. (2017) found the relationship between the size and age of microfinance institutions (MFIs) to the efficiency of their access to finance. Liu (2013) proved the external financing costs were less influenced by the size of the company than internal. Tchakoute Tchuigoua (2014) found that the banking sector seemed to complement the microfinance sector given that MFIs in countries with developed banking sectors were more leveraged. In the result, the existing academic studies do analyse the corporate bonds issuance by the FSIs where motivating factors stimulating FSIs to come to the public debt market are seldom separated and size and characteristics of the issuers are mostly scrutinised.

Academic studies prove the influence of the existing regulatory environment and infrastructure present on both the capital structure and the bank versus market funding decision by the company. Mc Namara et al. (2017) proved that countries' lending infrastructure influenced SMEs capital structure. The maturity structure of the corporate debt is found to be influenced by the bankruptcy, information, legal and regulatory environments. The long-term debt is found to be dependent on an efficient bankruptcy environment, and short-term debt on the information and legal environments. Both long-term and short-term debt are found to be dependent on the

regulatory environment. While there is a considerable focus on bank financing for corporates as studied by the academics, Harel and Kaufmann (2016) have stressed that 50 percent of SMEs in traditional sectors had no assets to provide as collaterals, where Mc Namara et al. (2017) accentuated that most of the research in the area focused on publicly listed firms with much less known about SMEs. Mc Namara et al. (2017) suggested encouraging SMEs to consider alternative financing on the policy level where Popov and Udell (2012) stressed that SMEs may be particularly sensitive to changes in the supply of credit.

The role of the legal system as the one formatting the economic type of the country was revealed by the study of Levine and Demirguc-Kunt (1999): the research indicated that the legal system of the country formed the bank-based or market-based focus of financing where English legal systems were found to be likely form the market-based system, while civil law countries-bank-based. Later Levine (2002) developed financial services and legal-based views, which revealed the importance of financial sector as such- not stressing the dominating role of banks or financial markets but their cooperation; and the importance of legal framework respectively. The study supported no direct evidence of either market or bank-based economy being more efficient while stressing the dependence of the financial sector development on the level of development of the legal system. Moreover, the better developed financial sector influenced the economic growth while the source of financing bank or market was relatively unimportant. The importance of the legal base and law protection as the central in the choice for the source of financing was also stressed by Ergunor (2003).

Bank as the source of financing is the choice for civil-law applied countries, where courts have less flexibility in interpreting the laws and creating new rules. Whereas common-law courts enforce laws effectively, providing them with more detailed creditor and shareholder protection laws has a greater impact on the development of financial markets compared with civil-law systems. The findings were extended by the research of Beck and Levine (2002), which showed that the reliance on the bank-based or market-based capital system did not make much difference, while the efficient legal system and financial development improve industry growth, new establishment formation, and efficient capital allocation. Peterson (2003) found that there was no one “right” way to handle financing on the sample of sovereign bonds observed, while stressing that the local bond market was a more preferred way since the public monitoring and public disclosure required for efficient bond market operation was higher.



Most of the European economies including Germany are traditionally bank-based, where USA and Canada's markets are market-based (Levine, 2002). The role of banks is overemphasised in most of the European economies thus leaving bond markets as less developed. The financial crisis, which started in summer 2007 in the US as the first wave and continued in Europe in mid-2010 as the second wave, has revealed the scope of the bank influence on the economy (Zaghini, 2015). While starting on the bank and interbank level initially, the crisis through sovereign guarantees provided to the banks and *ECB* interventions, have shifted the risks on the whole economy: e.g. Latvia (European Commission (2012), Saksonova and Koleda (2017)). Rupeika-Apoga (2007) underlined the greater risk-sharing internationally through a broader array of financial instruments, an increasing share of cross-border holdings of assets and an increasing international profile of financial markets, market players and institutions, Rupeika-Apoga and Solovjova (2011) pointed to rising financial linkage of developing economies with the global economy while Rupeika-Apoga (2012) stressed the importance of international coordination, which did not help to minimise impact of financial crisis by keeping own countries in order.

While the academic studies prior to the financial crisis of 2008-2013 emphasised the cost-effectiveness and safety of bank-based financing due to higher monitoring and control function performed by the banking sector versus lower control from the investor society, the shift in the research paradigm could be observed in later studies with the effectiveness focus shifting towards the US-employed market-based system. Allen and Gale (2001) explained the shift by the failure of government interventions and over-stressed the effectiveness of the financial markets. The post-crisis academic research instead of traditional bank-based versus market-based division of financial systems concentrate on finding:

a) the relationship between the crisis effect and economic growth and the type of financial system. The research by Langfield and Pagano (2016) discovered that bank-based financial structures were associated with lower economic growth, particularly when real house prices dropped substantially. Bending et al. (2014) stated that while the banking crisis caused a similar initial drop in investment on both bank-based and market-based systems, the recovery was much slower in the bank-based economies. The latter was supported by Allard and Blavy (2011).

b) Quantitative easing (QE) effect and the financial system. QE, as performed by the Central Banks, increased the importance and activity of the capital markets. Duca et al. (2015) highlighted that issuance in emerging markets without QE would have been broadly half of the actual

issuance since 2009, where Steeley (2014) found that QE resulted in a substantial and statistically significant drop in the costs of trading UK gilts.

c) An alternative classification of the financial system of a country. While banking and market as the sources of financing are viewed as substitutes by the majority of academics, Hardie et al. (2013) have viewed market-based economy as the way to disseminate loans or market-based banking. The latter is characterised by four elements: 1) assets are valued at market price (“marked to market”); 2) bank lending is securitised or traded; 3) bank assets are sold to “shadow banks”; 4) assets retained on balance sheets are financed market sources. The shift in bank-based and market-based paradigm was observed by Sawyer (2014), where the banks were changing their role from “originate and retain” to “originate and distribute” with more involvement in the securities market.

While stressing the importance of the market-based economy, academic studies rarely provide solutions different from the ones already in focus of the *CMU*: increased regulation, securitisation, cheaper SME access to capital markets (Langfield and Pagano, 2016, Bending et al., 2014). The existing focus on capital market development should not shrink the importance of symbiosis of both banking sector and capital markets, where the financing for some groups of the potential borrowers such as small size companies can be limited by the scope, for new companies- limited by the absence of credit and cash flow history, etc. The presence of both banking sector and capital market is vital for the country. *CMU* seeks to develop a wide range of SME capital needs by the action plan introduced. While *European Commission* (2016) counts that SMEs make up to 99.8% of all *EU* enterprises, 57.4% of value added, and 66.8 % of the employment, the financing in the form of bank lending or alternative financing are available for SME to a dissimilar extent in different *EU* countries. The variation comes from the different combination of local financial market participants, the capital market development stage and financial literacy by both issuers and investors.

Capital markets and their corporate debt segment is one of the primary focus of *CMU* and a recognised means of borrowing by the European corporate. The existing academic and political papers provide a deep analysis of the present and potential problems SMEs need to overcome. Forsman (2008) has indicated the resource and knowledge limitations, lack of money, reliance on a small number of customers and need for multi-skilled employees.

Report by International Trade Centre and World Trade Organisation (2014) specified that size roots the challenges of the SMEs such as access to finance, trade finance, lack of institutional support, insufficient skilled personnel, disproportionately high trade costs, lack of access to technology, unfavourable business environment. *European Commission* (2015c) concentrated on overcoming SMEs structural problems such as a lack of management and technical skills, rigidities in labour markets and limited knowledge of opportunities for international expansion. All of the studies indicated access to finance as the potential SME development constraint. The main problems as defined by the SMEs are: finding customers, access to finance, availability of skilled staff or experienced managers, competition, costs of production or labour, regulation (*European Commission*, 2015c). *European Central Bank* (2016b) was indicating the shift from SME infrastructural problems such as SME financing to more natural business related struggle for customer and resources: finding customer and access to finance were the top concerns of SMEs in 2013, being replaced by finding customers and availability of skilled staff or experienced managers in 2015.

*European Commission* (2016a) pointed out that in 2009 the financing problem was second-most urgent for *EU* SMEs. While decreasing in its importance on the aggregated level, access to finance remains the dominant concern for SMEs in Greece. SMEs in Italy, Ireland and the Netherlands frequently name access to finance as the most important problem (*European Central Bank*, 2016b). Moreover, the importance of access to finance has the negative correlation with the size of the company- micro companies experience the most concern. The existing difference between the countries is present due to several reasons including the diversity of the traditions and development of financial markets i.e. the presence and effectiveness of operation of the local stock exchange, the presence of bond market, the presence of both reasonable issuer and investor side. *European Commission* (2016a) stressed substantial differences in financing conditions for SMEs between the Member States, which was in focus of the *CMU* introduced by the *European Commission* in 2015. (*European Commission* (2017a).

While Moritz et al. (2016) have underlined the lack of homogeneous financing structure of SMEs in Europe, the vast majority of academic research present in the area of SME financing concentrates on exploring the link between the banking sector and SME financing. Behr et al. (2015) have pointed that SMEs are credit-constrained and bank-dependent, which was challenged by high information asymmetries, agency risks, insufficient collateral and small transac-

tion volumes, which found to limit SMEs' access to finance by Moritz et al. (2016). Harel and Kaufmann (2016) have described the common obstacles in access to finance for SMEs as asymmetry of information and lack of data; a fear of moral hazard on the part of lenders; adverse selection; and lack of experience and sophistication on the part of small businesses in dealing with financial institutions. The study named asymmetry of information, lack of data, moral hazard and adverse selection as the main obstacles of traditional industries to access finance.

There is no standardised approach to SME financing since the number of instruments available as SME financing tools ranges from own financing to bank, capital markets and state financing. Moritz et al. (2016) distinguished six SME financing types: mixed-financed SMEs, state-subsidised SMEs, debt-financed SMEs, flexible-debt-financed SMEs, trade-financed SMEs and internally financed SMEs. Where the choice of the relevant instrument is based on the combination of various micro factors such as firm scope, age, and ownership, as well as the macro factors like macroeconomic and legal environments, the innovativeness of the industry. Even though SME financing is dependent on the needs of the company and instrument choice as made by the management, the existing financial sector development and established infrastructure could influence SME choice of financing mix.

On the *EU* level, both academic and politic papers (except country-level reports) seldom define Latvia as a separate country for analysis. The topic of SME segment is reasonably analysed by Latvian researchers with a little emphasis on SME financing. While Kotowska and Martyniuk (2016) pointed out that reasonable criteria for SME classification for micro, small and medium size were included in the Accounting Acts for Latvia, the study of Sceulovs and Gaile-Sarkane (2012) challenged SME definition and suggested its revision for small economies like in Latvia and other Baltic States, where dominating number of companies according to their size was small and micro. The need for measuring Latvian SME performance was in focus of Kotane and Kuzmina-Merlino (2017) and Kotane (2016), where Kotane and Kuzmina-Merlino (2017) identified lack of resources as the existing problem of Latvian SME segment. The lack of consequent taxation changes for the micro taxpayers in Latvia was identified by Sneidera and Bumane (2016), where 60.7% of all new SMEs applied for micro taxpayer status. Astrauskaite and Paskevicius (2014) indicated the factors that would seem to favour a larger role for corporate bond issuance in the financing of European companies: 1) weaker performance of banking sec-

tor; 2) struggling government bond sector; 3) economic education. The paper pointed that there is no particular reason to state the direct substitution effect between bond and banking market.

The fragility of the bank-based financing dominating in the *European Union* was tested and underlined by the financial crisis of 2008. *CMU* initiative of the *European Commission* is bringing into light the need and development of the alternative financing for SME segment. The study of Tocolovska (2017) has indicated the evident skewness of the research concentration on supporting the bank-based view on the European economy, where the minor shift towards more market-based view is stimulated by the consequences of the financial crisis of 2008. The focus of the *EC* towards *CMU* is accelerating the process.

While the traditional economic system division approach separates bank and market-based viewpoint, the Author supports the emerging acceptance of banking and financial market sectors as compliments in the corporate financing area. The Author detects banking sector development as the group of metrics affecting the corporate bond market development of a country.

#### **1.4. Recent development of *Capital Markets Union***

*CMU* introduction is scheduled as an action plan with short and medium term focus and ambition of regular revision and correction when needed. In 2015 *European Commission* created the *Capital Markets Union* initiative and plan as the next step for a more integrated Europe on the financial markets level. In the result, *CMU* will reinforce the third pillar of the Investment Plan for Europe, which will be beneficial for all Member States of the *European Union*. *CMU* action plan focuses on six main areas: 1) financing for innovation, start-ups and non-listed companies; 2) making it easier for companies to enter and raise capital on public markets; 3) investing for the long term, infrastructure, and sustainable investment; 4) fostering retail and institutional investment; 5) leveraging banking capacity to support the wider economy; and 6) facilitating cross-border investing (European Commission, 2015a).

The Green Paper (European Commission, 2015) summarised the early priorities of the *CMU* as 1) develop proposals to encourage high-quality securitisation and free up bank balance sheets to lend; 2) review the Prospectus Directive to make it easier for firms, particularly smaller ones, to raise funding and reach investors cross-border; 3) start work on improving the availability of credit information on SMEs so that it is easier for investors to invest in them; 4) work with the industry to put into place a pan European private placement regime to encourage direct in-

vestment into smaller businesses; and 5) support the take up of new European long-term investment funds to channel investment in infrastructure and other long-term projects. The scope of the *CMU* action plan on the money demand side includes a wide range of corporates from the start-up phase to large and stable government institutions. The role of the corporate bond market is stated as one of the key objectives. While Latvian corporate bond market is the biggest on the Baltic level, its perspective and area of development within *CMU* should be identified.

The academic research detects three main focus areas of the *CMU*: capital markets activation for SMEs (including market harmonisation), investor base diversification and cross-border investment. The study of Dixon (2014) while stressing the difference between banking union as Eurozone project and *CMU* as *European Union* project, echoed the *CMU* focus areas as the main benefits of the capital market union: helping to absorb shocks; providing finance for the economy; enabling more effective monetary policy and creating more competitive markets.

The Association for Financial Markets in Europe (2014) proposed to group the work program for *CMU* into three pillars: 1) issuance of capital market instruments (the supply side); 2) long-term investment in the capital markets (the demand side); and 3) infrastructure for capital markets issuance and trading. Deutsche Borse (2015) grouped the elements of the *CMU* into six core principles: 1) developing initiatives to revive investor trust; 2) improving availability of non-bank funding; 3) promoting financial stability; 4) increasing transparency for investors as well as supervisors; 5) fostering the harmonisation of rules and standards; 6) continuing to shape the supporting regulatory and supervisory environment. The study of Kenadjian (2015) provided a narrower focus on diversification of funding, decrease in capital market fragmentation and focus on private companies and infrastructure. Green Paper (which was further developed and presented by the *European Commission* (2015a) focused on securitisation, infrastructure finance and on providing financing alternatives to SMEs.

Aiming both SME and securitisation was underlined to be an unexpected combination by Kenadjian (2015) where SME was what everyone agreed on Europe did well in its economy, while securitisation was one of the causes of the financial crisis of 2008-2013. Schoenmaker (2016) criticised securitisation introduced as a copy of US practices: since Government Sponsored Enterprises in the US, known as *Fannie Mae* and *Freddie Mac*, repackaged over 70% of US mortgages and provided a substantial bust to the corporate bond market. As stressed by the research, despite the discussable sustainability of the securitisation done by Government Spon-

sored Enterprises in the US, Europe lacks similar practice but has a fragmented issuance of covered bonds based on German Pfandbrief model. Existing covered bond issuance model could be a more preferred one compared to securitisation since covered bonds could be used as collateral for central bank lending, get better capital treatment and a percentage of them can count towards the new liquidity requirement under Basel III.

Berg et al. (2015) argued that market harmonisation was not necessarily a prerequisite for developing the covered bond market in Europe; instead, countries with embryonic covered bond markets should study best practices and adapt those that fit. Schoenmaker (2016) pointed that the drawback of covered bonds was the need to be covered by a minimum amount of capital, making the issuance more expensive, which potentially could free up assets for securitisation. Alles (2001) showed that limitations in legal, accounting and taxation systems had negatively influenced securitisation in emerging economies. Berg et al. (2015) have supported the development of the covered bond market to allow banks to outsource risk without the help of central banks.

The action plan as presented by the *European Commission* is covering the 2015-2019 period. By 2019 the *CMU* should be fully functioning (European Commission (2015a)). The comparatively short period of what is described as a fundamental shift from the bank-based to more market-based economy is widely criticised by the academic studies. The study of Veron and Wolff (2015) stressed the long-term perspective of the *CMU*, which could not be a short-term cyclical instrument to replace subdued bank lending since financial ecosystems changed slowly. Skabic (2016) put the perspective of the increased capital mobility during the 1990s and 2000s, where the additional push factor was the *EU* enlargement to the countries of Central and Eastern Europe.

Despite the efforts already made for the increase in the capital mobility, the markets are still uneven in their development. Moreover, Acharya and Steffen (2016) have added that *CMU* with fully integrated capital markets across member countries could only work when the status of member country sovereign bonds as risk-free assets will be restored. Rusek (2015) argued that *CMU* alone was not enough and should be supported by substantive structural changes, especially in labour markets and taxation, to restore southern growth in the Mediterranean economies. The regulation framework, which is one of the key elements of *CMU* creation is in the process of

its development. Deutsche Borse (2015) stressed that significant progress had been made in terms of harmonising the regulation, still admitting that a lot of the focus has been post-crisis.

As a relatively young political initiative, *CMU* faces scepticism from both politicians and academics. Kenadjian (2015) stressed that the *Commission* only took office on November 1, 2014, and the *CMU* proposal was published comparatively quickly by the newly elected Commission President. Alexander (2015) and Connelly (2016) added the issue of the systematic risk as stimulated by shadow banks (non-bank credit providers), recommending regulatory controls to shadow banks. Dorn (2015) underlined that from four freedoms of movement of people, goods, services, and capital, the latter gets minimum public attention, where *CMU* remains the discussion between only financial market participants, lobbyists and *EU* legal specialists. Moreover, there exists a rather limited academic research present on *CMU* due to the novelty and vagueness of the issue. The additional information on the *CMU* is being introduced on a regular basis and could influence the existing perception of *CMU* as well as make considerable changes in the action plan implementation. The existing academic research in the area detects main *CMU* challenging areas which could be faced as a burden in the course of *CMU* action plan implementation and thus change the overall *CMU* result: existing market fragmentation; lack and complexity of unified accounting standards and standardisation of issues; and uneven taxation.

#### 1) market fragmentation

Market fragmentation is named as one of three main causes hindering capital mobility. Langfield and Pagano (2016) named main reasons for fragmentation to inhibit market operations: 1) it confers an advantage to informed investors, who have access to multiple exchanges, and therefore increases these investors' informational rents; 2) it implies that several prices are quoted simultaneously, increasing search costs; 3) it prevents investors from taking full advantage of the "thick market externalities" arising from the fact that each additional market participant increases liquidity for all other traders.

The lack of a united capital market created so far is based on the traditional geographical, legislative (including taxation) and language borders. While the geographical borders are physically removed to the major extent, the language and legislative (including taxation) differences are present. The data of the House of Lords, *European Union Committee* (2015) referred to, entrenched cultural norms, where retail investors in shares and bonds retreat behind their national frontiers, and 94% of European citizens shied away from buying a foreign financial prod-



uct. Kenadjian (2015) found the “home bias” on the part of investors (especially retail); large information asymmetries, including the difficulty to obtain information about the cross-border investment. Donald (2015) argued that *EU* Market in Financial Instruments Directive (MiFID) project further fragmented the market by disrupting both transparency and effective regulation.

While looking at the ways to address the existing capital market fragmentation Langfield and Pagano (2016) pointed that to reduce fragmentation of the equity markets and develop the issuance of equity, policymakers could address the current fragmentation of stock exchanges in Europe. Donald (2015) suggested the linkage of Shanghai-Hong Kong Stock Connect and the ASEAN Trading Link was the best model for linking securities exchanges. The research by Langfield and Pagano (2016) pointed that favouring the consolidation of Europe’s stock trading platforms was unlikely to be the best policy response to fragmentation where the model of US equity trading could be followed to link markets together so that trades for given security always occur at the best possible price. Micheler (2016) analysed the storage of securities as executed by custodians and stressed that it prevented investors from exercising voting rights and from claiming against issuers, exposed investors to the risk of shortfalls; thus the law reforms would unlikely help. The paper suggested that investors should receive information about the identity of all sub-custodians that operated between them and the issuer, and about their terms. Unified capital markets would stimulate the cross-border flow of funds in Europe and thus activate and to a major extent create the European securities market.

## 2) unified accounting standards and standardisation of issuance

To make the cross-border investment possible the information about the securities (financial statements of the companies, issue documentation) should be comprehensible by the potential investors. While the accounting standards are specific to a country, the European Commission (2015a) recommended developing a voluntary tailor-made accounting solution in the cooperation with the International Accounting Standards Board (IASB). The latter was criticised by Kenadjian (2015) stating that “junior International Financial Reporting Standards (IFRS)” for SMEs would be counter-productive as it would involve the cost of preparing the second set of financial statements, which would be not enough when the company would decide to go public on a regular stock exchange, thus requiring a second conversion.

Veron and Wolff (2015) stressed the need for IFRS application as well as taxation unification importance since the taxation framework was moving investment flows towards one or

another instrument. Standardisation of corporate bond issuance was pointed by Langfield and Pagano (2016) for parameters such as coupons and maturities, thus reopening the existing issues and making the issues deeper in liquidity and saving underwriting fees for issuers- a barrier many SMEs faced. Standardisation will have a positive impact on comparability thus stimulating the cross-border investment.

### 3) taxation

Taxation stimulates the mobility of the capital flows on both investor and issuer side. Laeven (2014) indicated that tax reforms that make the tax treatment of securities issuance and investment more attractive to issuers and investors could increase market size by increasing the supply and demand for securities. Kenadjian (2015) pointed that under *EU* rules changes in *EU* taxation measures required the agreement of all 28 Member States, insisting that this change could be seen as equivalent to finding the greatest possible obstacle and declaring it to be essential to the project. The study made an example of failed financial transactions tax proposed by the *Commission* in September 2011. Financial transactions tax was pointed out by Veron and Wolff (2015) as the bad example, stating there was another route to tax changes within the EU, based on the enhanced cooperation procedure, which allowed member states to agree among themselves and only for themselves on an approach to taxation.

There is no homogeneous treatment of taxation unification practices among the authors. Moreover, several studies stressed the importance of the local authorities to interpret the regulation in the guided direction. Dixon (2014) argued that regulating authorities should be kept on the local level, the practical application of the capital market related substantial regulation should be shifted to a more pro-European control in order to skip application of the same regulation in a different way in different countries thus again stimulating the uneven development of *CMU*. Skabic (2016) stressed the difficulties to promote reforms and implement them properly. The unification of taxation practices has very diverse treatment by the academic studies, while all the studies agree on the resilient challenges present.

## 1.5. Existing research gap

In the result of the analysis of the corporate bond market development, its determinants and staging as analysed by the academic research, the Author has discovered various outstanding gaps. In order to complete the existing research gap, the research structure is developed and im-

plemented (Figure 1). The conceptual model of the research represents the elements and interrelation of the theoretical, analytical and practical parts of the research.

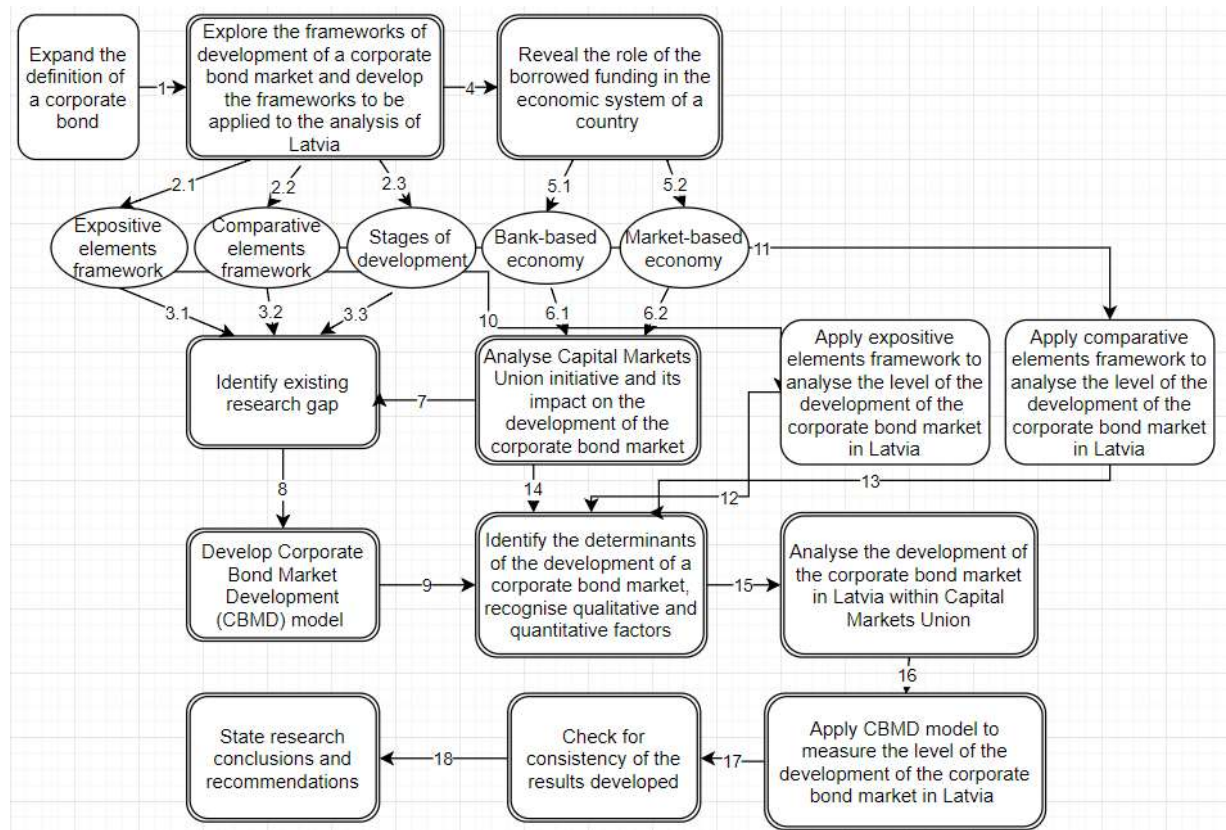


Figure 1. Conceptual model of the research

Source: Author's construction.

The Author has discovered the following gaps:

1. There is no unified and explicit corporate bond definition incorporating the ongoing changes in both financial markets and *EU* regulations;
2. There is no unified framework for measuring the development of the corporate bond market and its determinants;
3. The majority of the academic studies outstanding in their attempts to evaluate the development of the corporate bond market of a country rely on the application of the expositive elements frameworks, which lack comparative aspect. The existing studies, which provide comparative elements framework for measuring the development of the corporate bond market predominantly copy Financial Sector Development Indicators framework but are not trying to further develop and apply it;

4. Expositive and comparative elements frameworks and staging frameworks have not been applied to reveal the development of the corporate bond market in Latvia. The comparative elements frameworks miss the reasonable country sample for Latvia;
5. The academic research on *CMU* introduction is scarce, findings are controversial, where the most recent developments in the *Capital Markets Union* initiative of the *European Commission* are not included;
6. There is the scarce academic analysis of *CMU* action plan application to Latvia and further development of the corporate bond market segment;
7. There are no academic analyses measuring the development of the corporate bond market in Latvia and its determinants.

The Author sets an ambition to complete the existing research gap. The corporate bond market in Latvia is underexplored by the existing academic research thus the Author has the determination to provide the first analysis of the development of the corporate bond market in Latvia, its determinants and staging.

## **2. Analysis of the development of the corporate bond market in Latvia**

The theoretical study on the analysis of the development of the corporate bond market has detected three types of the frameworks as provided by the academics: the expositive and comparative elements frameworks and staging framework. The expositive elements frameworks provide the dimensions for the qualitative assessment of the corporate bond market in a country and detect the factors influencing the development. The comparative elements frameworks provide the numeric metrics for measuring the relative development of the corporate bond market in a country, thus enabling the comparison between the countries. The staging frameworks provide the metrics for evaluation of the stage of development of the corporate bond market in a country. The analytical part of the research applies expositive and comparative elements frameworks as selected, studied and further developed by the Author in the theoretical part of this thesis to analyse the corporate bond market in Latvia. The Author will incorporate the staging framework into the Corporate Bond Market Development model and apply to Latvia in part 3 of this research.

### **2.1. Expositive elements framework**

The expositive elements frameworks provide the dimensions for assessment of the current situation of the corporate bond market, where the number of studies reveals one or several main factors as influencing the development of the corporate bond market based on the qualitative or statistical analysis made. While the analysis of the expositive elements frameworks as explored and developed by the academics indicates four main groups of the corporate bond market indicators as determined to be influencing the development of the corporate bond market: size, macroeconomic indicators, legal factors (including market regulations and taxation), and presence of the securities market infrastructure; the Author groups the factors into two main clusters: measurement elements of the bond market and legal and macroeconomic elements (Table 1). The measurement elements of the bond market are the size of the bond market (sovereign and corporate, local and international segments), secondary market turnover and transactions of the corporate bond market, maturity structure of government bonds (including presence of a benchmark yield curve), investor and issuer base of the corporate bond market, market infrastructure (including cross-country electronic connection, information and communication technologies,

presence of the credit rating agencies, efficient ‘REPO’ market, active market makers (dealers)) of the corporate bond market, and stock market development (Tocelovska, 2016a). The legal and macroeconomic elements include qualitative assessment of the legal and regulatory framework (including information disclosure, primary issuance method), lending to SME segment, foreign ownership of the banks, tax treatment of bonds, macroeconomic factors: country size, growth rates, global cyclical factors, openness of the economy, stable exchange rate, interest rate volatility; internationally recognised accounting standards. Both element clusters will be applied to analyse the corporate bond market in Latvia.

### 2.1.1. Measurement elements of the bond market

Measurement elements introduce the evaluation of the scope and activity in the bond market on its size, secondary market turnover, maturity structure of the bonds, demand by the investors and supply by the investors, market infrastructure and stock market development.

#### 1) size of the bond market (sovereign and corporate, local and international segment)

Latvian bond market is represented by two types of bonds: sovereign bonds (both domestic and international) and corporate bonds. Even though the gap between the amounts outstanding of domestic and corporate bond segments is shrinking, the substantial domination of the sovereign segment as 89% of all the issues outstanding is present (Figure 2) (Nasdaq Baltic, 2018, State Treasury of the Republic of Latvia, 2018).

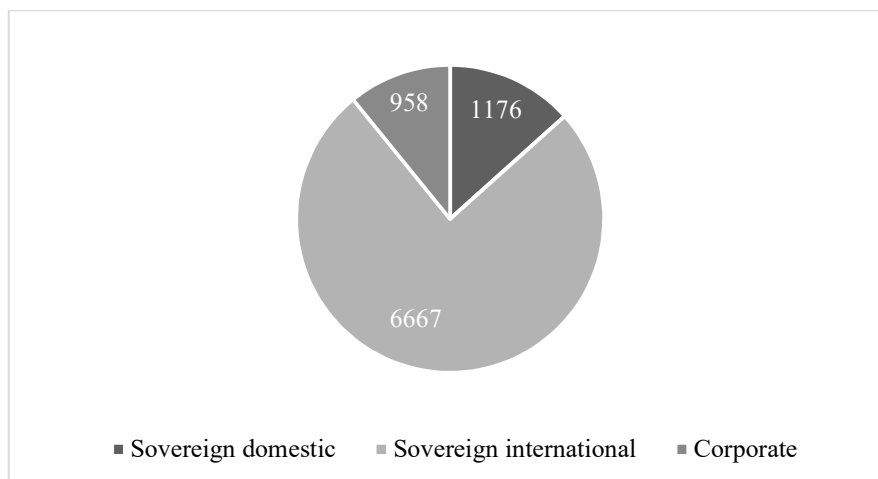


Figure 2. **Latvian bond market: the issues outstanding in Nasdaq Baltic, 2018 (million EUR)**  
 Source: Author’s calculations based on Nasdaq Baltic (2018) and State Treasury of the Republic of Latvia (2018) data.

The State Treasury of the Republic of Latvia is the main issuer present in the bond market in Latvia. The presence and regular activity of the sovereign issuer were found to be positive-

ly affecting the corporate bond segment by the study of Dittmar and Yuan (2008), where the researchers determined that sovereign bond segment acted as the benchmark for the corporate bond market and stimulated its development. Contrary to Dittmar and Yuan (2008), the research by Eichengreen and Leungnareumitchai (2004) found little interconnection between corporate and sovereign segments.

In 2017 the size of the corporate bond market in Latvia was EUR 958 million, from which EUR 780 million were issues done by the financial sector issuers and EUR 178 million by the non-financial sector companies. The number of the corporate bonds outstanding has been fluctuating substantially between 2008 and 2017, where the number of public issues was decreasing in the crisis period reaching the minimum of 2 issues listed on *Nasdaq Baltic* in 2012. The number of the public issues outstanding started to rise in 2012 and reached 59 issues in 2016 (Nasdaq Baltic, 2018) (Table 6). The increase in the number of the public issues was driven by the financial sector issues. Additionally, the sovereign bond market has started the active development in 2011 thus creating the benchmark for the corporate segment (Nasdaq Baltic, 2018).

**Table 6. Latvian corporate bond market: the issues outstanding on *Nasdaq Baltic*, 2008-2017**

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Number of public corporate bond issues	25	23	16	12	2	16	23	33	59	38

*Source: Author's calculations based on Nasdaq Baltic data (2018).*

Traditionally Latvia had a weak public bond segment- active public debt borrowing practices were not established by the country thus meeting the challenges of the financial crisis in 2008 when the government of the Republic of Latvia had a relatively limited capacity to borrow locally. In order to change the situation and attract the investors to the domestic bond market, the Treasury of the Republic of Latvia started issuing short-term and high-yield bonds. The number of new issues with the maturity less than 1 year picked in 2009. After the austerity funding from the *International Monetary Fund (IMF)* and *EC* was agreed in December 2008, the country gradually was getting back its confidence in the eyes of the investors. As a result, in 2010 the Treasury of the Republic of Latvia managed to attract longer- term public debt from the domestic market, with maturities reaching 10 years in 2011 (Latvian Central Depository, 2015). Only when the investor loyalty in the domestic market was established, the Treasury was ready to come to the international market- the government of the Republic of Latvia returned to the Euro-bond market in June 2011 borrowing 500 million USD for 10 years. The bid/cover ratio reached

700% indicating the investors' demand for at least 3 billion USD more, which was the potential for the future borrowing. The State Treasury of the Republic of Latvia has stepped into the international market almost every year since 2012 besides to forming the issue schedule in the domestic market (Bloomberg, 2015). In 2013 the Primary dealer system was introduced with the aim to stimulate activity and development of the sovereign debt securities market: new borrowing instruments, broadening of investor base, more active, liquid and attractive securities market for investors, as well as to reduce risks associated with servicing government debt (Treasury of the Republic of Latvia, 2015).

## 2) secondary market activity

Liquidity factor affects the pricing of bonds both in the primary and secondary market. The proxy of the liquidity risk is measured by the activity of the bond in the secondary market or daily buy/sell deal statistics of the bonds. The secondary market activity of the bond segment lacks the transparency since most of the buy/sell transactions take place over-the-counter or outside of the regulated market. In Latvia, all locally issued bonds should be registered in *Latvian Central Depository*, while no requirement about being listed in *Nasdaq Baltic* is present (Latvian Central Depository, 2015). Comparison of the total number of the bonds outstanding and the number of the bonds listed on *Nasdaq Baltic* reveals that only 2 out of 45 bonds or 4% are not listed in *Nasdaq Baltic* (Nasdaq Baltic, 2016). The secondary market activity of the corporate bond market in Latvia is analysed for the bonds listed on *Nasdaq Baltic* indicating the positive trend in the segment (Table 7).

**Table 7. Latvian corporate bond market: secondary market activity on *Nasdaq Baltic*, 2008-2017**

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Secondary market turnover (EUR, million)	1.49	2.72	1.32	1.32	32.7	97.9	141.5	139.7	153.2	206.9
Number of deals	98	114	19	8	151	239	377	578	832	795

*Source: Author's calculations based on Nasdaq Baltic data (2018).*

The average annual secondary market liquidity in *Nasdaq Baltic Bond List* has reached EUR 1.71 million during years 2008-2011 afterward increasing to EUR 147.84 million. The rise in the activity of the financial sector issuers has influenced the activity in the secondary market - 99% of the secondary market activity in 2012 came from the buy/sell transactions with financial sector issues. The similar pattern was observed in the period 2012-2017 where the activity of the



financial sector issuers formed the core of the activity in the secondary market activity of the corporate debt segment in Latvia (Nasdaq Baltic, 2018).

### 3) *maturity structure of sovereign debt (including presence of a benchmark yield curve)*

A maturity structure of the debt outstanding in a country is an important indicator of the perception of the credit risk and interest rate structure by investors. A maturity structure of the sovereign bond segment is formed by both the needs of the Republic of Latvia to finance its debt and budget needs, as well as the recommendations about the investor needs, provided by the Primary Dealers to the State Treasury of Latvia. A maturity structure of the corporate bond market is formed by the financing needs of the issuers and the investment interest and needs by the investors.

The maturity curve for the corporate bond market in Latvia exists for every year in the period from 2016 through 2025 thus indicating the presence of the benchmark curve for all types of maturity. The further analysis of the accumulated amounts of the corporate bonds outstanding along the maturity curve in Latvia reveals that while more extended maturity issues are present in the market, the majority of the issues both from the absolute size amount (EUR 398 million) and the number of issues outstanding (14 issues) are present in the up to 2 years to maturity segment (Figure 3) (Nasdaq Baltic, 2016).

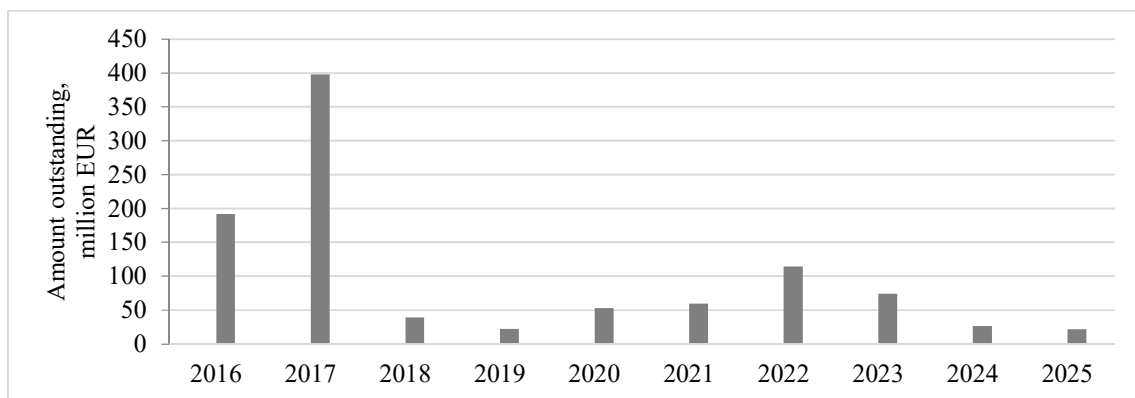


Figure 3. **Maturity structure of Latvian corporate bond market, 2016 (EUR)**

Source: Author's calculations based on Bloomberg data (2016).

### 4) *investor and issuer base of the corporate bond market*

The importance of the developed investor base is stressed in the study of Borensztein et al. (2008). The research by Braun and Briones (2006) highlighted the importance of two factors for the development of the corporate bond market: presence of institutional investors and openness of foreign investors for the investment in the local market. Wyman (2015) explored the de-

velopment of the investor base in relation to the development of the corporate bonds in a country. During the development process divided into five stages, Wyman has found the group of the investors growing from foreign investors, banks, domestic institutional investors in stage 1 to foreign investors, banks, institutional investors, retail investors, alternative investors in stage 5. The study revealed the importance of the retail and alternative investors as the sign of the development of the corporate bond segment. Saksonova and Orlova (2013) underlined the scarce long-term savings both in the form of bank deposits and investment assets in Latvian market due to various factors including low levels of financial literacy, disposable income, and the demographic situation.

Traditionally Latvian corporate bond market was characterised by one focal investor type present in the market- pension funds. The main reason of the activity of the pension fund managers in Latvia was based on the constantly raising funds of the second pillar pension capital, which needed to be invested, accompanied by the high level of the understanding of local risks and comparatively high investment returns as compared to the Eurozone bonds. Total second pillar pension capital has reached EUR 2.34 billion on 17 February 2016 (Manapensija, 2016). Still, the current investor base of the corporate bonds issued in Latvia has its costs- according to Borensztein et al. (2008) the pension funds and insurance companies follow a buy-and-hold strategy- thus resulting in another problem - lack of liquidity where it is difficult to increase or close the open position in securities without being noticed. Non-transparent nature of the over-the-counter market and the lack of liquidity form the buy-and-hold rather than active speculating strategy of the investors. Those factors negatively affect the demand for corporate bonds by increasing the liquidity spread in the primary market and increasing the bid-ask spread in the secondary market. Excessive premiums act as the compensation for the inconvenience and potential liquidity troubles. Still, the analysis of the recent corporate bond issues of the non-financial segment indicates the changes in the situation.

On 10 June 2015 *Latvenergo AS* issued seven-year long green bonds in the total nominal value of EUR 75 million maturing on 10 June 2022. The issue attracted various types of investors: banks (including retail) 71%, asset managers 28%, and insurance 1%. Moreover, only 54% of the issue was placed in Latvia while 18% in Estonia, 11% in Lithuania, 15% in Germany, 1% in Austria and 1% in Finland (Latvenergo, 2016). The diverse investor interest indicates the presence of the developed investor base in the corporate bond segment in Latvia. The challeng-

ing topic is to explore the weight of the retail investors in the bank investor segment. The issuer base in Latvian corporate bond market is represented by 43 public bond issues. While the number of issues has more than doubled in the last 5 years, the presence of 74% of all the issued done by the banking sector indicates the skewness to the financial sector issuers (Nasdaq Baltic, 2016). Latvian corporate bond market shows the signs of expansion of the non-financial corporate bond issuers, where the segment has 21% weight from all the corporate bond issues outstanding, from which 95% is represented by one issuer- *Latvenergo AS* (Nasdaq Baltic, 2016). The study reveals the importance of adding medium–large corporate issuers for the further development of the corporate bond market.

*5) market infrastructure (including cross-country electronic connection, information and communication technologies, presence of the credit rating agencies, efficient ‘REPO’ market, active market makers (dealers)) of the corporate bond market*

The corporate bond market infrastructure as represented by the securities exchange, securities depository, and securities brokers is present and developed in Latvia. The stock exchange providing securities trading in Latvia was founded in 1993 by four Latvian commercial banks in 1994 selecting the suitable trading model, based on the platform offered by the *Paris Stock Exchange* and the *Central Depository of France*. The continuous daily trading of the securities by the brokers using the remote trading terminals has been taking place in Latvia since 1997. The focus on the bond trading segment can be detected to take place since 1999 with the introduction of *ACCEPT* facility. The primary market deals for the government bond trading segment have been launched in 2005. The further acquisition of the local securities exchange was by *HEX Group* in 2002, followed by the merger with *OM Group* in 2003, and finally joining the world’s largest exchange company, *NASDAQ OMX Group, Inc.* in 2008 (Nasdaq Baltic (2017b)).

The securities depository (*Latvian Central Depository*) was fully acquired by *Riga Stock Exchange* in 2002 and became part of the group. The depository is the participant of the *TARGET2-Securities*, which is the legal framework between the *Eurosystem* and each of the central depositories who join it, and IT platform for securities settlement that facilitates financial market stability and increases post-trade transparency (Nasdaq Baltic (2017b)).

While trading of securities in *Nasdaq Baltic* securities exchange is taking place using the same system infrastructure as the rest of the Baltic and Nordic markets in the group and settlement includes *TARGET2-Securities* infrastructure of the *European Union*, the market infrastruc-

ture as including exchange, depository systems and processes can be assessed as developed. There are no credit rating agencies, existing REPO market and market makers for the corporate bonds to the knowledge of the Author.

6) *stock market development*

While the trading of stocks in Estonia became popular already in 1994-1995, not until 1997, the stock trading became popular in Latvia (Pelane and Ukenable, 2008). The stock trading has been developing rapidly reaching EUR 218.85 million in annual turnover in 2000 and then gradually decreasing below EUR 50 million starting from 2008. (Figure 4).

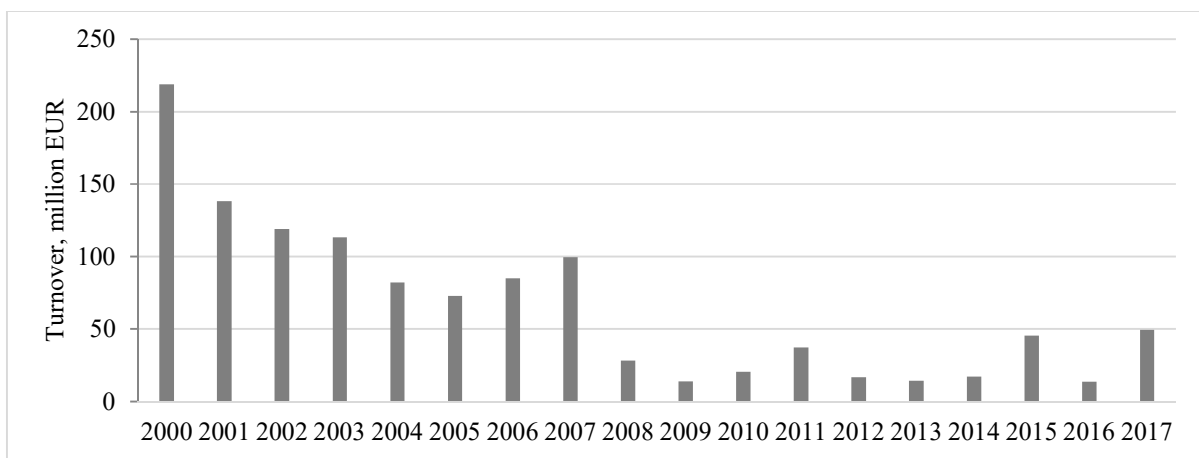


Figure 4. **Latvian stock market: the turnover, 2000-2017 (million EUR)**

Source: Author's calculations based on Nasdaq data (2018).

Whilst the stock turnover has been decreasing, the number of the deals made by investors has been relatively stable- the average level in the period 2010-2017 is 18926 shares (Figure 5).

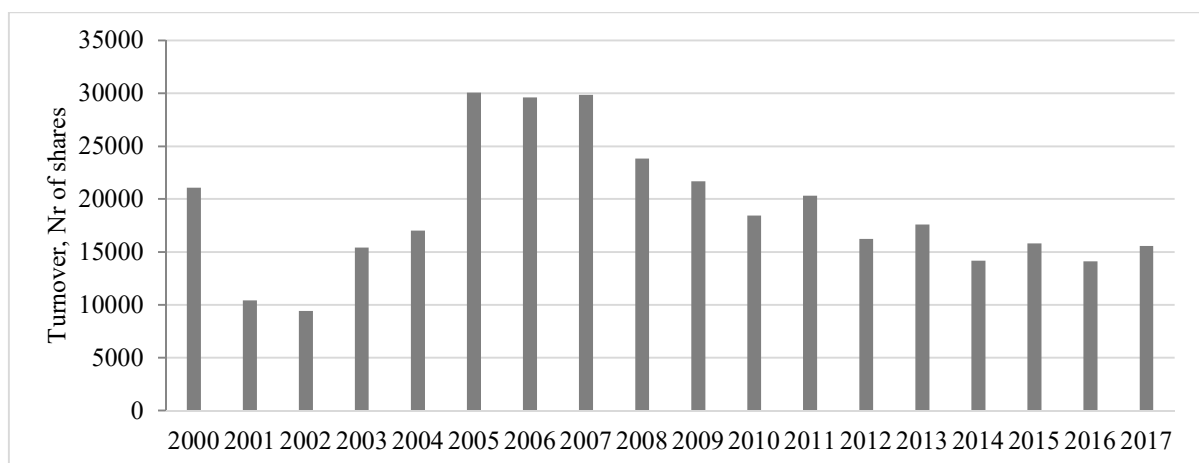


Figure 5. **Latvian stock market: the turnover, 2000-2017 (number of shares)**

Source: Author's calculations based on Nasdaq data (2018).

The trend in the decreasing number of shares per deal (10391 shares in 2010 falling to 3172 shares in 2017) could be treated as one of the signs of wider retail segment involvement into the stock trading process. Still, the latter is difficult to prove due to the anonymous base of the securities trading in Latvia.

The analysis of the measurements of the bond market indicates that the size of the bond market and its forming sovereign segment is increasing (the amount of the total bond amount outstanding has increased from USD 738 million in 2010 to USD 10.634 billion in 2017 (Bank for International Settlement, 2018)). The sovereign segment in Latvia has been underdeveloped before the financial crisis in 2008- the need for the intensive public borrowing has not been faced by the country. Starting from 2009 the boost for the sovereign segment has taken place and is gradually increased by the State Treasury of Latvia. The actions further stimulating the development of the sovereign bond market were: the introduction of the Primary dealer system, the establishment of both domestic and international benchmark curve. The dynamics of the number of the corporate bonds outstanding is positive, where the steady growth has taken place since 2011.

The analysis of the measurement elements of the bond market and its corporate segment in Latvia indicates that its secondary market activity is relatively non-transparent due to the OTC nature of the market; still both indicators: the number of deals and the amount of the turnover in *Nasdaq Riga*; have positive dynamics. The investor side is dominated by the professional investors, where the retail saving traditions are rather underdeveloped. The growing pension fund base is further growing the domination of the professional investors (pension fund managing companies), which has the theoretical cost of low liquidity in the market due to the buy-and-hold strategy supplementary augmenting OTC market related low liquidity problems. The geography of the institutional investors is well-established while the data on the retail sector activity is not present. The issuers' base is relatively developed skewed to the financial sector issuers of the corporate bonds. The need for the increasing medium-large corporate issuers is detected for the further development of the corporate bond in Latvia. Market infrastructure is present and highly developed- being the member of *Nasdaq Group*, the stock exchange and securities depository in Latvia share the trading infrastructure present in *Nasdaq Group* (the latter also is the participant of *TARGET2-Securities* framework). There is no credit rating agency existing REPO market and market makers base for the corporate bonds for the knowledge of the Author. The stock market

development indicates the potential increasing number of the retail investors- while the turnover is declining, the number of deals is remaining comparatively stable.

### **2.1.2. Legal and macroeconomic elements**

Legal and macroeconomic elements introduce the qualitative evaluation of the legal system and regulations of a country, lending to SMEs, taxation system, accounting standards as well as the broader view on the macroeconomic factors.

*1) qualitative assessment of the legal and regulatory framework (including information disclosure, primary issuance method)*

The regulation of the bond market can be observed from two perspectives: regulation based on the origin of the market: primary and secondary; regulation based on the origin of the market participant: issuer of bonds, intermediary, investor. Even though the regulatory base of the bond market in Latvia is sizable and thorough, it remains more complicated and less understood than the regulation of the bank lending. Banks are closely monitored by the Financial and Capital Market Commission and have the long history of the regular audit of the financial statement reporting (the financial reports are prepared in accordance with the International Financial Reporting Standards) as well as internal audit, which is not the case for the potential and some of the existing bond issuers. The legislative framework as applied to securities market segments in Latvia is:

- Civil Law- the general regulatory framework for contractual regulation;
- Law on the Financial Instruments- the framework for the operation of the financial instrument market activity by stimulating: stability of the financial market and its trustworthy, security of investors' interest, equal information availability on the instruments to all the market participants;
- Commercial Law- the framework of the capital and debt structure of a company;
- Law on the Protection of Investors- the framework for the actions of investors upon the inability of the intermediary to fulfill its contractual obligations;
- Terms and conditions of *Financial and Capital Market Commission*;
- Terms and conditions of *Nasdaq Baltic*;
- Terms and conditions of *Latvian Central Depository* (Tocelovska, 2016a).

The primary issuance, information disclosure and legal regulation of the bond issuing and trading process can be described in three steps:

1) prospectus of the bond issue is prepared in accordance with the Commercial Law and the Law on the Financial Instruments. The prospectus should include the terms and conditions of the debt: amount borrowed, interest payment amount and regularity, duration of the debt, covenants of the issue, financial information of the issuer, an audit of the financial statements, description of the issuer and its areas of operation.

2) The prospectus is submitted to Financial and Capital Market Commission (FCMC), which controls the fulfillment of the regulatory norms. Only when the prospectus gets the approval from FCMC, the issue can be placed with the investors.

3) The new issue is registered in the depositary in accordance with Terms and conditions of *Latvian Central Depositary* and listed on *Nasdaq Baltic* Baltic Bond List (Tocelovska, 2016a).

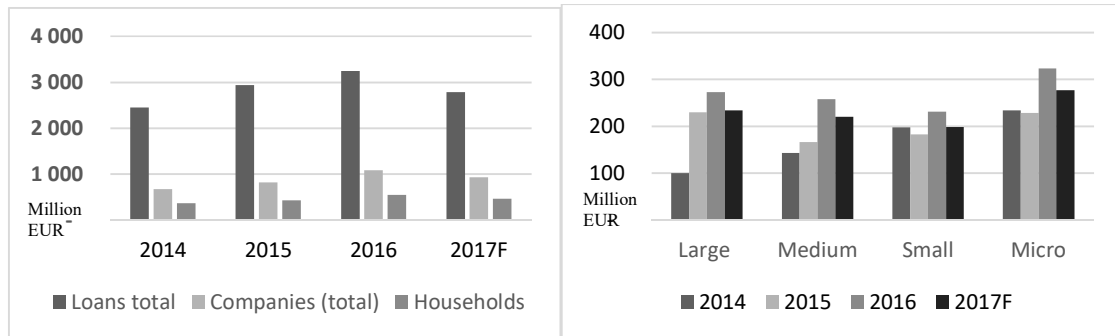
The regulatory framework of the bond market in Latvia is rather broad and covers all the important areas of interests. Still, in the comparatively young securities market and actively developing bond segment, the legal framework is rarely employed. While the growing legal framework as introduced on the *EU* level is increasing the number of legal specialists in the area and is combined with the strong growth in the interest from the potential issuers, the corporate bond market is facing just positive development environment where the legal framework is rarely employed in the court cases. The latter makes the evaluation of the legal framework of the corporate bond market in Latvia not thorough from the practical perspective.

The role of the regulator in the debt market in Latvia is done by Financial and Capital Market Commission. From the market participants' point of view, the role of the Financial and Capital Market Commission is to provide the guidelines for the processes taking place in the securities market: interpretation of the law, terms and conditions, MiFID regulation. So that the regulator is both the supervisor and the assistant for the market participants to interpret legal regulation in the most applicable to the market and business environment way still being compliant with the legislative framework. FCMC is effective in covering its functions of controlling market participants and supporting the investors when needed by investigating the precedents.

## *2) lending to SME segment, foreign ownership of the banks*

The analysis of the financing sector in Latvia with its positive loan issuance statistics (the absence of rejected loan application) contradicts the findings of Hasan et al. (2014), where the increasing number of foreign banks in a country stimulates the vulnerability of the SME segment by lending less. The share of foreign paid-up capital in the Latvian banking sector is 82% in Q1

2017 with more than half of it originating from Sweden (Financial and Capital Market Commission, 2017a). The dynamics prove the previous findings of Popov and Udell (2012) about 4/5 of the assets of the eastern European banking being controlled by foreign banks.



**Figure 6. Newly granted loans in Latvia, 2014-2017F (million EUR)**

Source: Author's constructed based on Financial and Capital Market Commission (2017) data.

The dynamics of newly granted loans in Latvia indicates growth in the period 2014-2016, where the forecasted numbers for 2017 (based on 2017 Q1 results) indicate the expected downside of lending on all levels (Figure 6). Micro companies remain the main type of corporate borrowers, where the amounts borrowed are evenly spread between four types of the companies.

### 3) tax treatment of bonds

Tax regulation defines the propensity to issue and invest in the corporate bond market by the issuers and investors respectively. In Latvia, two laws regulate the tax payments related to bonds: On Enterprise Income Tax (EIT) and On Personal Income Tax (PIT). From the investors' point of view, the taxation in Latvia is stimulating the development of both sovereign (PIT) and corporate bond (EIT) segments. Law On Personal Income Tax makes a tax-exempt interest payment on the government and municipal bonds of *European Union* (EU) and *Organisation for Economic Co-operation and Development* (OECD) countries- the coupon payments on those bonds are not subject to taxation. Bank deposits in Latvia, which are the perfect substitute for the government bonds are subject to 10% tax. Other government bonds and all corporate bonds are subject to 10% tax on regular coupon payments. Taxation rate for the capital gains for any type of securities is 15% (On Personal Income Tax, 2015). Coupon payment is a tax-deductible expense for corporate bond issuers, which decreases the amount of EIT thus indirectly supporting the issue of corporate bonds by a company (On Enterprise Income Tax, 2017).



The administrative process for tax payment, when complicated, can act as a discouraging factor for the investors. Tax payment on bank deposits in Latvia is simplified for the investors-banks act as intermediaries in tax administration and investors receive net interest on the deposit. A bond investor needs to know tax administration process, be aware of the changes in the taxation and tax administration made, and pay the interest him/herself by physically coming to the Tax authorities or using Electronic Declaration System as provided by the *State Revenue Service*. In the situation where the bond market started its development in 1993, and the most significant changes in the tax regulation were made in 2010, besides to the absence of simplified electronic tax administration system and expertise accumulated on the subject, the tax administration can be viewed as a hurdle for the development of the corporate bond market.

#### *4) internationally recognised accounting standards*

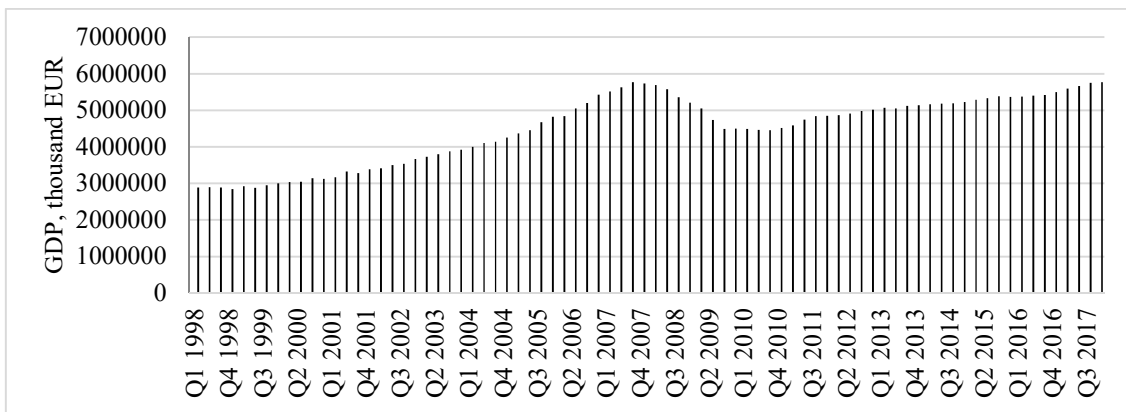
The accounting information as reported by the company providing economic activity in Latvia is regulated by the Law On Accounting where the Law On the Annual Financial Statements and Consolidated Financial Statements is providing the regulation for preparation of the financial statements. (Law On Accounting, 2018; Law On the Annual Financial Statements and Consolidated Financial Statements, 2018).

While the Law On the Annual Financial Statements and Consolidated Financial Statements is not prohibiting to use of IFRS as the basis for financial statement preparation, the company (except the ones mentioned in the Law) should also prepare the financial statements under Latvian legislation. A State capital company and the parent undertaking of a group of companies may prepare the financial statements under IFRS. Kotowska and Martyniuk (2016) summarise that SMEs in the countries observed by the research (including Latvia) prepare the financial statements in accordance with the national accounting acts.

The study of Strouhal et al. (2011) has identified that there are 77% of similarities when comparing Latvian legislation versus IFRS, where the measurement and recognition principles in Latvian accounting practices are based on IFRS and are their simplified summary. Moreover, both Strouhal et al. (2011) and PWC (2018) indicated that IFRS regulated the practices, which were not described and regulated by the local legislation thus increasing the influence of IFRS.

*5) macroeconomic factors: country size, growth rates, global cyclical factors, openness of the economy, stable exchange rate, interest rate volatility*

The dynamics of the gross domestic product (GDP) (total, constant prices, calendar adjusted) indicates the positive slope of the size and growth dynamics (Figure 7). The financial crisis 2008-2013 has affected the GDP dynamics of Latvia, where in 2017 the pre-crisis quarterly numbers of gross domestic product have been reached.



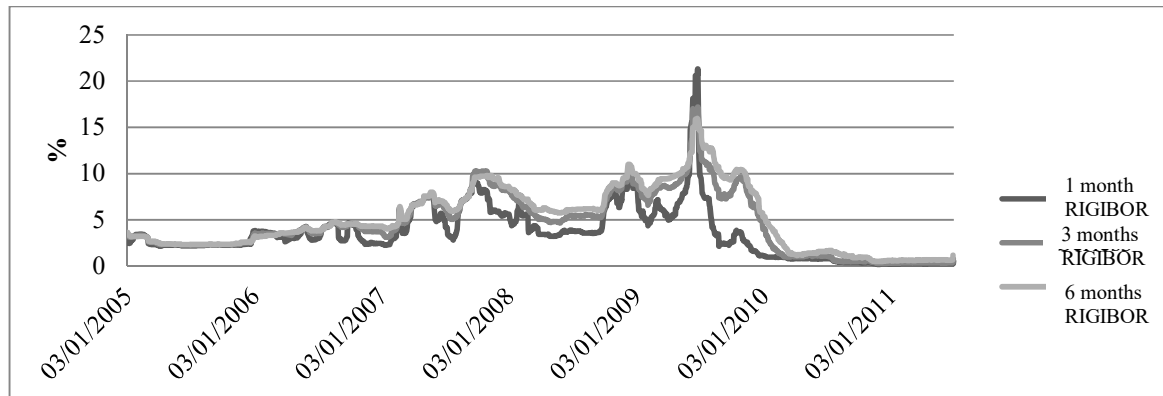
**Figure 7. GDP in Latvia, quarterly, 1998-2017, thousand EUR**

*Source: Author's constructed based on Reuters (2018) data.*

In their research Borensztein et al. (2008) pointed out that a healthy corporate bond market is unlikely to develop in a volatile macroeconomic environment, which the study characterised by volatile inflation and interest rates. The researchers stressed that low inflation and stable interest rates were key factors for stable and predictable macroeconomic environment. Between 2006 and 2009 Latvia experienced a very turbulent macroeconomic environment sharing the leading positions among *EU* economies as the top growth country or the top falling country. A very high economic growth rate in 2006-2008 was followed by the same sharp decline. The latter can be partially explained by the lack of fiscal prudence- a pro-cyclical fiscal policy made the country to operate with a limited budget surplus even in the years of its abnormal growth.

Excessive government spendings fuelled already existing salary driven inflation, which resulted in the inflation spiral. The lack of fiscal prudence from the government influenced the interest rate market, which had experienced high volatility in the period 2007-2010 and rocketed over 15% in June 2009 (Figure 8). Since preparing to join and joining the Eurozone area in 2014, Latvia has had a stable macroeconomic environment in line with other 27 member states (European Union, 2016). The stability of the macroeconomic environment and the lack of exchange rate risks have provided the positive environment for the development of the corporate bond market in Latvia. Moreover, the presence of euro currency and high level of integration into the

*EU* economy shapes the openness of the economy and global cyclical factors in a similar manner to *EU* countries.



**Figure 8. Dynamics of RIGIBOR, 2005-2011 (%)**

*Source: Author's calculations based on Bloomberg data.*

The analysis of the legal and macroeconomic elements of the bond market and its corporate segment in Latvia indicates that the regulatory framework is rather broad and covers all the important areas of interests. Still, in the comparatively young securities market and actively developing bond segment, the legal framework is rarely employed. This makes the use of the legal framework rather challenging as the competence in the practical application of the legal framework is still growing. The role of the regulator in the debt market in Latvia is done by Financial and Capital Market Commission. FCMC is effective in covering its functions of controlling market participants and supporting the investors when needed by investigating the precedents. The lending in Latvia is provided via bank loans to the major extent, where the share of foreign paid-up capital in Latvian banking sector is 82% indicating to the substantial foreign ownership. The dynamics of newly granted loans in Latvia is positive. Tax regulation in Latvia is assessed by the Author as favourable for both issuers and investors, where the tax administration process for the retail investors is still lacking the simplicity for the non-professional users. The accounting legislation present in Latvia to the major extent replicate IFRS, where State capital companies and the parent undertaking of a group of companies may prepare the financial statements in accordance with IFRS. The rest of the companies need to prepare the financial statements in accordance with the local regulation. The macroeconomic factors are favourable: the GDP growth is present and stable, the exchange rate and interest rate risks have been decreased substantially by Latvia joining the Eurozone. The presence of euro currency and high level of integration into the *EU* econ-

omy shapes the openness of the economy and global cyclical factors in a similar manner to *EU* countries.

### **2.1.3. Bond market in Latvia: historical development in 1993-2017**

Historically, Latvian debt market is represented by three types of securities: government bonds, mortgage bonds, and corporate bonds. The first group has strong dominance being the oldest and the most active on the primary and secondary market (State Treasury, 2015). The development of this segment can be characterised as “stable growth” with the Republic of Latvia continuing borrowing on both domestic and international markets. Mortgage bond market, which has attracted most of the corporate issuers during the period of increased bank lending, has not been active since 2008 (Financial and Capital Market Commission, 2017; Financial and Capital Market Commission, 2017a). Corporate bonds segment has started its development in 1998 and is still undergoing the developing process.

Latvian bond market was started in 1993 where for a number of years only sovereign bonds were present in the market (Zubkova et al. 2002). Parallel to the issues organised by the *Treasury of the Republic of Latvia*, the slow start took place in the mortgage bond segment, later non-banking corporate bond segment joined. From 1993 to 2003 bond market was rather limited in its activity- occasional primary market activity with no secondary market activity present. As the retail lending infused resources into the economy, strong development took place in 2003–2007, thus changing the stage of the economic cycle and initiating the excessive growth of the GDP, which averaged 9.42% in the period (Bloomberg, 2012).

Crisis and quick decrease in the speed of the development of the economy in Latvia took place in 2008- 2010 with GDP shrinking by 4.2%, 18% and 0.3% respectively (SEB banka, 2012). Sharply declined credit activity of the banking sector resulted in the excessive liquidity of the banks thus activating their participation as the investors in the primary market of domestic sovereign bonds. The treasury departments participated as active buyers of the sovereign debt thus financing the budget deficit of the country and consequently further developing the governmental bond segment of the country. Throughout the whole economic cycle, the activity of the corporate market was minimal while the government segment underwent the solid development.

Domestic and international bond segment in Latvia is formed by both public and private bonds, where the corporate debt is issued by financial and non-financial institutions. The relative proportion of government, mortgage, and corporate bonds in the total pool is 87% and 13% re-

spectively. Substantial domination of sovereign debt and the bonds issued by financial institutions in Latvia goes in line with the findings of Braun and Briones (2006) stating that the activity in the global bond market is concentrated in governmental and financial institution instruments. All the domestic government bonds are listed at *Nasdaq Baltic*; international government debt is listed at international exchanges, while domestic corporate debt is both listed and non-listed at *Nasdaq Baltic* (2016).

#### 1) government bonds

Government bond market is the leading bond segment in Latvia measured by both historical and absolute indicators (Nasdaq Baltic, 2012). As stated by the *Treasury of the Republic of Latvia* (2017), the goal of issuing Latvian sovereign debt is to ensure financing of the government budget deficit and re-financing of the government debt, as well as the liquidity of the government finances. Besides to their fiscal function, sovereign bonds are used as an instrument of the monetary policy by the *Bank of Latvia*, which can use them for regulating money amount in the system.

Based on their maturity, theory divides all the bonds into three categories: short-term bonds, medium-term bonds, and long-term bonds, where the actual length for those categories differs among the countries (Fabozzi, 2005). *Treasury of the Republic of Latvia* (2017) defines the timing as short term-bonds: up to 1 year; medium-term: 1 to 5 years; long-term: longer than 5 years.

Historically the first primary issue of the domestic debt in Latvia took place in 1993 as 1-month Treasury bill auction offering LVL 2 million nominal securities with the weighted average rate 24.47% (Latvian Central Depository, 2011). The securities issued in the following years increased the duration of the Treasury lending. The *Treasury of the Republic of Latvia* implements the sovereign debt issues process after the decision on the issue is made by the *Ministry of Finance of the Republic of Latvia*. The process of domestic sovereign bond issuing is taking place in accordance with the “Regulations on Issuing Government Securities” approved by the Cabinet of Ministers on May 6, 2014. The infrastructure support for organising the auctions is provided by *Nasdaq Baltic* (Treasury of the Republic of Latvia, 2017).

Analysis of the activity of the domestic sovereign segment remained stable in the period between 2002 and 2007 followed by the sharp increase in the years of crisis (Latvian Central Depository, 2011). Sharp growth of the number of issues made by the Treasury started in the

second half of 2008 peaking at 183 issues in 2009 (Figure 9). Macroeconomic instability with 3 and 6 months *RIGIBOR* rates undergoing turbulent times, lead to high uncertainty level and thus short maturity of the government issues thus also increasing the number of the issues.

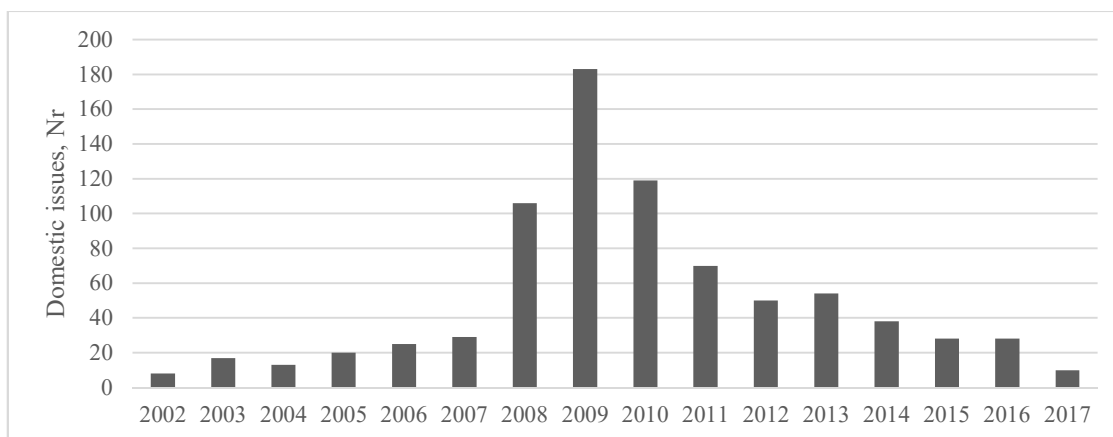


Figure 9. **Number of primary domestic issues organised by the Treasury of the Republic of Latvia, 2002-2017**

Source: Author's calculations based on Nasdaq Baltic data (2018).

Even though being characterised by the abnormal number of short-term issues, the period was important for the debt market of the country- the domestic sovereign segment has undergone its formation stage. The latter acted as the indicator for the international investors- Latvia as a country has started its development of the debt securities segment. Still, the activity of the country was rather insignificant as related to the EUR 7.5 billion worth austerity package Latvia received from the international donors (Bloomberg, 2016).

Even though the number of issues increased in the second half of the decade, an important period of Latvian sovereign bond market development was 2004-2005, when the primary market got its first boost after the news about Latvia joining *European Monetary Union* in 2008 thus changing the risk category of the country and its debt. The news resulted in the expectations by the market participants about the lower credit risk of Latvia as future *European Monetary Union (EMU)* zone country, which made the yield of Latvian sovereign bonds very attractive as compared to similar *EMU* participants. Relatively active speculations (limited by the lack of liquidity in the secondary market) with pressure on the demand side took place and resulted in the decrease of the yield to maturity (YTM) of Latvian sovereign debt, where the spread between YTM of similar-maturity in sovereign debt securities of German EUR and Latvian LVL denominated bonds spread reached their historical minimum at 0.3% or 30 basis points. The situation

has changed in 2006 when concerns on country fulfilling Maastricht criteria started (Bloomberg, 2008).

Postponed euro introduction, raised inflation, world credit crunch and rumours about Latvian currency lats (LVL) devaluation resulted in the fast increase in the yield to maturity of Latvian government bonds - the spread between similar maturity sovereign debt securities of German EUR and Latvian LVL denominated debt reached 2% or 200 basis points (Bloomberg, 2008). Cheap bonds decreased the activity in the secondary market as the seller side was not active. The primary market became too expensive for the government to pay the market yields. In the result, Latvian government debt auction issues were cancelled in the second half of 2007 (Nasdaq Baltic, 2015). After 0.5 year without auctions, State Treasury came to the primary market selling 1-year bonds with 2.6% or 260 basis points spread between similar-maturity government debt securities of Germany and Latvia (Bloomberg, 2008). The need for finance and a high level of uncertainty in the market resulted in the substantial number of short-term bonds being issued in 2008-2009 while increasing the amount issued (Figure 10) (Nasdaq Baltic, 2012).

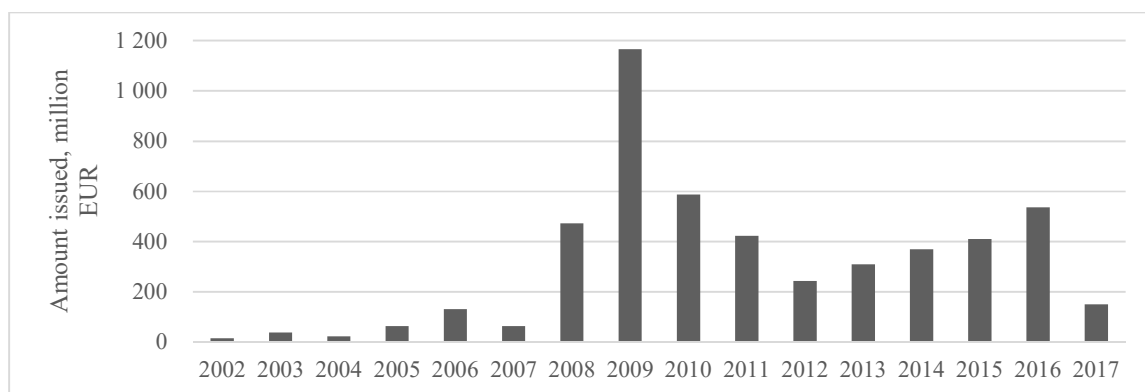


Figure 10. **Amount of domestic issues organised by the Treasury of the Republic of Latvia, 2002-2017 (million EUR)**

Source: Author's calculations based on Nasdaq Baltic data (2018).

This activity gave the boost for the development of the domestic public market, where the gradual increase in the duration of the securities issued by the Treasury attracted new investors to the market and returned the activity of the ones investing in the alternative products. Years 2010-2011 can be characterised as stable for the development of the governmental segment of Latvian domestic public debt- primary market auctions have taken place on a regular basis, the duration of the primary market securities has increased from maximum 1 year in 2009 to 10 years in

2011. Starting from 2012 the total amount issued has been gradually increasing while the number of auctions decreasing thus increasing the amount issued per auction (Figure 11).

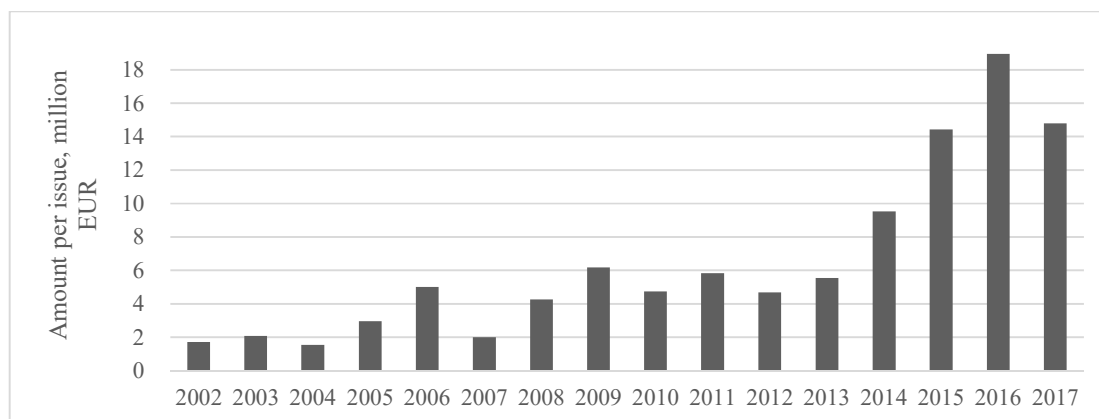


Figure 11. **Average amount per issue of domestic sovereign bond auctions organised by the Treasury of the Republic of Latvia, 2002-2017 (million EUR)**

Source: Author's calculations based on Nasdaq Baltic data (2018).

The issuance in the international public debt is not following the domestic one. Starting from 1999 or 6 years after the first domestic public debt issue took place, Republic of Latvia went to the global arena for borrowing via Eurobond issues (Table 8).

Table 8. **The activity of the Treasury of the Republic of Latvia in Eurobond market, 1999-2017**

ISIN	Currency	Amount issued (million)	Issued (year)	Maturity (year)	Coupon rate (%)
XS0097199201	EUR	225	1999	2004	6.25
XS0138888689	EUR	200	2001	2008	5.375
XS0189713992	EUR	400	2004	2014	4.25
XS0350977244	EUR	400	2008	2018	5.50
XS0638326263	USD	500	2011	2021	5.25
XS0747927746	USD	1000	2012	2017	5.25
XS0863522149	USD	1250	2012	2020	2.75
XS1017763100	EUR	1000	2014	2021	2.625
XS1063399536	EUR	1000	2014	2024	2.875
XS1295778275	EUR	500	2015	2025	1.375
XS1333704713	EUR	550	2015	2020	0.5
XS1409726731	EUR	850	2016, 2017	2036	1.375
XS1501554874	EUR	950	2016, 2017	2026	0.375
XS1566190945	EUR	500	2017	2047	2.25

Source: Author's calculations based on Bloomberg (2016) and Treasury of the Republic of Latvia (2017a).



All Eurobond issues were placed in the primary market with the help of international banks. The participants in both domestic and international public debt market were professional investors where the issuer side was dominated by the sovereign issuer. Still, the goal of the capital market is to provide access to funds for all borrowers, not just the government. Moreover, the goal of the sovereign debt is crucial for establishing bond market infrastructure as well as the benchmark curve.

## 2) mortgage bonds

The first non-government bond issue in Latvia took place in 1994 as the placement of LVL 200300 *Latvijas Hipotēku un zemes banka (LHZB)* mortgage bond issue (Bloomberg, 2016). In Latvia, mortgage bonds are regulated by the Law on Mortgage Bonds, which was introduced in 1998 and stimulated the activity of both issuers and investors. In the period between 2001 and 2003, the pace of development of the mortgage bond segment in Latvia was stable but very slow due to the domination of one issuer, small issue amounts, and buy-and-hold strategy of the local pension fund managers as the main investors. In 2001 AB and AC series of LHZB issues took place, followed by AE, AF, and AG in the later period. In the second half of 2001 LHZB AD, AI and AH issue series were listed at *Nasdaq Baltic*. The year 2003 was comparatively active- the public debt registered during that time reached 23 million LVL- 3 issues of LHZB (13 million LVL), *Nordic Investment Bank* (5 million LVL) and *Nord/LB Latvija* (5 million LVL) took place (Financial and Capital Market Commission, 2008).

The activity in the mortgage bond market was directly related with the activity of the mortgage lending by the banking sector due to the local regulation. The Law on Mortgage Bonds provides the limitation for banks only to issue mortgage bonds (Law on Mortgage Bonds, 2016). According to *Latvian Central Depository* (2011) between 2004 and 2006 credit activity in the banking sector increased substantially thus attracting the issuers to the mortgage bond market. By the year 2006, the number of new issues in mortgage bond market reached its maximum number of issuers: 5 banks have managed to attract resources in the bond market: *Latvijas Hipotēku un zemes banka*, *Baltic Trust Bank*, *Privātbanka*, *Latvijas Krājbanka*, and *Trasta komercbanka* (Tocelovska, 2008a). In 2007 the situation in the credit market started to change- the period could be described as the first year for the downside of the newly issued credits (by 59%) (Latvian Commercial Bank Association, 2012). Mortgage bond market, which has attract-

ed most of the corporate issuers during the period of increased bank lending, has not been active since 2008 (Financial and Capital Market Commission, 2015).

### 3) corporate bonds

The first corporate bond issue is dated by 1998 when *Eksportkredit* has issued bonds with the face value of 15 million LVL or the biggest public issue of that time in Latvia (Apsītis et al., 2003). Strong development of the economy between 2003 and 2007 made a positive impact on the whole bond segment: the activity increased not only in the mortgage bond segment but also in the corporate debt securities. According to the statistics of *Latvian Central Depository* (2016), the biggest issue made by the non-financial borrower in 2007 was by *Alta Real Estate Partners*, where the amount borrowed reached EUR 15 million. The other corporate bond issues made in the same year were *Telekom Baltija* (EUR 7 million), *ELKO Grupa* (EUR 6.5 million) and *Apex Investments* (EUR 5.5 million), *Happy Trails* (EUR 3.5 million) and *Pilsētņēmēju institūts "Urban Art"* (EUR 2.5 million) (Bloomberg, 2015). From all of the issues made in 2007, only *Apex Investments* had listed its 5 500 bonds on *Nasdaq Baltic* Bond list (Nasdaq Baltic, 2015).

The development of the corporate bond market in Latvia during the years of the financial crisis was minimal as investors shifted for safer assets or even asset classes. The study of Arteta (2005) stressed that crises conditions could prevent the normal credit capital flow to the corporate.

After-crisis period in corporate bond market in Latvia can be characterised by high activity of the issuers and increasing investor recognition of the segment where 98% of all the issuers in the period 2010-2016 represent financial sector companies mostly banks (Nasdaq Baltic, 2016). During the five-year period, non-financial sector companies made only 6 out of 62 issues: *Elko Grupa*, *Acme Corporation*, *Baltic Dairy Board* and *Latvenergo*. With its 43 corporate bonds listed on *Nasdaq Baltic*, Latvia has the most developed local corporate bond market in the Baltics, while no corporate bond is listed on *Nasdaq Vilnius* and one corporate bond is listed on *Nasdaq Tallinn* (Nasdaq Baltic, 2016). While looking more developed when compared to the Baltic region, the small scope of the market, skewness to the financial sector issuers and small numbers of the issuers are triggering the comparative success to the Baltic peers. The latter stipulates the need for a framework to measure the level of development of the corporate bond market in Latvia.

## **2.2. Comparative elements framework**

Comparative elements frameworks provide a ratio-based structure for the comparative assessment of the bond market of a country and its corporate segment as related to another country or group of countries. While the financial sector development indicator model introduced by the *World Bank* (2004) has provided the rare framework, which has been tested in its methodology and applied to the country sample selected, the Author has further developed the framework by taking into the account the results and conclusions of the FSDI as well as the changes both in the academic research and financial markets. The comparative elements framework as developed in this research provides four groups of ratios for the analysis of the development of the bond market and its corporate bond segment: size, access, efficiency, and stability.

The comparative elements framework undermines the comparison of one country to the selected sample. While the study of the *World Bank* (2004) has provided the application of its framework, the country sample selected for the analysis did not include Latvia. The Author applies the framework to Latvia and introduces the selection of peer sample for the analysis performed. The following data selection is applied in the analysis: the data for bond yields is determined by the data as extracted from the *Bloomberg* database, the statistics on macroeconomic and bond market indicators is retrieved from the *World Bank* and the *Bank for International Settlement* database and expanded by the data on Latvia from *Nasdaq Baltic* and *Latvian Central Depository*. The period of analysis of the comparative elements framework is 2008-2017.

### **2.2.1. Measuring the level of development of the corporate bond market in Latvia as compared to Germany, Sweden the USA**

The first sample of peer countries as compared to Latvia includes Germany, Sweden, and the USA. The country selection of Germany and the USA is based on the benchmark status of both countries selected in the bond market where US Treasury bonds and German bunds are used for benchmarking of all the bond issues traded by the financial markets participants. Moreover, various academics have named USA bond market as the most developed bond market: the study of the *World Bank* (2004); Braun and Briones (2006). All of the selected benchmark countries are included in the study of the *World Bank* (2004), where Sweden is named by FSDI study as the country with similar fundamentals to Eurozone countries while being outside of Eurozone. The Author recognises the scope and scale difference between the benchmark countries selected and Latvia, which is eliminated by the relative basis of the ratios calculated. The Author follows

the methodology of the *World Bank* (2004) analysis applied- the study groups bonds according to the issuer: public or private (private contains both bonds issued by non-financial and financial institutions); domestic or international.

a) Size

Three ratios are applied to measure the size of the bonds market: ratio of public (government) sector bonds to GDP, ratio of private (corporate) sector bonds to GDP and the ratio of international bonds to GDP (The World Bank, 2004). While GDP statistics is provided by the *World Bank* database statistic, data on the size of the sovereign, corporate and international bond market is imported from the *Bank for International Settlement* database (World Bank Database, 2016). Since both databases provide the information in USD, USA dollar is used as the base currency for the calculation performed in ratio analysis.

*Public sector bond markets:* analysis of the bond market indicators as performed by the *World Bank* in 2004 stated that the size of the public sector varies across regions and income groups, with North America leading and Europe following (The World Bank, 2004). High-income OECD countries were found to have substantially larger bond markets. The results of the analysis of the bond market indicators performed by the Author for the country sample including Germany, Latvia, Sweden, and the USA reveal that even though the relative weight of the public debt is increasing, the general pattern remains the same: the USA leading while Germany and Sweden following (Figure 12).

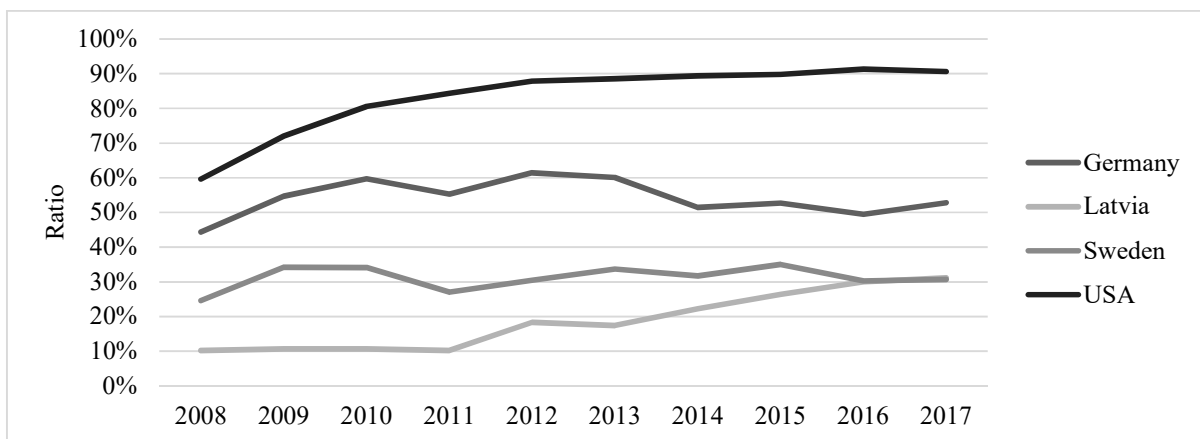
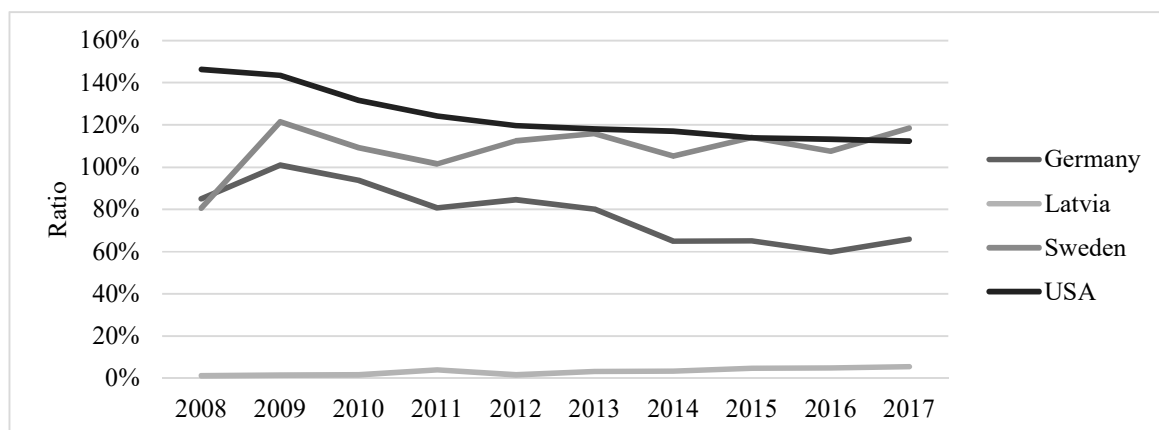


Figure 12. **Ratio of public sector debt to GDP for Germany, Latvia, Sweden, and the USA, 2008- 2017 (%)**

Source: Author's construction based on *The World Bank Database* and *Bank for International Settlement* data (2018).

The relative weight of the public debt of the North America was found by the bond market indicators in FSDI performed by the *World Bank* in 2004 to be 55% of the GDP of the country in the period 2000-2003, while the analysis of the bond market indicators in FSDI performed in this research reveals the increase to 91% of the GDP in 2017 (The World Bank, 2004). Similar trends can be observed in Europe where the combined indicator for Europe and Central Asia was fluctuating at 40% according to the bond market indicators in FSDI performed by the *World Bank* (2004), while the data for 2008-2017 indicates the growth from 44% to 53% for Germany and from 25% to 31% for Sweden. In the observed global environment of increasing need for public borrowing, the ratio of public debt to GDP in Latvia is following the upwards dynamics by increasing from 11% in 2008 to 31% in 2017 thus reaching the level of Sweden.

*Private sector bond markets:* indicator of private sector bonds over GDP contains both domestic and international public bonds (issued by both financial and non-financial institutions). The relative amount of the private borrowing in the USA and Sweden is exceeding the amount of GDP while holding between 3 and 6% in Latvia (Figure 13).



**Figure 13. Ratio of private sector debt to GDP for Germany, Latvia, Sweden, and the USA, 2008- 2017 (%)**

*Source: Author's construction based on The World Bank Database and Bank for International Settlement data (2018).*

Analysis of the bond market indicators in FSDI performed by the *World Bank* (2004) observes the private sector bond to GDP ratio from the income perspective of the country, where high-income OECD countries have the highest and low- income countries the lowest ratio value. These findings are confirmed by the current data analysis. The difference arises when the relative weight of the private sector is calculated. The study performed by the *World Bank* indicated a

40% ratio of high- income OECD countries and 4% low-income, while the current analysis of years 2008-2017 found 66-146% and 6% respectively (The World Bank, 2004).

*International bond markets:* according to the analysis of the bond market indicators in FSDI, international bonds reflect the ability of the country to raise capital globally, where the developing countries experience difficulties utilising international markets (The World Bank, 2004). The analysis performed in the research proves that Sweden, Germany, and Latvia are active issuers in the international market, while the ability of the USA to borrow internationally is comparatively low (Figure 14).

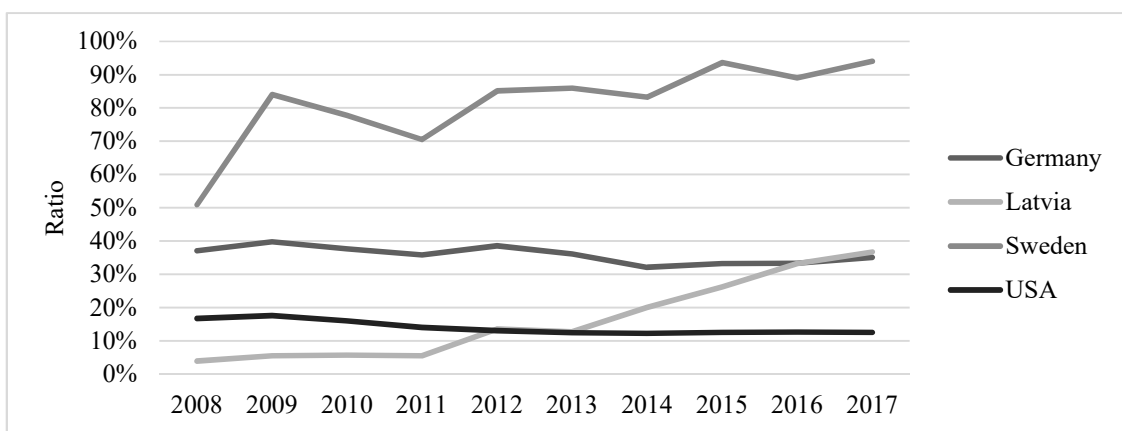


Figure 14. **Ratio of international debt to GDP for Germany, Latvia, Sweden, and the USA, 2008- 2017 (%)**

Source: Author's construction based on The World Bank Database and Bank for International Settlement data (2016)

The latter forms the criticisms to this ratio as an indicator of the ability to raise funds globally- USA market has low international borrowing rate because of its focus on the domestic market while staying attractive for the international bond market. The international focus of Latvian debt is gradually growing and overcoming the USA and Germany.

#### b) Access

The bond market is efficient when the cost of capital is low (The World Bank, 2004). The necessity to measure the cost of capital determines the first indicator of the government bond yields for 3-month and 10-year bonds, where the ease of accessing the market is measured by the ratio of domestic bonds to total bonds outstanding and the ratio of private bonds to total domestic bonds outstanding. Since four countries analysed have different currencies (EUR, USD, and SEK), and USA has only USD issued government bonds, the cash flows of US Treasury bonds with 3-month and 10-year maturities were swapped to EUR cash flows using *Bloomberg* system and then analysed. Germany, Latvia, and Sweden have EUR currency debts.

*Government bond yields (3 months and 10 years):* the analysis of 3-month and 10-year public bonds of the USA, Germany, Sweden, and Latvia indicate that while the short-term bonds yield negative interest rates, 10 year bonds tend to deliver the similar level of return, except Latvia. The latter is explained by the distinction in the credit risk of the countries- USA, Germany, Sweden possess the highest investment grade credit ratings (S&P: AAA, AAA, and AAA respectively) while Latvia has A- or 6 notches lower (Figure 15) (Bloomberg, 2016).

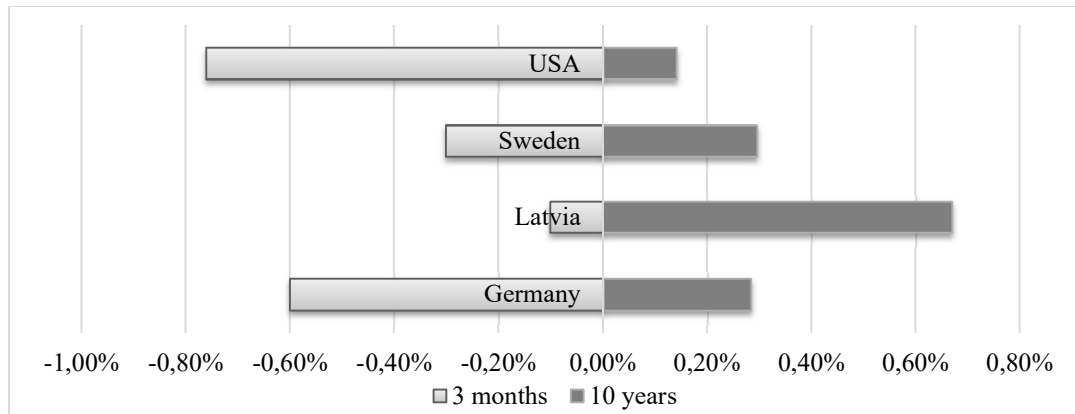
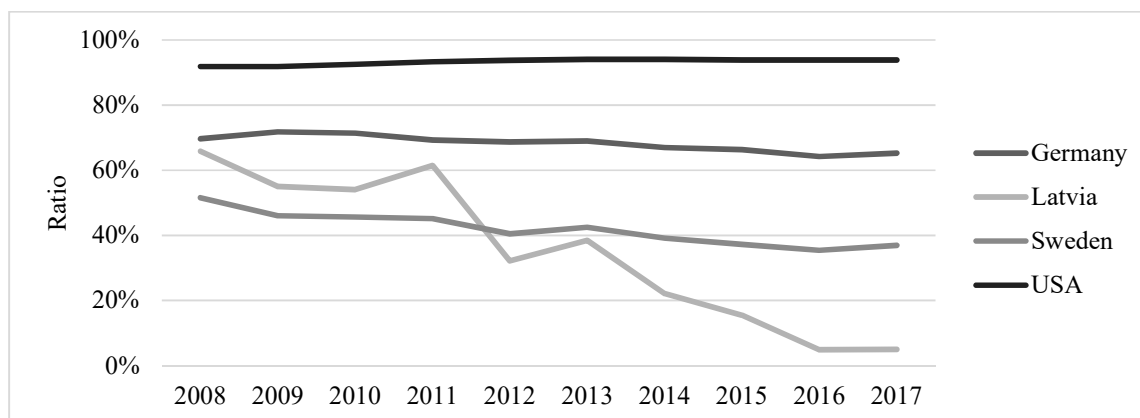


Figure 15. **Cost of capital of sovereign debt for Germany, Latvia, Sweden, and the USA, 2016 (%)**

Source: Author's construction based on Bloomberg data (2016).

*Ratio of domestic bonds to total bonds outstanding:* according to FSDI, measurement of domestic bonds to total bonds outstanding indicates the capacity of the local market to provide capital (The World Bank, 2004). Besides to indicating the local willingness to invest in the local debt, domestic issues theoretically reduce the currency mismatch as domestic borrowing is preferably done in the local currency. Data analysis of the domestic bonds as the proportion of total debt securities of the country reveals that, while USA and Germany have a bigger focus on the domestic market, Sweden account only 1/3 of its borrowing in the domestic market, while the weigh of Latvia has fallen to 5% (Figure 16). Latvia is decreasing its local borrowing capacity- the domestic borrowing is unchanged in the conditions of growing total and international borrowing.

*Ratio of domestic private sector bonds to total domestic bonds:* according to the *World Bank* (2004), the measurement of domestic private bonds to total domestic bonds outstanding shows the convenience of private sector to obtain the capital domestically, which indicates the degree of accessibility and affects financing decisions.



**Figure 16. Ratio of domestic total debt to total debt for Germany, Latvia, Sweden, and the USA, 2008- 2017 (%)**

*Source: Author's construction based on The World Bank Database and Bank for International Settlement data (2016).*

Although the USA had the leading position in the study of the *World Bank* (2004), the analysis performed in the research reveals that Germany and Sweden have a constant demand for the domestic bond market.

a) Efficiency

FSDI provides four ratios of efficiency area: quoted bid-ask spreads (10-yr government bond yield), turnover of private sector bond on securities exchange, turnover of public sector bond on securities exchange, Settlement Efficiency Index (The World Bank, 2004). The research by the *World Bank* (2004) challenged the indicators of turnover of private sector bond on securities exchange and turnover of public sector bond on the securities exchange because of the over-the-counter base of the transactions with the fixed income securities thus stating that both indicators lack many trades. The Settlement Efficiency Index is neither described nor applied by FSDI. The only indicator used by FSDI as the measure of efficiency is the quoted bid-ask spreads (10-yr government bond yield). The comparative framework as developed by the Author provides three ratios: quoted bid-ask spreads (10-yr government bond yield), number of the counterparties providing the prices and size of the quote.

*Quoted bid-ask spread of 10 year government bond yields:* The analysis of the bid-ask spread of 10-year government debt securities of Germany, Latvia, Sweden and USD for the data on 14/01/2016 confirms the results of the study of the *World Bank* (2004): Germany and USA have less than 0.007% bid ask-spread, while Sweden has 0.02% (Figure 17).



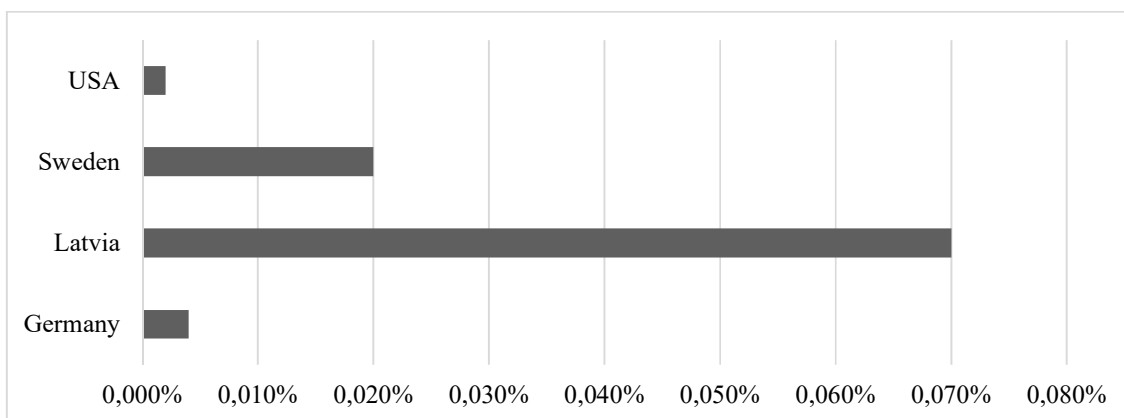


Figure 17. **Bid-ask spread of 10-year government bond yield for Germany, Latvia, Sweden, and the USA, 2016 (%)**

Source: Author's construction based on Bloomberg data (2016).

The study of the *World Bank* relates the higher bid-ask spread of Sweden to the absence of euro currency while pointing that the country has similar fundamentals to the other Eurozone countries (The World Bank, 2004). The bid-ask spread for Latvian government bonds of 10 year maturity reaches 0.07%, which is substantially higher than the countries analysed in the research. Still, the comparison of the bid-ask spread of Latvian government bonds in 2011 and 2016 indicates important progress- the bid-ask spread in 2011 reached 0.3% or 400% higher than the current value. The existing comparative higher bid-ask spread for Latvian government bonds can be justified by the amounts outstanding of the government bonds and thus lower liquidity of the bonds: Germany EUR 10 billion (ISIN DE0001102390, maturity 15/02/2026), Latvia EUR 0.5 billion (ISIN XS1295778275, maturity 23/09/2025), Sweden SEK 44.7 billion (ISIN SE0007125927, maturity 12/11/2026), USA USD 44.9 billion (ISIN US912828P469, maturity 15/02/2026) (Bloomberg, 2016).

#### b) Stability

Stability is the fourth criteria for evaluation of the bond market development and its corporate segment where the comparative framework provides three metrics for the area: volatility of the sovereign bonds, skewness of the sovereign bonds, and ratio of short-term to total bonds (domestic). The *World Bank* (2004) stressed that the lack of stability in the bond market could result in the higher cost of borrowing besides to discouraging investors from entering the market. As suggested by the FSDI framework, stability indicator analysis is performed for a public bond segment only.

*Volatility of sovereign bonds:* FDSI measures volatility by the value of standard deviation thus indicating how widely the values are dispersed from the mean yield of the 10-year sovereign benchmark security. In order to measure the standard deviation of every country as included in the sample selected, closing daily ask yields to maturity of 10-year government debt securities of Germany, Latvia, Sweden and USA were analysed. Benchmark bond information was exported from *Bloomberg* system (Germany ISIN DE0001102390, maturity 15/08/2025, Latvia ISIN XS1295778275, maturity 23/09/2025, Sweden ISIN SE0005676608, maturity 12/05/2026, USA ISIN US912828XB14, maturity 15/05/2025) (Bloomberg, 2016). The results of the volatility test revealed that all four countries had the same level of volatility (Table 9).

**Table 9. Volatility of 10-year sovereign benchmark bonds for Germany, Latvia, Sweden, and the USA, 2016**

	Germany	Latvia	Sweden	USA
Standard deviation	0.195	0.193	0.196	0.184

*Source: Author's calculations based on Bloomberg data (2016).*

*Skewness of sovereign bonds:* the research of the *World Bank* views the skewness indicator as the gauge of the probability of substantial losses associated with the public debt of the country. Statistically, skewness shows the degree of asymmetry of a distribution around its mean, where the positive value indicates a distribution with an asymmetric tail extending toward more positive values, while negative- a distribution with an asymmetric tail extending toward more negative values (Doane and Seward, 2011, Press et al., 1992). 10 year sovereign benchmark bond of every country were exported from *Bloomberg* database (Germany ISIN DE0001102390, maturity 15/08/2025, Latvia ISIN XS1295778275, maturity 23/09/2025, Sweden ISIN SE0005676608, maturity 12/05/2026, USA ISIN US912828XB14, maturity 15/05/2025) (Bloomberg, 2016). The results of the skewness test contradict the findings of the *World Bank* (2004) where the returns in the developed markets in general exhibit less negative skewness (Table 10).

**Table 10. Skewness of 10- year sovereign benchmark bonds for Germany, Latvia, Sweden, and the USA, 2016**

	Germany	Latvia	Sweden	USA
Skewness	-0.86	-0.50	-0.19	-0.81

*Source: Author's calculations based on Bloomberg data (2016).*

*Ratio of short-term to total bonds:* the dominating position of the short-term bonds within either domestic or international bond segment reflects the relative instability and risk as theoretically the borrower comes to the bond market with the long-term financing needs (The World Bank, 2004). If the dominating maturity is short, this acts as a signal to the market participants about an inability to attract longer financing and thus indicating to the relative instability. The proportion of government bonds with the maturity in less than 3 years forms 30-40% of Latvian and German and over 50% of the debt of Sweden and the USA (Table 11).

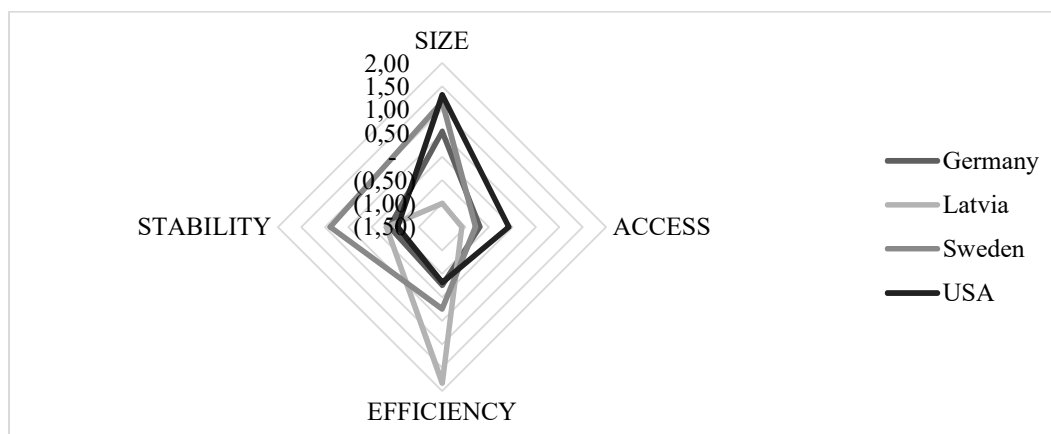
**Table 11. Calculation of ratio of short-term to total bonds for Germany, Latvia, Sweden, and the USA, 2016**

	<b>Germany</b>	<b>Latvia</b>	<b>Sweden</b>	<b>USA</b>
Ratio	39%	34%	52%	51%

*Source: Author's calculations based on Bloomberg data (2016).*

*Composite indicators:* the methodology of FSDI framework states that in order to obtain the indicators of every component of the framework: size, access, efficiency and stability, sub-indicators for each of the segments are calculated, standardised by subtracting the median of the distribution and scaled by the standard deviation of the distribution. The standardised scores are then averaged to create the composite indicator for every segment (The World Bank, 2004). In statistics, the methodology of data standardization includes the mean, not median. Riffenburgh (2012) standardises the scores by subtracting the mean from every observation and then dividing the result by the standard deviation. Rarely authors use median- according to Nolan (1994) standardisation by the removal of the level, and the spread from data allows to compare distribution more easily. Removing the level means subtracting the median from the values, which makes features of the distribution such as spread more apparent. Additionally, the spread is also removed. As the methodology of FSDI assumes using the median, in order to get sub-indicators of size, access, efficiency and stability, standardisation of the data is done by a formula: Standardised score of the ratio = (ratio-median)/standard deviation.

Both Germany and USA provide the framework for the indicators and remain close to each other in the results, while Sweden and Latvia provide more extreme indicators (Figure 18).



**Figure 18. Bond market indicators for Germany, Latvia, Sweden, and the USA, 2016**

*Source: Author's construction based on The World Bank, Bloomberg, and Bank for International Settlement data (2016).*

The obvious dominance by the USA and Germany is explained by the FSDI previous research - larger bond markets are more efficient and provide easier access to lower cost domestic capital. Latvia has a comparatively low level of bonds outstanding from all the three size group indicators observed: private sector relative to GDP, public sector relative to GDP, international bonds relative to GDP.

While the size indicator ratios are naturally limited for the substantial development by the scale factor of the country, the current focus of the Ministry of Finance on financing the debt via sovereign debt should be continued joined by the domestic corporate debt. To overcome the size constraint, FSDI study suggested the country to develop common securities exchanges and spread the infrastructure costs among members- the opportunity for a pan-Baltic securities cooperation could be introduced. Domestic sovereign issuance both sovereign and corporate should also support the access area- currently, Latvia remains far behind the USA, Sweden, and Germany, where the weaker indicators are in the comparative weight of the domestic market and domestic corporate issuer weight in all domestic issues outstanding. While holding the weaker position in the previous areas observed, Latvia excels the most in the stability area sharing the nearby position with Germany and USA markets. In the number of sub-indicators Latvia has shown very positive dynamics towards stability: relatively decreasing short-term debt, similar to peers volatility indicator. The dynamics of stability area of Latvian corporate bond market displays the progress of the country towards stability thus reaching the level of Germany and USA in this segment. The efficiency area indicators are treated as not sufficiently explored as well as the difference in absolute numbers between Latvia, and the peers is subtle. The results of the analysis

revealed that while being relatively developed to the peers in stability area, Latvia lags in size and access areas.

### **2.2.2. Measuring the level of development of the corporate bond market in Latvia as compared to Croatia, Hungary, Poland, Slovakia, Slovenia**

The main finding of the comparative study of Latvian corporate bond market development when related to the benchmark countries: Germany, Sweden, and the USA have indicated that Latvia is substantially lagging in the areas of size and access, while well performing in the area of stability. In access segment, Latvia remains far behind the USA, Sweden, and Germany, where the weaker indicators are in the comparative weight of the domestic market and domestic corporate issuer weight in all domestic issues outstanding. Stability indicator maps Latvia close to Germany and USA. The dynamics of Latvia reflect the progress of the country towards stability thus reaching the level of Germany and USA in this segment. Braun and Briones (2006) have stated that a well-developed bond market is described by a large size relative to GDP in all segments, a stable composition between private and public borrowers. Relevant and reasonable peer selection is crucial in order to find the comparative level of development of Latvian corporate bond market.

The academic studies as observed by the Author in the theoretical part of this research have not identified the sample of peer countries to be applied for the analysis of the bond market and its corporate segment in Latvia. The traditionally applied classification of developed and emerging markets as the base for comparison is vaguely supported by the academic research. Moreover, the MSCI annually review market classification (stood for Morgan Stanley Capital International- used as MSCI abbreviation only), which is based on more than 40 years of academic research in the areas of risk and performance measurement, does not include Latvia in its country classification table. While both Estonia and Lithuania are included in the Frontier Markets of Europe and Commonwealth of Independent States (CIS) countries: Croatia, Estonia, Lithuania, Kazakhstan, Romania, Serbia and Slovenia, the Emerging Markets for Europe and Commonwealth of Independent States (CIS) countries include: Czech Republic, Egypt, Greece, Hungary, Poland, Qatar, Russia, South Africa, Turkey, United Arab Emirates (MSCI, 2018).

The classification of countries based on the development of both capital markets and loan availability has been done by Bending et al. (2014). The study included Latvia and characterised it as a bank-based financial system. The study examined the presence of loans available for non-

financial companies (NFC) and capital market size indicators and as a result, clustered the *EU* countries into 4 group:

- 1) countries with both large banking sectors and well-developed capital markets: Austria, Denmark, Luxembourg, Spain, Sweden, the United Kingdom;
- 2) countries in which banking plays a large role, and capital markets a lesser role: Cyprus, Estonia, Greece, Ireland, Italy, Malta, Portugal;
- 3) countries with well-developed capital markets in which bank lending, as measured by the stock of NFC loans, plays a comparatively smaller role: Belgium, Czech Republic, Finland, France, Germany;
- 4) countries in which both banking sectors and capital markets appear underdeveloped: Bulgaria, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia

While both of the studies provided a rather imprecise grouping of peer country sample for the comparative analysis of the corporate bond market in Latvia, the Author has run the in-depth interviews with the professional bond market participants in Latvia.

In order to run the in-depth interviews the bond market participants of Latvia were identified. The main investors in Latvian securities markets are portfolio managers of the pension money, where the accumulated amount of the pension funds in Latvia has reached EUR 2.4 billion, out of which 43% or EUR 1.032 billion are invested in Latvia and depending on the guidelines of the plan, the investment in bond instruments varies between 48% and 77% (Latvian Commercial Bank Association, 2016a). The participants of the in-depth interviews were portfolio managers of Latvia. According to the statistics of Manapensija (2016), there are 7 pension asset managers in Latvia: *CBL Asset Management*, *DNB Asset Management*, *INVL Asset Management*, *Nordea Pensions Latvia*, *NORVIK ieguldījumu pārvaldes sabiedrība*, *SEB Investment Management*, *Swedbank Ieguldījumu Pārvaldes Sabiedrība* (Tocelovska, 2016).

The Author has provided to the interviewees the list of the countries as included in both MSCI Emerging and Frontier Markets of Europe and CIS countries and 4 groups of countries as classified by the study of Bending et al. (2014). The interviewees were asked to select 3 countries as peer countries for the corporate bond market in Latvia based on the four area of measurement as defined by the comparative elements framework: size, access, efficiency, and stability.

Table 12. Peer countries of Latvian corporate bond market, 2016

<i>Portfolio manager</i>	<i>Country 1</i>	<i>Country 2</i>	<i>Country 3</i>
1	Poland	Ireland	Bulgaria
2	Romania	Bulgaria	Croatia
3	Poland	Slovenia	Slovakia
4	Poland	Czech Republic	Hungary
5	Poland	Sweden	Norway
6	Poland	Hungary	Slovenia
7	Hungary	Russia	Croatia
8	Romania	Croatia	Bulgaria
9	Poland	Slovenia	Slovakia
10	Poland	Czech Republic	Slovakia
11	Croatia	Hungary	Portugal

*Source: Author's based on data received from in-depth interviews run in February 2016.*

In the result of the in-depth interviews 13 peer countries were mentioned by the participants: Poland was mentioned 7 times, Croatia- 4, Hungary- 4, Bulgaria- 3, Slovakia- 3, Slovenia- 3, Czech Republic-2, Romania- 2, Ireland- 1, Sweden- 1, Russia- 1, Portugal-1, Norway -1 (Table 12). Since Norway is not included in the list of countries as provided to the interviewees, the country was omitted from the final list of countries as analysed by the Author, resulting in 12 peer countries as selected by the interviewees.

The Author has selected Poland, Croatia, Hungary, Slovakia, and Slovenia as the peer country sample for the comparative analysis of the corporate bond market in Latvia. The countries selected got the vote from at least 3 interviewees. Bulgaria has not been added to the sample due to lack of aligned information present on the bond market of the country for the whole period observed. Neither the whole bond market nor its corporate segment has been measured for the level of development of this sample before. The FSDI study performed by the *World Bank* (2004) has covered Poland, Slovakia, and Hungary from the sample selected.

a) Size

In order to measure the size area three ratios are applied by the comparative elements framework as developed by this research: ratio of public (government) sector bonds to GDP, ratio of private (corporate) sector bonds to GDP and the ratio of international bonds to GDP. The

statistical databases of *The World Bank* database and the *Bank for International Settlement* are applied.

*Public sector bond market.* The analysis of the six peer countries selected indicates that the public debt varies within the range of 10%-73%, where Croatia, Slovenia, and Hungary overcome 50% level. The results are contradicting to the previous finding of FSDI analysis finding that the relative size of bond markets in middle-income countries is generally indistinguishable from the one in low-income countries. The weights of the public bonds from the GDP of the countries observed are different by as much as 40% within the sample observed (Figure 19).

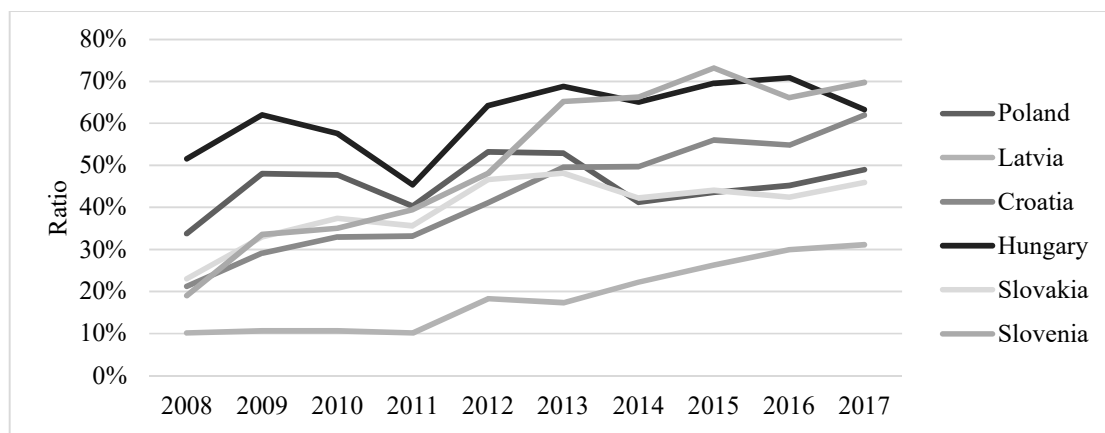


Figure 19. **Ratio of public sector debt to GDP for Croatia, Hungary, Latvia, Poland, Slovakia and Slovenia, 2008-2017 (%)**

Source: Author's construction based on *The World Bank Database* and *Bank for International Settlement* data (2018).

All the countries in the sample selected share the same pattern of increasing the sovereign debt outstanding as the proportion of GDP of the country thus indicating on the increasing importance of the capital market as the source of sovereign funds borrowing. All the countries observed except Latvia and Croatia have undergone the same process between 2008 and 2009, where the market situation in 2010 and lower activity in the debt market have corrected the borrowed amounts and thus decreased the proportion outstanding.

While FSDI methodology observes the higher level of sovereign debt to GDP ratio as the more preferred one, the Maastricht criteria define the level of 60% as the highest for the Eurozone member (European Central Bank, 2016a). The positive perception of FSDI of the high level of the sovereign debt as related to the GDP of the country is challenged by the Author.

Moreover, the significant number of academic studies has proved the negative correlation between the growth of debt and the growth of GDP of the country: Checherita-Westphal and



Rother (2012), Baum et al. (2013), Minea and Parent (2012). The threshold of debt as the percentage of GDP varies in the range of 60-115%. While the range is comparatively wide, the studies, which provide the higher debt to GDP threshold point stress that in some cases the threshold is at 70-80% (Checherita-Westphal and Rother, 2012).

The results of the studies indicate that it is healthier for the economy to keep its debt near the 60% as the percentage of GDP, same as indicated in Maastricht criteria. The lack of a strong case of a causal relationship going from debt to economic growth was found by Panizza and Presbitero (2013). Latvia has the lowest sovereign debt outstanding as the proportion of GDP in the peer group with the upward trend and tendency to increase its presence in the capital markets with the borrowing needs.

*Private sector bond market.* While having the substantial difference in their borrowing statistics for the sovereign debt, the indicator of private sector bonds over GDP is positioned in 2%-16% range starting from 2014 (Figure 20).

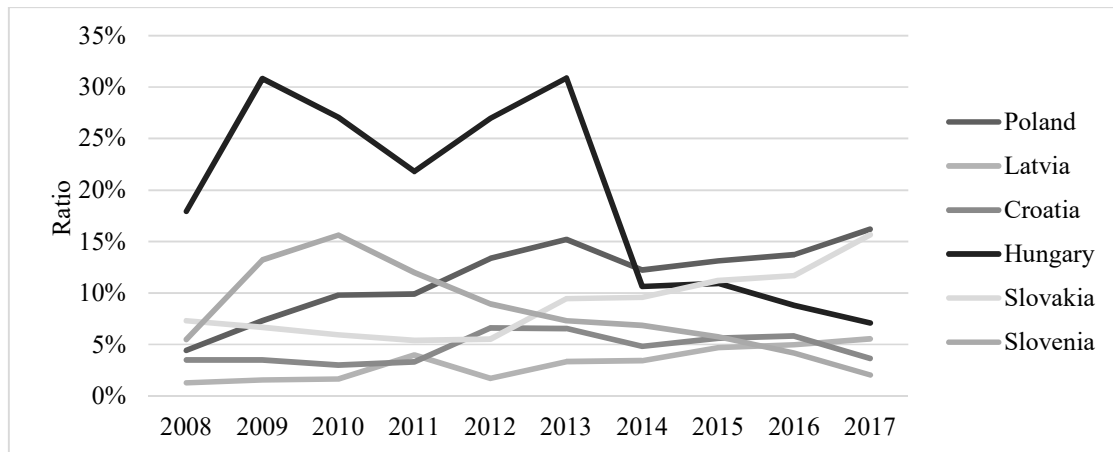


Figure 20. **Ratio of private sector debt to GDP for Croatia, Hungary, Latvia, Poland, Slovakia and Slovenia, 2008-2017 (%)**

Source: Author's construction based on The World Bank Database and Bank for International Settlement data (2018).

The dynamics of three out of six countries observed are comparable with the upward shift in the proportion observed over the period selected, while Hungary, Slovenia, and Croatia show the downward dynamics. The results are comparable with FSDI, where the proportion of the corporate bonds outstanding as the proportion of GDP was found to be a 40% ratio of high-income OECD countries and 4% low-income (World Bank, 2004). Latvia bears the third lowest proportion of the corporate bonds outstanding as the proportion of GDP.

*International sector bond market.* The analysis of the sample of countries performed in the research reveals the similar dynamics of the countries to increase their presence in the international bond market. In its paper from 2004, the *World Bank* indicated that the developing countries experienced difficulties utilising international markets (The World Bank, 2004). All of the six countries observed except Hungary have gone from 5-9% ratio of international debt to GDP in 2008 to 14-37% in 2017 thus proving their positive dynamics and development of the capacity to attract funds internationally (Figure 21).

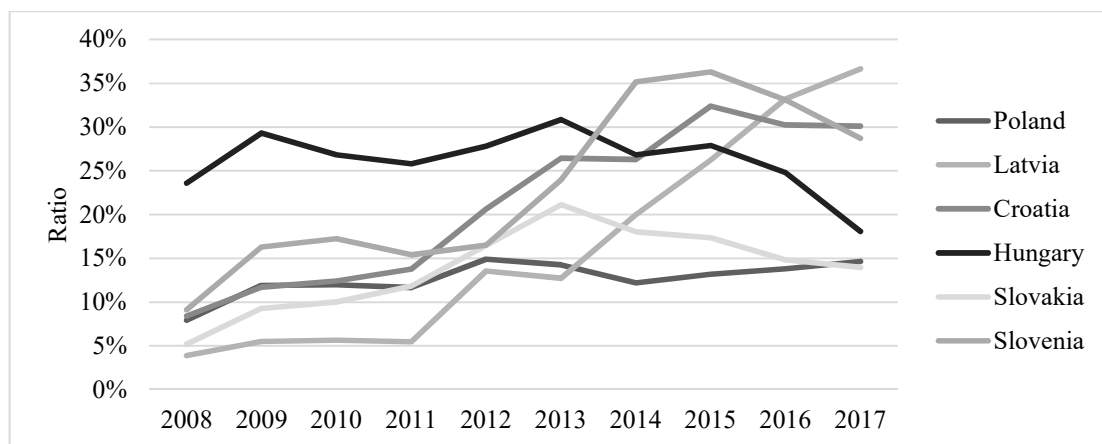


Figure 21. **Ratio of international debt to GDP for Croatia, Hungary, Latvia, Poland, Slovakia and Slovenia, 2008-2017 (%)**

Source: Author's construction based on The World Bank Database and Bank for International Settlement data (2018).

b) Access

According to FSDI, the access is useful and effective only when the cost of capital is low and the process to acquire capital is easy (The World Bank, 2004). While 3-month and 10-year maturities bonds of the sample countries selected are issued in the different currencies, all the relevant cash flows need to be swapped to EUR currency in order to compare the cost of capital of the sovereign debt for 3-month and 10-year maturities. All the cash flows were first swapped to EUR currency with the help of the *Bloomberg* system and then analysed.

*Government bond yields (3 months and 10 years).* The analysis of 3-month and 10-year public bonds of Poland, Latvia, Croatia, Slovakia, Slovenia, and Hungary indicates the difference in yields mostly within 10-year benchmark securities. For the 3-month long bonds similar yields are observed. For longer duration bonds substantial difference between non-Eurozone Hungary and Croatia is observed when compared with Eurozone countries: Slovenia, Slovakia, and Latvia, while Poland is sharing Slovenian 10-year bond yield levels (Figure 22).

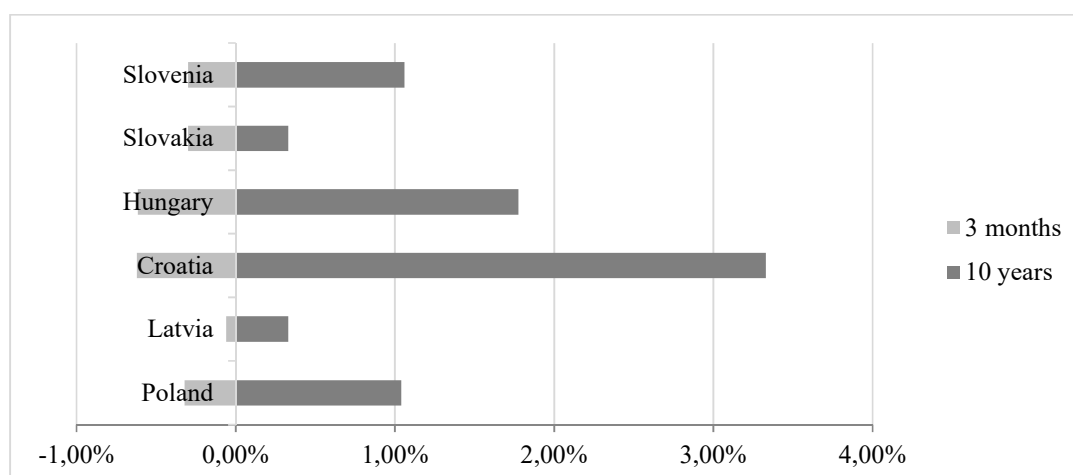


Figure 22. Cost of capital of sovereign debt for Croatia, Hungary, Latvia, Poland, Slovakia and Slovenia, 2016 (%)

Source: Author's construction based on Bloomberg data (2016).

The effect of the asset purchase programme executed by the *European Central bank* and thus influencing the level of yields in the sovereign securities, is increased by the credit rating differences: all bonds except Croatia and Hungary share investment grade risk level, which provides a substantial effect on portfolio investments and thus demand level (Table 13) (European Central Bank, 2016).

Table 13. Credit rating for Croatia, Hungary, Latvia, Poland, Slovakia and Slovenia, 2016

Country	Latvia	Poland	Croatia	Hungary	Slovakia	Slovenia
S&P rating	A-	BBB+	BB	BB+	A+	A-

Source: Author's construction based on Trading Economics data.

*Ratio of domestic bonds to total bonds outstanding.* The study of the *World Bank* stated that the measurement of domestic bonds to total bonds outstanding indicated the capacity of the local market to provide capital (The World Bank, 2004). The analysis of the sample countries selected indicates that while all countries observed except Latvia utilise 50-70% capacity to borrow domestically, Latvia is very much focused on the international borrowing (Figure 23). Latvia has decreased its local borrowing, which is explained by its sovereign debt focus in the international market.

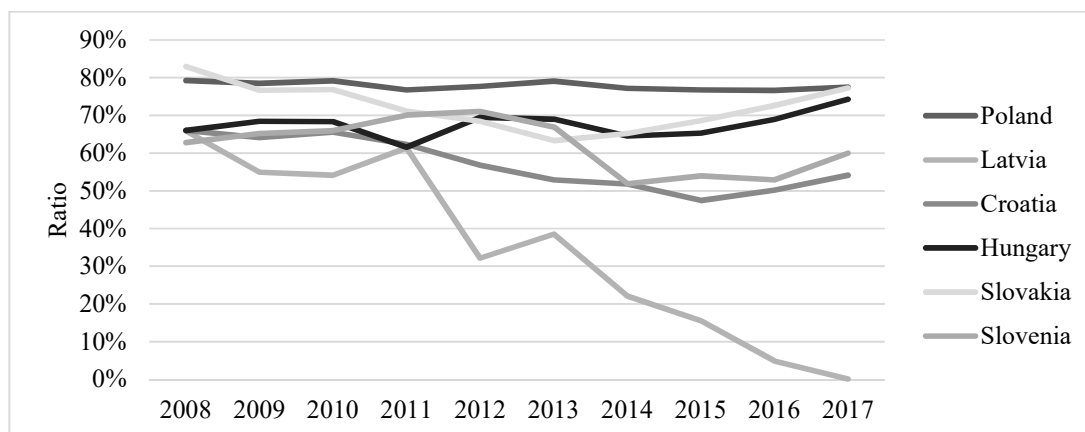


Figure 23. **Ratio of domestic total debt to total debt for Croatia, Hungary, Latvia, Poland, Slovakia and Slovenia, 2008- 2017 (%)**

Source: Author's construction based on The World Bank Database and Bank for International Settlement data. (2018).

*Ratio of domestic corporate bonds to total domestic bonds.* The study of the *World Bank* states that measurement of domestic private bonds to total domestic bonds outstanding indicates the degree of accessibility of the resources locally for the companies thus affecting their financing decision (The World Bank, 2004).

The analysis of the sample selected indicates the relatively low propensity for the companies of the countries observed to borrow domestically. Poland is leading the sample with its 30% of domestic private debt as the percentage of the total domestic debt. Latvia and Slovakia share the second place while the rest of the countries are close to 0% level. This indicator reveals the comparatively strong position of Latvia in the domestic private market.

c) Efficiency

The study of the *World Bank* stressed the importance of the efficiency of the bond market stating that more than 130 countries had some form of organised bond market, but only 50 had become substantial in size, and even smaller number were efficient by international standards (The World Bank, 2004). While stressing the importance of efficiency indicators, two ratios are provided by the *World Bank* for measurement: tightness of the quoted bid-ask spread and the turnover ratio, while admitting that the latter indicator is not reasonable since many of the bond trades are done over-the-counter and thus not included in the exchange statistics. The comparative elements framework developed by the Author applies three metrics: size of the quote (Fleming, 2001) and number of the counterparties providing the prices (Houweling, 2003; Mizrach, 2015) accompanied by bid-ask spreads (10-yr government bond yield) already present in FSDI.

*Quoted bid-ask spread of 10-year government bond yields.* The tightness of the bid-ask spread of the bond yield is treated as one of the main indicators by the majority of the academics. The peer sample observed reveals the very similar level of bid-ask spread for 10-year government bonds (Figure 24).

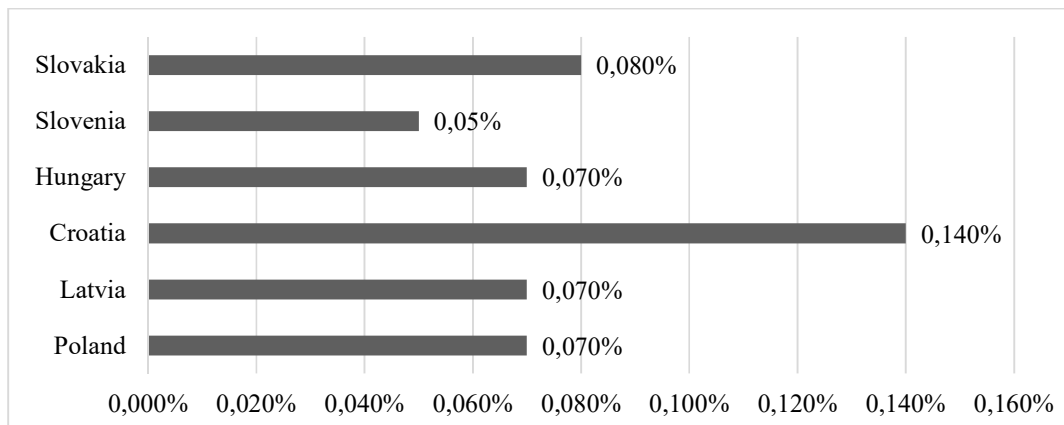


Figure 24. **Bid-ask spread of 10-year government bond yields for Croatia, Hungary, Latvia, Poland, Slovakia and Slovenia, 2016 (%)**

Source: Author's construction based on Bloomberg data (2016).

The only country outstanding is Croatia with 14 basis points bid-ask spread, which is related to the comparatively smaller number of counterparties providing the price information on the bond. While no other reasonable reason like amount issued, local or international issue, the currency of the issue is supporting the difference from the other peers. The analysis of the bid-ask spread of 10-year government bond yields of the six countries observed contradicts the previous findings of the *World Bank* stating that in Eurozone countries bid-ask spreads on bond yields are lower than 0.01% (The World Bank, 2004).

*Counterparties.* The number of counterparties (or price providers) indicates the activity of the market makers in a particular paper. Whilst stressing the specifics of the OTC trading process in the theoretical part, the presence of the price information in *Bloomberg* or *Reuters* is the main indicator of initiating the trade with a particular market maker from the broker or the bank. *Bloomberg* or *Reuters* screen information on a particular bond is the main information source used by the financial industry. The number of the counterparties for the sample selected is 10 on average, where the median is 11. The only country outstanding is Croatia with one counterparty providing the price information for the bond, while no other reason like amount issued, local or international issue and currency of the issue is supporting the difference from the other peers (Figure 25).

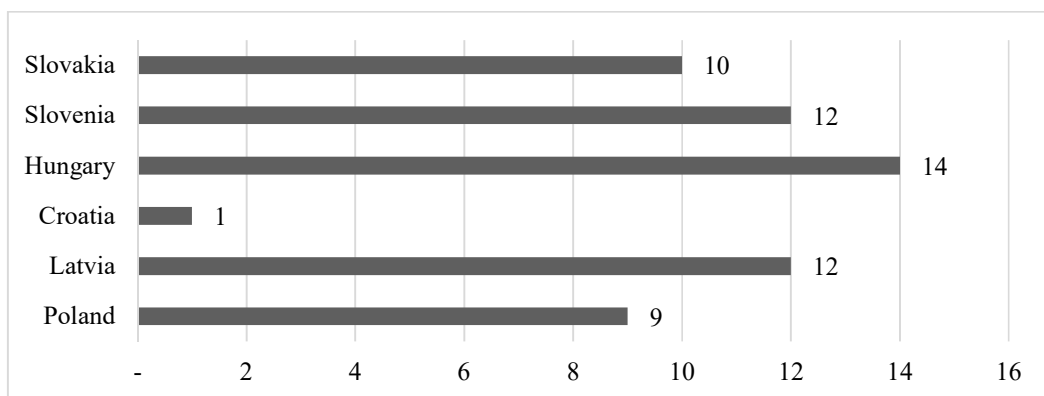


Figure 25. **Number of corporate bond market trading counterparties for 10-year government bond yield for Croatia, Hungary, Latvia, Poland, Slovakia and Slovenia, 2016**  
 Source: Author's construction based on Bloomberg data (2016).

*Quote size.* In order to measure the quote size, the median and the average quote size provided by the counterparties were identified for the 10-year government bonds. While the median value at EUR 1 million is identified for the sample, the average quote size is higher for Slovenia and Slovakia due to several counterparties providing 2-5 million euro price quotes (Figure 26).

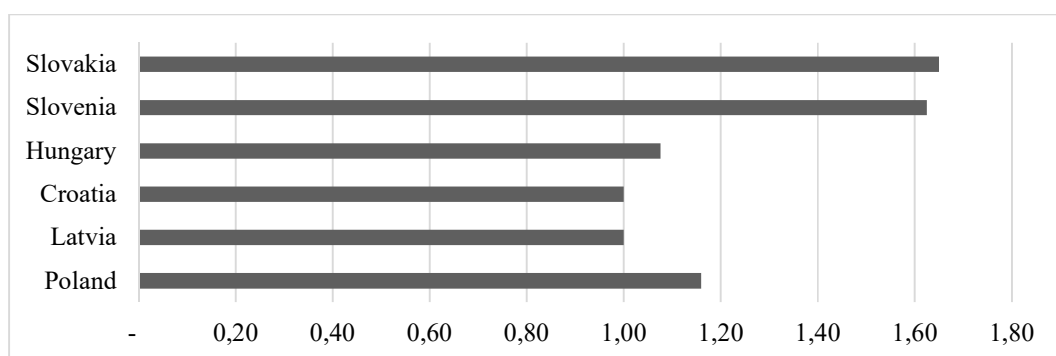


Figure 26. **Quote size for a trade lot for 10-year government bond yield for Croatia, Hungary, Latvia, Poland, Slovakia and Slovenia, 2016 (million EUR)**  
 Source: Author's construction based on Bloomberg data (2016).

Increased counterparty activity could be explained by the higher volume issued for the 10-year government bonds observed (Table 14). Still, the presence of similar scale issues of Hungary and Poland with lower average price quote size does not create the proof for the issued size and quote size perfect positive correlation. The correlation coefficient between the two datasets is 0.6 indicating the moderate positive linear relationship between the size issued and the quote size.

Table 14. **Characteristics of 10-year government bonds, 2016**

Country	ISIN code	Amount Issued
Slovenia	SI0002102984	EUR 1 500 000 000
Slovakia	SK4120008871	EUR 2 800 000 000
Hungary	US445545AL04	USD 2 000 000 000
Croatia	HRRHMFO247E7	EUR 1 400 000 000
Latvia	XS1063399536	EUR 1 000 000 000
Poland	XS1015428821	EUR 2 000 000 000

*Source: Author's construction based on Bloomberg data.*

d) Stability

Stability area includes four metrics as provided by the comparative elements framework developed by this research: volatility of sovereign bonds, skewness of sovereign bonds, and ratio of short-term to total bonds.

*Volatility of sovereign bonds.* The analysis of the volatility demonstrates the standard deviation of the ask yields of the 10-year benchmark bonds of the six countries thus reflecting how widely the daily values of the bonds selected are dispersed from the mean value. Instead of the sovereign bond index, the Author uses 10-year benchmark bond of the respective country.

The results of the analysis of the research partially prove the findings of the *World Bank* stating that in developing countries the volatility is lower than in the developed countries (The World Bank, 2004). From the sample selected, the higher volatility is observed in Latvia, Poland, and Croatia, while lower in Slovakia, Slovenia, and Hungary (Table 15).

Table 15. **Volatility of 10-year government benchmark bonds for Croatia, Hungary, Latvia, Poland, Slovakia, and Slovenia, 2016**

	Poland	Latvia	Croatia	Hungary	Slovakia	Slovenia
Standard deviation	0.27	0.34	0.27	0.20	0.26	0.21

*Source: Author's calculations based on Bloomberg data.*

*Skewness of sovereign bonds.* The *World Bank* introduces skewness in order to measure the probability of large negative losses associated with countries' sovereign bonds (The World Bank, 2004). Instead of the sovereign bond index, the Author uses the 10-year benchmark bond of the respective country. The results of the skewness indicator made by the Author contradict the results of the *World Bank* stating that returns in developed markets in general exhibit less negative skewness. The pattern in the sample selected is mixed and does not provide a visible pattern (Table 16) (The World Bank, 2004).

Table 16. **Skewness of 10-year government benchmark bonds for Croatia, Hungary, Latvia, Poland, Slovakia, and Slovenia, 2016**

	Poland	Latvia	Croatia	Hungary	Slovakia	Slovenia
Skewness	- 0.58	0.39	0.03	0.28	0.18	0.28

Source: Author's calculations based on Bloomberg data.

*Ratio of short-term to total bonds.* Domination of the short-term borrowings indicates the instability and vulnerability of the capital outflows, as well as the inability of the domestic market to attract longer- term financing (The World Bank, 2004). Similar to the findings of the *World Bank*, the Author revealed a mixed pattern of the short-term bonds as the percentage of the total bonds outstanding. While five out of six countries observed count not more than 1/3 of the total bonds outstanding with less than 3 years maturity remaining, Croatia, Poland, and Latvia could access the longer duration financing in the market (Table 17). The data analysis indicates the comparatively stable position of Latvia when analysed short-term to total bonds ratio.

Table 17. **Ratios of short-term to total bonds for Croatia, Hungary, Latvia, Poland, Slovakia, and Slovenia, 2016**

	Poland	Latvia	Croatia	Hungary	Slovakia	Slovenia
Ratio	27%	28%	23%	43%	33%	33%

Source: Author's calculations based on Bloomberg data.

*Composite indicators:* The results of the comparative analysis of the bond market in Latvia and its corporate segment as related to Poland, Croatia, Hungary, Slovakia, and Slovenia reveal the similarity in the development, where Croatia and Hungary are excelling (Figure 27).

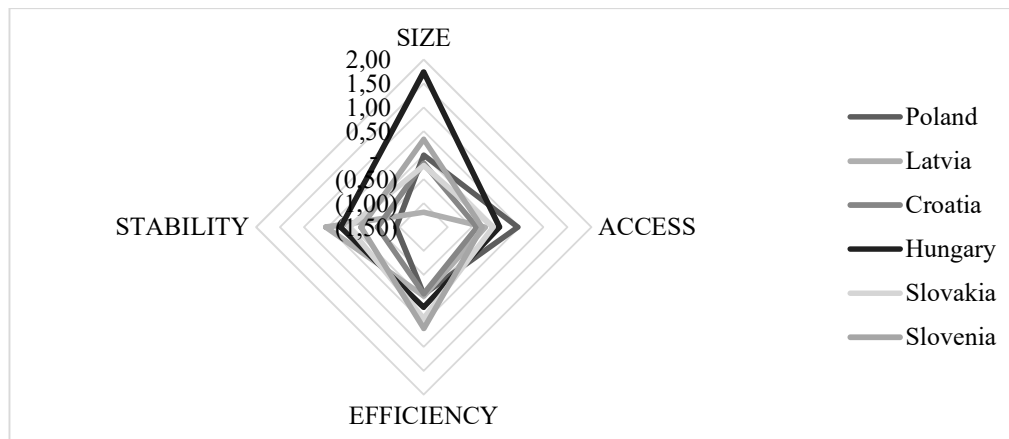


Figure 27. **Bond market indicators for Croatia, Hungary, Latvia, Poland, Slovakia, and Slovenia, 2016**

Source: Author's construction based on The World Bank, Bloomberg, and Bank for International Settlement data (2016).

The position of Latvia is relatively stable, where three out of four indicators reflect the comparatively high level of development of Latvian bond market: access, efficiency, and stabil-



ity. The obvious burden for the country is size area indicators where Latvia is comparatively lower developed. Analysing the indicators of size area within the scope of the sample countries selected, Latvia is lagging as compared to its peers in all the areas observed: sovereign debt as percentage of GDP, corporate debt as percentage of GDP and international debt as percentage of GDP. Analysing the development curve of all the three indicators mentioned, it is important to mention that Latvia's comparatively low position in the size area is the price the country pays for its late recognition of the bond market as the borrowing source both on sovereign and corporate level. The level of the sovereign debt in Latvia stays comparatively lower than peer countries, which is not perceived as a negative factor by the Author. Following the current more active dynamics of the public borrowing, Latvia will face better size indicator position in the future.

From the perspective of access area, the indicators of Latvia are deteriorating over the last years: two out of three indicators are decreasing - ratio of domestic debt as the percentage of total debt outstanding and ratio of domestic private debt as the percentage of the total domestic debt. The shift of focus by the local State Treasury to the international borrowing is influencing the sovereign borrowing curve slope. The positive development in the corporate bond issuance in Latvia is minimally influencing the total bond amount due to the comparatively high amount of the sovereign debt. Latvia demonstrates a stable bond market with less than 30% of short-term bond weight in the total amount of debt issued.

### **2.2.3. Measuring the level of development of the corporate bond market in Latvia as compared to Bulgaria, Hungary, Lithuania, Poland, Romania, Slovakia, Slovenia**

Latvian financial system is characterised as bank-based by Bending et al. (2014). Latvia is found to be in the fourth cluster together with seven other peers (Tocelovska, 2017). While the peer group is found to share the same cluster for financial system comparison and partially contains the countries selected by the in-depth interviews by the study of Tocelovska (2016) the comparative elements framework is run for the whole fourth cluster as grouped by Bending et al. (2014) to identify the comparative development of the bond market Latvia and its corporate segment within the peer group and potential for further development within *CMU* action presence: Bulgaria, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia. The results of the application of the framework indicate the comparatively high level of development of Latvian bonds market and its corporate segment in stability, access, and efficiency areas (Figure 28). While the summarised data is comparatively similar for the whole cluster observed, a more

detailed analysis should be performed to find the relative position of Latvia. Size area is measured by three ratios as provided by the comparative elements framework: ratio of government sector bonds to GDP, ratio of corporate sector bonds to GDP and the ratio of international bonds to GDP.

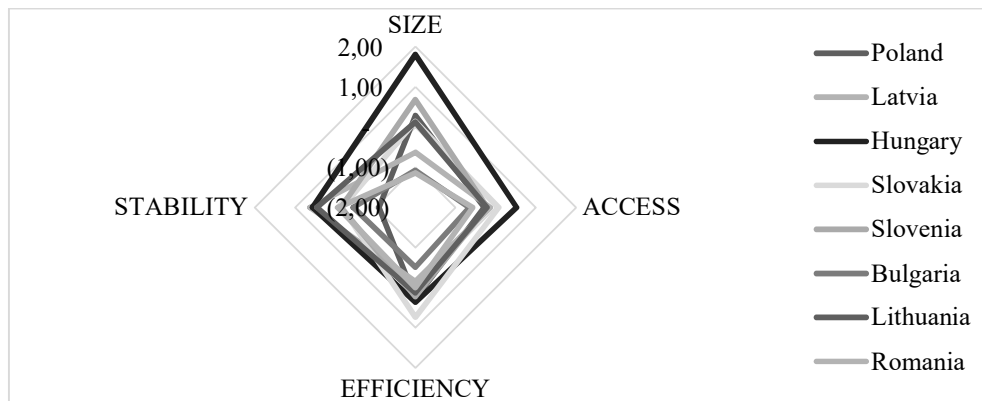


Figure 28. **Bond market indicators for Bulgaria, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia, 2017**

Source: Author's construction based on *The World Bank, Bloomberg, and Bank for International Settlement data (2017)*.

For the sovereign debt sector, the analysis of 8 peer countries selected indicates that public debt varies within the range of 8%-66%, where Slovenia and Hungary overcome 50% level. The results are contradicting previous FSDI analysis finding that the relative size of bond markets in middle-income countries is generally indistinguishable from the one in low-income countries.

The weights of the public bonds from GDP of the countries observed are different by as much as 60% within the sample observed. While the framework treats the higher level of debt as more a positive one, the study of Artis (2002) indicates that public debt benchmark established by the Maastricht criteria provides the reasonable target. Buitter et al. (1992) argue that fiscal convergence criteria can lead to unnecessary hardship if pursued mechanically stressing the lack of the case to restricting the debt to GDP ratio to lie below a particular value. Latvia is indicating 37% level of public debt outstanding as the percentage of GDP. The level is gradually increasing starting from 4% in 2008.

Private sector indicators share more homogeneity- the ratio of corporate bonds as the percentage of GDP for the cluster countries observed stays below 15% for all the countries as included in the sample observed except of Hungary- the dynamics of Hungary despite its initial high position and comparatively favourable position can be described as a steep decrease in the

period of 2013-2017. The decrease in the corporate debt was relatively higher when compared to the growing GDP base. The results are comparable with FSDI findings by the *World Bank* in 2004, where the proportion of the corporate bonds outstanding as the proportion of GDP of the country was found to be a 40% ratio of high-income OECD countries and 4% low-income (The World Bank, 2004).

In its article from 2004, the *World Bank* indicated that the developing countries experienced difficulties utilising international markets (The World Bank, 2004). All of the six countries observed except Hungary have gone from 2-11% ratio of international debt to GDP in 2008 to 13-37% in 2017 thus proving their positive dynamics and development of the capacity to attract funds internationally. Latvia has the highest level of the international debt as the proportion of GDP within the cluster observed thus proving the strong presence of the international demand.

According to FSDI, the access is useful and effective only when the cost of capital is low and the process to acquire capital is easy (The World Bank, 2004). While 3-month and 10-year maturities bonds of the sample countries selected are issued in different countries, all the relevant cash flows need to be swapped to EUR currency in order to compare the cost of capital of the sovereign debt for 3-month and 10-year maturities. All the cash flows were first swapped to EUR currency with the help of the *Bloomberg* system and then analysed. The analysis of 3-month and 10-year public bonds of Poland, Latvia, Hungary, Slovakia, Slovenia Bulgaria, Lithuania, and Romania indicates the difference in yields both in the short-term and long-term segment. The high volatility of short-term bond segment is stimulated by the low-interest-rate environment as well as the proximity to maturity.

The study of the *World Bank* (2004) states that the measurement of domestic bonds to total bonds outstanding indicates the capacity of the local market to provide capital. The ratio of domestic bonds to total bonds outstanding in the cluster observed fluctuates substantially reaching close to 75% level for Poland, Hungary, and Slovakia and followed by Slovenia at 60%. The strong position of the domestic debt observed is partially explained by the presence of the local currency, which stimulates the selection of the local instruments by the local investors. The study of the *World Bank* states that measurement of domestic private bonds to total domestic bonds outstanding indicates the degree of accessibility of the resources locally for the companies thus affecting their financing decision (The World Bank, 2004).

The study of the *World Bank* stressed the importance of the efficiency of the bond market stating that more than 130 countries had some form of organised bond market, but only 50 had become substantial in size (The World Bank, 2004). Despite the existing difference in both size and access area indicators observed before, the efficiency area metrics: bid-ask spread, quote size, and the number of the counterparties providing bid/ask quotes for the bonds, are comparatively similar for the sample observed. Latvia demonstrates the lowest bid-ask spread from all the six countries while sharing the average quote size and counterparties providing bid/ask quotes thus indicating the comparatively efficient market.

Stability is the last area of indicators provided by the comparative elements framework as developed by this research and FSDI. The stability area indicators are measured by 3 ratios: volatility of sovereign bonds, skewness of sovereign bonds, and ratio of short-term to total bonds (domestic). The study of the *World Bank* states that the stability of the bond market is influencing the cost of capital and thus the motivation of the investors to enter the market. (The World Bank, 2004).

This study analyses the stability of the cluster countries applying 3 groups of ratios: volatility, skewness, and maturity for the public bond segment only. Latvia demonstrates the highest level of the stability area indicators in the cluster observed with the comparatively low level of short-term bonds issues and presence of longer-term financing possibilities open for both sovereign and corporate segment in the country.

### **2.3. Effect of *Capital Markets Union* introduction to the corporate bond market in Latvia**

The studies of Tocolovska (2016, 2016c, 2016d and 2017) have revealed that comparing to the different peer clusters and benchmark countries the main lagging area of the development of the corporate bond market in Latvia is the size area. While the assessment of the size area is based on the combination of both sovereign and corporate bond market segments as related to GDP, the areas of international debt segment and corporate debt segment as related to GDP, are comparatively lagging. The research reveals that while the international segment gets a strong boost due to the international sovereign issues, the international corporate issues are missing. The actions as scheduled by the *CMU* and applicable to the development of the areas of the corporate bond segment and international debt segment (including corporate bonds) are cross-border securities trade and re-introduction of the securitisation practices.

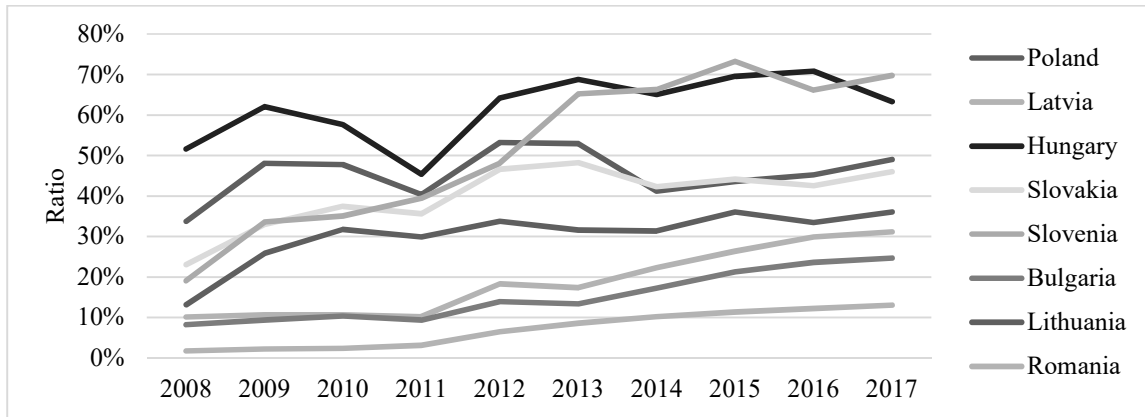


Figure 29. **Ratio of public sector debt to GDP for Bulgaria, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia, 2017, 2008-2017 (%)**

Source: Author's construction based on The World Bank Database and Bank for International Settlement data (2018).

While the international debt segment in line with the sovereign debt segment is showing a positive uptrend in the period of 2013 to 2017, the corporate debt segment is showing a very moderate positive trend, which is in line with the peer cluster trend (Figure 29- Figure 31).

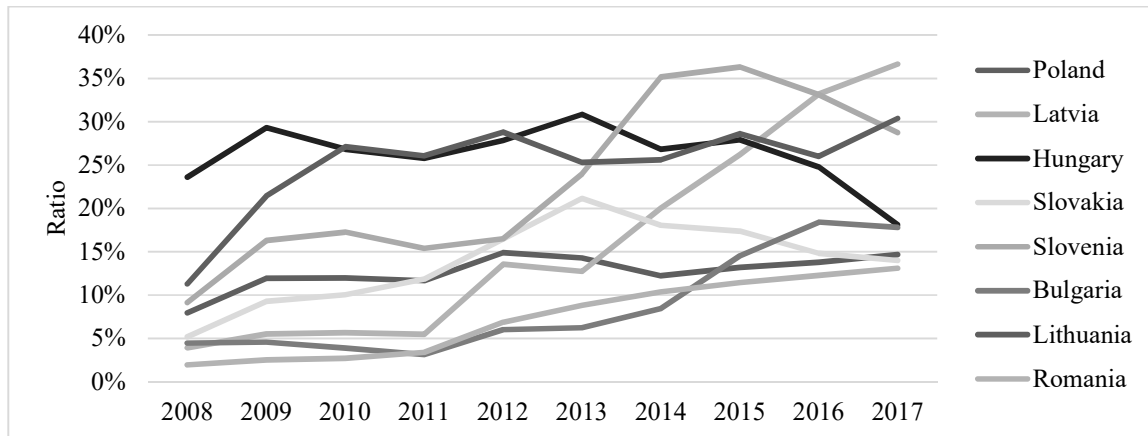


Figure 30. **Ratio of international debt to GDP for Bulgaria, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia, 2017, 2008-2017 (%)**

Source: Author's construction based on The World Bank, and Bank for International Settlement data (2018).

The analysis indicates the full dependence of the international debt of Latvia on the sovereign issues, thus indicating the limited access of the international investor base to Latvian corporate bond market.

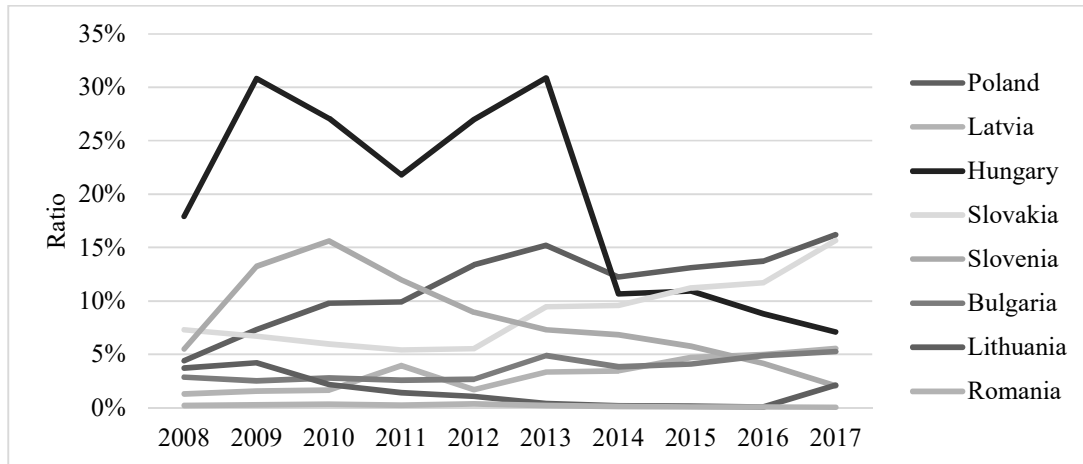


Figure 31. **Ratio of private sector debt to GDP for Bulgaria, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia, 2017, 2008-2017 (%)**

Source: Author's construction based on *The World Bank*, and *Bank for International Settlement data (2018)*.

While the weight of the corporate sector as related to GDP is growing, the faster tempo of issuing sovereign debt as oriented on the international markets reveals the sharp fall in the domestic market as related to total debt (Figure 32).

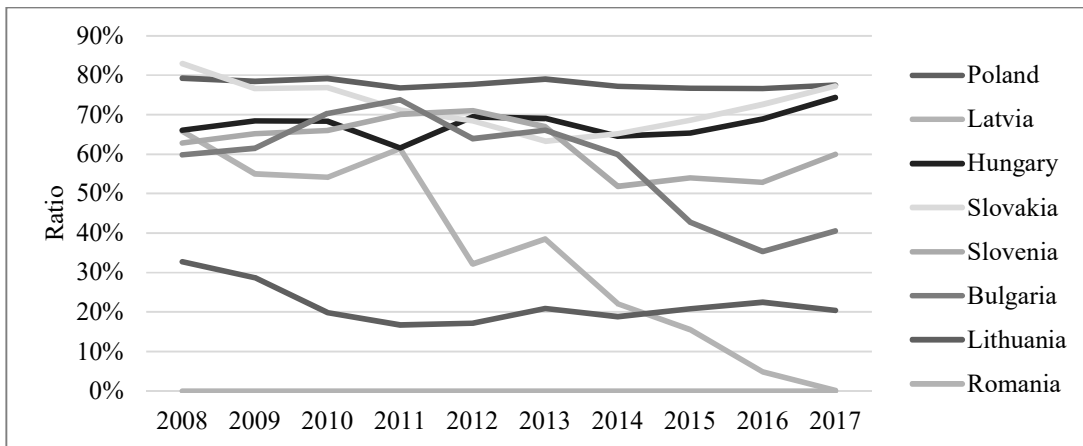


Figure 32. **Ratio of domestic total debt to total debt for Bulgaria, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia, 2017, 2008-2017 (%)**

Source: Author's construction based on *The World Bank Database* and *Bank for International Settlement data. (2018)*.

The cross-border securities trade in Latvian corporate bond segment is viable in order to stimulate the growth of international corporate debt. The cross-border securities trade initiative of the *CMU* actions expected in 2017 are: 1) targeted action on securities ownership rules and third-party effects of assignment of claims; 2) best practice and code of conduct for relief-at-source from withholding taxes procedures; 3) study on discriminatory tax obstacles to cross-border investment by pension funds and life insurers. The actions scheduled will potentially con-

tribute to cross-border investment in the corporate bond issues and the size increase of the Latvian corporate bond market.

The local corporate bond market in Latvia while being the home for 47 public issues, should increase in size in order to boost the comparative level of development of the corporate bond market in the country. The securitisation practices, as stimulated to be re-introduced by the *CMU* could further increase the scope of the corporate bond market in Latvia with the main stimulus on the FSI segment. The relevant actions as scheduled by the *European Commission* (2015a) for 2017 are: 1) map out existing local or national support and advisory capacities across the *EU* to promote best practices; 2) investigate how to develop or support pan-European information systems. According to the *European Commission* (2017b) data, the number of SMEs in 2015 in Latvia reached 99.81% being the same level as the *EU* average: 99.81%. The number of employees working in Latvian SMEs reached 78.96% or 12% above the *EU* average. The dynamics of the SME segment both on the number of the companies and number of people employed indicates the relatively increasing weight of the micro type of SMEs companies. The dynamics of companies registered in Latvia indicates the positive trend in both total number of the companies registered and SME sector, where the number of large companies stays stable and new companies are generated by the SME segment.

In order to compare Latvian SME sector dynamics to other of *EU* countries, the sample as selected by the study of *EY* and *TheCityUK* (2015) made for analysis of the *CMU* perspective for *EU* countries, is applied. The paper compares Latvia along with Germany, France, Italy, and Poland to make a representative picture of the *EU* economy. While the economies of different scope are selected, relative indicators: SME employees as the percentage of the total population and number of employees per SME, indicate the relatively high development of Latvian SME segment. On average, the sample of the countries selected employs 19% of its population by the SME segment, where Latvia indicates the highest percentage of 23% thus demonstrating the relatively high importance of SME segment for the country. The number of employees per SME of the sample is placed at 4.39 level, where Latvia employs 5.2 employees or second highest after Germany.

Latvian SME indicates the positive dynamics in its development when related to *EU* Member States where Latvia outperforms other *EU* Member State in annual Small Business Act for Europe Fact Sheet in the majority of the evaluation criteria including access to finance area.

The major improvement to access to finance indicator of Latvia has contributed the sharp decrease of rejected loans for SMEs. The statistical data for the year 2015 indicated that almost no SMEs signalled the rejected loan application by the bank, where in 2014 around 1/3 was rejected (European Commission, 2017c). Despite the very high progress of Latvia in solving access to finance issue for SMEs the high speed of the situation improvement should be challenged for its sustainability. Moreover, the more detailed exploration of the discouragement of 1/3 of the rejected loans application in 2014 to apply for a loan once again in 2015 or the approval of the loans after the repeated submission should be done. The results of *European Commission* Small Business Act (SBA) Fact Sheet indicated there was no obvious need for further stimulation of access to finance area for SMEs (European Commission, 2017c).

The annual report of the *European Commission* (2017c) has indicated the active involvement of Latvia in stimulating alternative financing to SME segment via public loan programmes, public guarantee schemes, microfinance measures, supporting venture capital, pre-seed and seed capital funds, creating a single development financial institution '*ALTUM*' and other non-financial support including counselling, training, mentoring. The results of the initiatives introduced could be related to the drop in loan rejected, and relation analysed. With its active stimulation of alternative financing to SME segment by Latvian authorities and decreasing lending dynamics, the country indicates its need and readiness for *CMU* introduction and thus further development of the alternative to bank financing.

While the securities market is not the first choice of financing for SMEs, the steps from both stimulating demand and supply should be made. Making SME awareness of securities market financing opportunities as well as increasing cross-border investor base are among the first steps. The research challenges the presence of retail investors as the demand base for corporate bonds. The supply side found to be skewed to the financial sector side. The need for more developed both demand (focus on retail investors) and supply side (focus on SMEs) are the main challenges. *European Commission* (2015) does schedule the actions on fostering retail investment such as making *EU* retail investment product markets assessment by 2018; still, this has limited application to the corporate bond segment.

The importance of retail investor participation, as well as cross-border investment by the institutional investors, is strengthened by raising age-expectance and deteriorating demographical situation in Europe thus raising the retirement age level and decreasing the state-guaranteed



pension scheme. The latter puts the pressure on the individual own investment of the money resources earned. Moreover, the *European Commission* (2015b) indicates that only 5% have direct investments in bonds and 10% in shares, while 11% own shares of a mutual fund and 33% are invested in a pension plan or life insurance while 96% of *EU* households have deposits with a bank. While corporate bonds could be a direct retirement investment by the retail sector, it lacks focus in the existing *CMU* action plan thus leaving institutional investor segment as the dominating one in corporate bond instruments.

### **3. Determinants of the development of the corporate bond market in Latvia**

The analytical study of the bond market in Latvia and its corporate segment detects the size of the corporate bond segment as one of the two weakest areas when compared to the three country samples- the factors influencing the amount of the corporate bonds outstanding in Latvia should be further analysed. This chapter presents the empirical study of the qualitative and quantitative factors of the corporate bond market in Latvia as the determinants of the development. Existing limitations in the availability of the historical dataset on the corporate bond segment in Latvia is present. The latter is justified by the lack of consistency of corporate bond issues in the period before the growth comprehended in 2013, where the mixture of occasional corporate bonds and mortgage bonds issued before 2013 was substituted by the abrupt solid activity of the FSIs. To get the credible and consistent data on the corporate bond market, the factors as identified in the theoretical study of this thesis (Table 5) were divided into quantitative factors and qualitative factors. For the study of the qualitative factors, a number of surveys and in-depth interviews was conducted both for the existing corporate bond issuers as well as the largest Latvian corporate companies as the potential corporate bond issuers (Nasdaq Baltic, 2017a). The quantitative factors were studied with the means of statistical tools.

#### **3.1. Quantitative factors: selection and analysis for the corporate bond market in Latvia**

The quantitative elements as identified by the theoretical study of this thesis (Table 5) are: country size and wealth, size of the sovereign bond market, size of the bond market, stable exchange rate, growth rates, secondary market turnover and transactions, interest rate volatility, global cyclical factors, international debt, stock market development, openness of the economy, investor base, assessment of the legal and regulatory framework. The elements are further measured by one or several factors. While the number of independent variables simultaneously influencing the dependent variable has been detected to be more than one, the need for the econometric method to analyse the influence of multiple variables on the dependent variable has been revealed, and multiple regression applied. Multiple regression provides two important results: an estimated linear equation that predicts the dependent variable, as the function of  $k$  observed independent variables  $x_j$ , where  $j=1, \dots, k$ ; and the marginal change in the dependent variable that

is related to the changes in the independent variables estimated by the coefficients  $b_i$ 's. (Newbold et al., 2007) The equation for  $k$  factors in the simplified form is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k + \varepsilon, \varepsilon \sim N(0, \sigma^2) \quad (1) \text{ (Hair et al. (2014) Baayen (2013), Pocs (2003))}$$

$$\text{or } \hat{X}_0 = a + b_1 x_1 + b_2 x_2 + \dots + b_k x_k \quad (2) \text{ (Krastins, 1998)}$$

In one multiple regression equation, one dependent and number of independent variables could be present. The practice of econometrics limits the number of independent variables as related to the number of the observations presented for analysis. Krastins (1998) pointed to the number of independent variables as 2-6 and rarely 8-10, where the bigger number of independent variables requires the bigger dataset, Шмойлова et al. (2000) indicated the number of factors should be 5-6 times less than the number of observations. The initial study of the dataset for the corporate bond market in Latvia indicated the presence of consistent historical data for the period 2010-2016. While the availability of 7 observations has been distinguished as insufficient for the multiple regression analysis with the number of factors exceeding 10, the need for the extended country sample was identified.

As the determinants of the development of the corporate bond market of a country should be identified, where the analytical study as performed in chapter two of this thesis has proved that Latvia shares the similar development with the country samples selected (two country groups with underdeveloped capital markets were previously selected), the need for a new country sample has been recognised. The Author has selected the country sample as made by the *Bank for International Settlement*, which characterised 31 country as developed: Australia, Austria, Belgium, Canada, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, New Zealand, Norway, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom, United States. The *Bank for International Settlement* divides all countries into three groups: developed, developing and offshore countries, providing quarterly data on the total debt securities, domestic debt securities and international debt securities of a country.

The dataset as prepared by the Author for the quantitative data analysis contained the debt securities data from the *Bank for International Settlement* database (dependent and independent variables of the regression), where the remaining factors were obtained from the *World Bank* database (independent variables of the regression). The data for all of the variables and

countries observed was present in the databases. The relative nature of the indicators was covered by analysing them as related to GDP; moreover, a logarithm of GDP indicator was introduced. Five out of six indexes grouped as Worldwide Governance Indicators by the *World Bank*, were selected due to their high relevance and comparable database for the selected sample: Control of Corruption (captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests), Government Effectiveness (captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies), Political Stability and Absence of Violence/Terrorism (measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism), Regulatory Quality (captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development) and Rule of Law (captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence) (World Bank Database, 2018). The Voice and Accountability index was omitted due to its high political rather than economic relevance for the analysis.

First, the dependency analysis was made with the aim to detect the independent variables with high collinearity, which would contribute little to regression (Mardia et al. (1982), Everitt and Dunn (2001)). The factors first were analysed for multicollinearity- the correlation matrix was constructed to verify the lack of a high correlation between the factors. The factors with exposed high correlation were extracted, the scatter diagram was constructed (STATA and SPSS software were applied). The highest correlation was observed for the Worldwide Governance Indicators thus each indicator was tested by separately adding it to the model. In the result, the significance and indexes of the variables have changed from the initial model thus signalling the presence of the multicollinearity. The correlation of the indexes is present; still, it is complex to detect, which index should be omitted from the model, where the better legal and political environment is signalling to have the negative influence on the corporate bond market. Two independent variables: lg of GDP per capita (PPP) and real GDP growth with positive 0.4363 correlation were separately added to the model both proving to be statistically significant with the

probability above 99%. As the result of adding each of the variables separately to the model, the significance and indexes of the variables have not changed extensively from the initial model thus signalling the absence of multicollinearity present. The choice of the linear regression as preferred to non-linear regression was established by the comparatively higher determination coefficient, higher statistical significance level of the regression coefficients and sounder interpretation of the model parameters. The period of the analysis selected was 2010-2016, the number of the observations 118 (not all of the countries contained all the observations). The parameters for the multiple regression are revealed by the ordinary least squares method, where the following minimization problem is solved:

$$Q_z = \sum_{i=1}^n (x_{0i} - \tilde{x}_{0i})^2 \rightarrow \min \quad (3) \text{ (Krastins, 1998)}$$

$Q_z$  - the residual or unexplained sum of the square residuals;

$x_{0i}$  - the actual value of observation  $i$  (in the sample);

$\tilde{x}_{0i}$  - the predicted value of the dependent variable of the observation  $i$  (in the sample);

$n$  - number of observations (in the sample).

The further steps are to substitute  $\tilde{x}_{0i}$  (4) by the right side of the regression equation (3), to provide the relevant partial derivatives for all the parameters  $a, b_1, b_2, \dots, b_k$ , equalise those to zero and unite to the system, where after the simplification of the normal equation system for calculating the parameters  $a, b_1, b_2, \dots, b_k$  of the multiple regression is:

$$\begin{cases} an + b_1 \sum x_1 + b_2 \sum x_2 + \dots + b_k \sum x_k = \sum x_0; \\ a \sum x_1 + b_1 \sum x_1^2 + b_2 \sum x_1 x_2 + \dots + b_k \sum x_1 x_k = \sum x_0 x_1; \\ a \sum x_2 + b_1 \sum x_1 x_2 + b_2 \sum x_2^2 + \dots + b_k \sum x_2 x_k = \sum x_0 x_2; \\ \dots; \\ a \sum x_k + b_1 \sum x_1 x_k + b_2 \sum x_2 x_k + \dots + b_k \sum x_k^2 = \sum x_0 x_k. \end{cases} \quad (4) \text{ (Krastins (1998), Rencher (2002))}$$

In order to shift from the normal equation system to the exact task, the values  $n; \square x_1; \square x_2; \dots; \square x_0 x_k$  are substituted by the cross-sums. The linear equation system is solved where the unknown values are  $a, b_1, b_2, \dots, b_k$ . The solution provides the value of  $a$  (constant of the regression model) and the values of the regression coefficients.

The regression was run for the country sample where the dependent variable was the amount of the corporate bonds outstanding, while the independent variables were the factors se-

lected by the theoretical analysis and identified to be quantitative for the corporate bond market in Latvia: country size and wealth, size of the sovereign bond market, size of the bond market, stable exchange rate, growth rates, secondary market turnover and transactions, interest rate volatility, global cyclical factors, international debt, stock market development, openness of the economy, investor base, assessment of the legal and regulatory framework (Table 18).

**Table 18. Results of the analysis of the regression equation parameters of the determinants of the corporate bonds market development**

Independent variables as included in the regression equation	Abbreviations of the independent variables as included in the regression equation	Dependent variables		
		Total amount of the corporate bonds outstanding, % of GDP	Total amount of international corporate bonds outstanding, % of GDP	Total amount of corporate bonds outstanding issued by the financial sector issuers, % of GDP
		Regression coefficients (the level of statistical significance is stated)		
1- lg of GDP per capita (PPP), %	GDP	8.525***	5.496***	8.080***
2- real GDP growth, %	GDP_GR	-21.036***	-15.203***	-20.944***
3- inflation, %	INFL			
4- stock turnover, % of GDP	EQ		-0.743**	
5- domestic savings, % of GDP	SAV	8.917**	9.046***	9.542***
6- government expenditures, % of GDP	GOV			
7- government bonds all, % of GDP	FI_GOV	-0.949**	-0.705**	-0.914*
8- government bonds international, % of GDP	FI_INT			
9 - control of corruption	CORR			
10 - government effectiveness	EFF			
11- political stability and absence of violence/terrorism	POL			
12- regulatory quality	REG	-281.509***	-124.574**	-264.523***
13 - rule of law	LAW			
		Constant of the regression equation		
		-	-	-
		8372.667***	5496.813***	-7938.207***
		Coefficient of determination R <sup>2</sup>		
		0.798	0.815	0.799
		Sample size n		
		118	118	118

Source: Author's construction based on The World Bank and Bank for International Settlement data (2018).

\*\*\* Coefficient is significant at the 0.99 level.

\*\* Coefficient is significant at the 0.95 level.

\* Coefficient is significant at the 0.90 level.

The stable exchange rate and interest rate volatility factors were omitted due to Latvia's membership in the *EU* and thus relatively weak relevance of those factors, while the secondary market turnover and transactions for the bond market were found in the theoretical chapter of

this thesis as inappropriate indicator for the analysis of the corporate bond market dynamics due to the lack of transparency of OTC market. Secondary market turnover and transactions, stable exchange rate and interest rate volatility factors will be further analysed in chapter 3.2. In the result of the regression analysis three models were constructed:

Total amount of the corporate bonds outstanding (% of GDP) =  $-8372.667 + 8.525 \cdot \text{GDP} - 21.036 \cdot \text{GDP\_GR} + 8.917 \cdot \text{SAV} - 0.949 \cdot \text{FI\_GOV} - 281.509 \cdot \text{REG}$ ,  $R^2=0.798$ ,  $n=118$ , or

$$y = -8372.667 + 8.525x_1 - 21.036x_2 + 8.917x_5 - 0.949x_7 - 281.509x_{12}; R^2=0.798, n=118,$$

where

y - total amount of the corporate bonds outstanding (% of GDP);

$x_1$  - lg of GDP per capita (PPP), %;

$x_2$  - real GDP growth, %;

$x_5$  - domestic savings, % of GDP;

$x_7$  - government bonds all, % of GDP;

$x_{12}$  - regulatory quality (the *World Bank* Regulatory Quality index);

$R^2$  – coefficient of determination;

n – sample size.

Total amount of international corporate bonds outstanding (% of GDP) =  $-5496.813 + 5.496 \cdot \text{GDP} - 15.203 \cdot \text{GDP\_GR} - 0.743 \cdot \text{EQ} + 9.046 \cdot \text{SAV} - 0.705 \cdot \text{FI\_GOV} - 124.574 \cdot \text{REG}$ ,  $R^2=0.815$ ,  $n=118$ , or

$$y = -5496.813 + 5.496x_1 - 15.203x_2 - 0.743x_4 + 9.046x_5 - 0.705x_7 - 124.574x_{12}; R^2=0.815,$$

$n=118$ , where

y - total amount of international corporate bonds outstanding (% of GDP);

$x_1$  - lg of GDP per capita (PPP), %;

$x_2$  - real GDP growth, %;

$x_4$  - stock turnover, % of GDP;

$x_5$  - domestic savings, % of GDP;

$x_7$  - government bonds all, % of GDP;

$x_{12}$  - regulatory quality (the *World Bank* Regulatory Quality index);

$R^2$  – coefficient of determination;

n – sample size.

Total amount of corporate bonds outstanding issued by the financial sector issuers (% of GDP) =  $-7938.207 + 8.080 \cdot \text{GDP} - 20.944 \cdot \text{GDP\_GR} + 9.542 \cdot \text{SAV} - 0.914 \cdot \text{FI\_GOV} - 264.523 \cdot \text{REG}$ ,  $R^2=0.798$ ,  $n=118$ , or

$$y = -7938.207 + 8.080x_1 - 20.944x_2 + 9.542x_5 - 0.914x_7 - 264.523x_{12}; R^2=0.798, n=118,$$

where

$y$  - total amount of corporate bonds outstanding issued by the financial sector issuers (% of GDP);

$x_1$  - lg of GDP per capita (PPP), %;

$x_2$  - real GDP growth, %;

$x_5$  - domestic savings, % of GDP;

$x_7$  - government bonds all, % of GDP;

$x_{12}$  - regulatory quality (the *World Bank* Regulatory Quality index);

$R^2$  – coefficient of determination;

$n$  – sample size.

All the models constructed are statistically significant with the probability above 90%, the determination coefficients are 79.8%, 81.5%, and 79.9% respectively. The second model demonstrates the highest level of explanation of the variability of the total amount of international corporate bonds outstanding as related to the factors i.e. 81.5%.

The results of the panel regression indicate that factors, which affect the issuance of the corporate bonds statistically significantly (with 99%, 95% and 90% probability) are GDP per capita, real GDP growth, amount of domestic savings, amount of government bonds outstanding and regulatory quality in the country. The GDP per capita and the amount of domestic savings outstanding positively influence the amount of the corporate bonds outstanding. In contrast, real GDP growth, amount of government bonds outstanding and regulatory quality are found to influence the amount of the corporate bonds outstanding negatively. This negative relation is controversial to the number of the academic studies as covered in the theoretical part of this thesis- the positive relationship between the presence of the government bonds as the benchmark for pricing and issuing corporate bond is traditionally established by the academics. The Author explains the negative influence of the regulatory quality on the amount of the corporate bonds outstanding by the “overregulation” effect as converting the positive transparency of the market into the heavy burden to the issuers of the securities. The relation will be further explored in part 3.2.



Two additional dependent variables were tested for the determinants influencing the amount of the corporate bonds outstanding- the amount of international corporate bonds outstanding and the amount of the corporate bond issues as done by the financial sector issuers. The need for both variables is determined by the present situation in the corporate bond market in Latvia: there are no international corporate bonds outstanding while 85% of the domestic corporate debt is issued by the FSIs. The determinants of the development for both groups are identified to be: 1) for the FSI segment the same determinants as for the total corporate bonds segment 2) for the international corporate bond segment inverse influence of the stock turnover factor as influencing factor is identified. The latter signals the substitute role of bond and stock market while having limited application for the corporate bond market in Latvia- whilst the stock market is comparatively weak, the international corporate bond market is non-existent. The stock market factor influence should be further analysed in part 3.2.

Regression analysis has demonstrated the influence of the following factors on the amount of the corporate bonds outstanding: GDP per capita, amount of domestic savings, real GDP growth, amount of government bonds as the share of GDP and regulatory quality. The factors should be included in the Corporate Bond Market Development model and further complemented by the results of the qualitative factor analysis as performed in part 3.2.

### **3.2. Qualitative factors: selection and analysis for the corporate bond market in Latvia**

The qualitative factors as identified by the theoretical study of this thesis (Table 5) are: investor and issuer base, market infrastructure, tax treatment of bonds, primary issuance method, information disclosure, internationally recognised accounting standards, information and communication technologies, active market makers (dealers), lending to SME segment, foreign ownership of the banks, quoted bid-ask spreads (10-yr government bond yield), presence of a benchmark yield curve, maturity structure of government bonds, efficient 'REPO' market, cross-country electronic connection, presence of the credit rating agencies. The analysis of the quantitative factors detected the further need for exploration of secondary market turnover and transactions, stable exchange rate, interest rate volatility, regulatory quality and stock market development factors. The qualitative factors identified have fragmented and incomplete secondary data record for Latvia thus should be complemented by the primary data collected. The methods of survey and in-depth interviews were selected by the Author as the means of collection of the

primary data. The uneven development of the corporate bond market in Latvia: in the pre-financial crisis 2008-2013 the mortgage bonds were actively issued and traded being fully replaced by the corporate bonds in the period 2013-2017; creates the need for the further limitation while conducting the surveys. In order to identify the basis of the outstanding growth of the Latvian corporate bond market in the period 2013-2017, the issuers were limited to the financial sector issuers of corporate bonds. The latter forms 85% of the corporate bonds issued (Nasdaq Baltic, 2017). As there is no evidence detected by the Author on the presence of the active market makers (dealers), efficient ‘REPO’ market and credit rating agencies in Latvia, the factors were grouped for market infrastructure section of the surveys.

### 3.2.1. FSIs of the corporate bonds in Latvia

The primary data analysed in this section has been obtained via in-depth interviews and surveys to FSI sector run in the period June-August 2017 where the participation rate reached 90% and 70% from the total number of the FSI of the corporate bonds respectively (Table 19).

Table 19. **FSI segment participation in the survey: “Corporate Bonds in Latvia: Factors that affect Financial Sector Issuers” in 2017**

<i>FSI</i>	<i>Participation in survey</i>	<i>Participation in interview</i>
ABLV Bank	yes	yes
AgroCredit Latvia	yes	yes
Capitalia	yes	yes
Citadele banka	yes	yes
ExpressCredit	yes	yes
Moda Kapitāls	yes	no
Mogo	yes	no
Reverta	no	no
Rietumu Banka	yes	yes
VIA SMS group	yes	yes

Source: Author’s construction based on Author’s conducted survey in June- August 2017.

No similar analysis of the corporate bond market in Latvia and its FSI segment has been made before. Questionnaires for expert survey and interview questions were tested on the sample group. In the result of the test, content change and rephrasing to 4 out of 20 questionnaire questions and 5 out of 18 interview questions took place (Tocelovska and Sloka, 2017). After the personal invitation to experts to participate in an expert survey and their acceptance, the questionnaire was sent to the respondents on June 19, 2017, with a weekly reminder.

One of the questionnaires was fully translated into Latvian as requested by the company. Both English original and translated into Latvian versions were sent to the respective FSI. In-depth interviews process took place in the period June 27- August 3, 2017, in English, Latvian or Russian depending on the preferences of the interviewee. All interviews were recorded and transcribed.

The results of the survey indicate the growing recognition of corporate bond market by Latvian FSIs and increasing switch from bank financing where the main incentives are reputation, strategical factors and the cost of funding in the long-term. Tables 20 and 21 represent the summary of the descriptive statistics of questions: “My company when in need for additional funding chooses: borrowing from the group company; borrowing outside the group company (bank borrowing); equity funding; issuing bonds; organising initial public offering (IPO)” and question: “In my company the main motivation to issue bonds for a company is: cost of funding in the long-term (more than 3 years); cost of funding in the short-term (less than 3 years); cost of issue (documentation, issue organiser, etc.); cost of market entrance (registration fees, listing fees, etc.); demand from investors; lack of funding alternative; level of competence in bond issue process by the reasonable people in my company; regulatory policies; reputation a company gets as the result of bond issue (publicity, regular meetings for the issuers, etc.); strategical ambition to be present in the public market of the survey “Corporate Bonds in Latvia: Factors that affect Financial Sector Issuers” conducted in June- August 2017. One of the investigated questions analysed the selection of funding source when in need for additional resources, and the other analysed the factors, which acted as motivation to issues bonds for the company represented by the respondent.

Traditionally treated as the bank-based country, Latvian corporate funding has perceived the stable progress in the bank loans provided to the corporate segment with its persistent growth of the newly granted corporate loans dynamics in the period of 2014-2016 and the modest slow-down expected for 2017 (Tocelovska and Sloka, 2017a).

Positive Latvian bank lending dynamics and the perceived availability of the bank borrowing for FSI segment is not supported by the results of the expert survey. As revealed by the analysis, the choice of funding for Latvian FSIs when in need of additional funding is strongly dominated by issuing bonds followed by equity funding alternative (Table 20).

**Table 20. Main statistical indicators of expert evaluations on FSI choice for funding source in the survey: “Corporate Bonds in Latvia: Factors that affect Financial Sector Issuers” in 2017**

	<i>Arithmetic mean</i>	<i>Standard Error of Mean</i>	<i>Median</i>	<i>Mode</i>	<i>Standard deviation</i>	<i>Variance</i>	<i>Range</i>	<i>Minimum</i>	<i>Maximum</i>
<i>borrowing from the group company</i>	5.5	1.018	5.5	5 and 8	2.878	8.286	8	1	9
<i>borrowing outside the group company (bank borrowing)</i>	5.11	0.949	5	3	2.848	8.111	8	1	9
<i>equity funding</i>	5.75	0.701	6.5	7	1.982	3.929	6	2	8
<i>issuing bonds</i>	8.11	0.351	8	9	1.054	1.111	3	6	9
<i>organising initial public offering (IPO)</i>	3.13	0.639	3	1 and 3	1.808	3.268	5	1	6

*Source: Author’s construction based on Author’s conducted survey in June- August 2017. Evaluation scale 1 – 10, where 1- strongly disagree; 10 – strongly agree*

Expert views on issuing bonds were homogeneous – the lowest evaluation was 6 and the highest evaluation was 9 with mode 9 (the most often chosen evaluation by the experts) and median 8 (half of the experts gave evaluation 8 or less, and half of the experts gave evaluation 8 and 9), arithmetic mean of the expert evaluations was 8.11 with standard deviation 1.05). IPO as the alternative equity funding was commented by one of the respondents to be currently an irrational step due to the high profitability of the FSI segment. Borrowing from the group is treated in a diverse way with two modes of the range and very broad range of the responses - both indicating the split of the opinions. Borrowing outside the group company is not estimated by the FSI segment as important or needed. The additional comments on the situation as provided during the in-depth interviews pointed on limited real alternative existing to the bond issuance. Bank lending was pointed to exist on the modest scope, where one of the respondents indicated that only two banks were willing to provide funding for the FSI segment.

Moreover, the recent financial crisis of 2008-2013 tested the uneven presence of funding. 40% of the respondents mentioned peer-to-peer (P2P) platforms among the main alternative outstanding. While realising the favourable dynamics of the P2P funding, which “acts as the credit line”, the respondents noted that P2P could not be the main source due to the strong dependence on one source as well as the unwillingness to shift the whole balance sheet to P2P. While frequently mentioned and discussed during the in-depth interviews, the “lack of funding alternative” factor was not supported by the descriptive analysis of the FSI sector motivation to issue

corporate bonds in the survey- the factor was mentioned as the fifth most important out of ten analysed. The results of the survey indicate that the main motivating factors for Latvian FSIs as approaching the corporate bond market are: reputation a company gets as the result of bond issue (publicity, regular meetings for the issuers, etc.), strategical ambition to be present in the public market and cost of funding in the long-term (more than 3 years) (Table 21). The dominance of the factors is strengthened by the low standard deviation indicator as well as comparatively narrow range.

**Table 21. Main statistical indicators of experts evaluations on FSI motivation to issue corporate bonds in the survey: “Corporate Bonds in Latvia: Factors that affect Financial Sector Issuers” in 2017**

<i>Motivating factors</i>	<i>Arithmetical mean</i>	<i>Standard Error of Mean</i>	<i>Median</i>	<i>Mode</i>	<i>Standard deviation</i>	<i>Variance</i>	<i>Range</i>	<i>Minimum</i>	<i>Maximum</i>
<i>cost of funding in the long-term (more than 3 years)</i>	7.44	0.556	8	9	1.667	2.778	5	4	9
<i>cost of funding in the short-term (less than 3 years)</i>	6.5	0.598	6	6	1.69	2.857	5	4	9
<i>cost of issue (documentation, issue organiser, etc.)</i>	6	0.726	7	8	2.179	4.75	6	2	8
<i>cost of market entrance (registration fees, listing fees, etc.)</i>	5.67	0.687	6	4 and 7	2.062	4.25	6	2	8
<i>demand from investors</i>	6.78	0.662	8	8	1.986	3.944	6	3	9
<i>lack of funding alternative</i>	6.56	0.729	7	6 and 7	2.186	4.778	7	2	9
<i>level of competence in bond issue process by the reasonable people in my company</i>	5.56	1.002	7	1 and 7	3.005	9.028	8	1	9
<i>regulatory policies</i>	6	0.645	7	7	1.936	3.75	5	3	8
<i>reputation a company gets as the result of bond issue (publicity, regular meetings for the issuers, etc.)</i>	8.11	0.2	8	8	0.601	0.361	2	7	9
<i>strategical ambition to be present in the public market</i>	7.56	0.444	8	8	1.333	1.778	4	5	9

Source: Author's construction based on Author's conducted survey in June- August 2017. Evaluation scale 1 – 10, where 1- strongly disagree; 10 – strongly agree

The cost of funding while mentioned among the key motivating factors was stressed by one of the interviewees to exceed almost two times the bank funding cost, where another comment was the necessity to provide the pledge to the bank and inability of the bank to reasonably analyse the pledge. The information as gathered during the in-depth interviews broadened the

reputation factor by complementing such factors as the desire for transparency as the stimulating factor for new and potential investors and the interpretation of the exchange-listed bonds as the bond repayment guarantee from the investor side. While the main motivating factors: reputation, strategical factor and the long-term cost of funding are revealed to be the primary drivers for Latvian FSIs to attract public debt financing, the elements influencing the main motivating factors need to be identified (Table 22).

**Table 22. Correlation of the FSI motivation factors to issue corporate bonds in the survey: “Corporate Bonds in Latvia: Factors that affect Financial Sector Issuers” in 2017**

		<i>cost of market entrance (registration fees, listing fees, etc.)</i>	<i>level of competence in bond issue process by the reasonable people in my company</i>	<i>strategical ambition to be present in the public market</i>
<i>cost of funding in the long-term (more than 3 years)</i>	Pearson Correlation	0.521	0.618	0.831**
	Sig. (2-tailed)	0.15	0.076	0.005
	n	9	9	9
<i>cost of funding in the short-term (less than 3 years)</i>	Pearson Correlation	0.277	0.762*	0.39
	Sig. (2-tailed)	0.507	0.028	0.339
	n	8	8	8
<i>cost of issue (documentation, issue organiser, etc.)</i>	Pearson Correlation	0.890**	0.63	0.731*
	Sig. (2-tailed)	0.001	0.069	0.025
	n	9	9	9
<i>cost of market entrance (registration fees, listing fees, etc.)</i>	Pearson Correlation	1	0.700*	0.576
	Sig. (2-tailed)		0.036	0.105
	n	9	9	9
<i>level of competence in bond issue process by the reasonable people in my company</i>	Pearson Correlation	0.700*	1	0.725*
	Sig. (2-tailed)	0.036		0.027
	n	9	9	9

Source: Author's construction based on Author's conducted survey in June- August 2017.

Evaluation scale 1 – 10, where 1- strongly disagree; 10 – strongly agree

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

The correlation analysis observes the statistically significant correlation with relevant significance level between the strategical ambition to be present in the public market and: cost of funding in the long-term (more than 3 years), cost of issue (documentation, issue organiser, etc.) and level of competence in bond issue process by the reasonable people in the company. Additionally, the cost of issue (documentation, issue organiser, etc.) is statistically significantly corre-

lated with the cost of market entrance (registration fees, listing fees, etc.), while the level of competence in bond issue process by the reasonable people in the company with the cost of funding in the short-term (less than 3 years) and cost of market entrance (registration fees, listing fees, etc.). In the result, four indirect factors are identified to influence the choice of Latvian FSIs for corporate debt market.

During the in-depth interviews, taxation was mention among the central motivating factors. All of the respondents stressed the importance of taxation factor for the choice of funding source, and while expressing their concern about the issue, the treatment of taxation as a negative factor in corporate bond issuance was not supported by the survey. Table 23-25 represent the summary of the descriptive statistics for the questions: “In my country government policies support as the first choice of funding: bank borrowing; equity funding; initial public offering (IPO); issuing bonds”; and question: “In my country taxes: are applied to companies in a consistent way; are applied to companies in a predictable way; influence the choice for funding of a company; support bank borrowing as the choice of funding by a company; support equity funding as the choice of funding by a company; support initial public offering (IPO) as the choice of funding by a company; support issuing bonds as the choice of funding by a company”.

**Table 23. Main statistical indicators of expert evaluations on FSI treatment of government policies as the motivation of funding source in the survey: “Corporate Bonds in Latvia: Factors that affect Financial Sector Issuers” in 2017**

	<i>Arithmetic mean</i>	<i>Median</i>	<i>Mode</i>	<i>Standard Deviation</i>	<i>Variance</i>	<i>Range</i>	<i>Minimum</i>	<i>Maximum</i>
<i>bank borrowing</i>	8	8.5	5, 8, 9, and 10	2	4	5	5	10
<i>equity funding</i>	6	5.5	4 and 5	1.852	3.429	5	4	9
<i>initial public offering (IPO)</i>	5.5	5	4 and 5	1.927	3.714	5	4	9
<i>issuing bonds</i>	7.38	7.5	9	1.598	2.554	4	5	9

*Source: Author’s construction based on Author’s conducted survey in June- August 2017. Evaluation scale 1 – 10, where 1- strongly disagree; 10 – strongly agree*

While bank borrowing is recognised as the most supported source of funding by Latvian government policies, tightly followed by corporate bond issuance, the wide range of responses (it means that the views of experts are different on those analysed aspects) and comparatively high standard deviation for all four of funding sources lack to provide the strong opinion but the general pattern. The closer study on the distribution of the opinions of the respondents represents the relatively homogeneous spread of opinions about bank borrowing skewed to the right (Table 24).

**Table 24. Distribution of expert evaluations on FSI treatment of government policies as the motivation of bank borrowing and issuing bonds funding source in the survey: “Corporate Bonds in Latvia: Factors that affect Financial Sector Issuers” in 2017**

		<i>Bank borrowing</i>		<i>Issuing bonds</i>	
		Percent	Valid Percent	Percent	Valid Percent
<i>Valid</i>	5	22.2	25	11.1	12.5
	6	0	0	22.2	25
	7	0	0	11.1	12.5
	8	22.2	25	11.1	12.5
	9	22.2	25	33.3	37.5
	10	22.2	25	0	0
	Total	88.9	100	88.9	100
<i>Missing</i>	System	11.1		11.1	

Source: Author’s construction based on Author’s conducted survey in June- August 2017.  
Evaluation scale 1 – 10, where 1- strongly disagree; 10 – strongly agree

The correlation analysis observes the statistically significant correlation with relevant significance level between issuing bonds and equity funding in the treatment of government policies as stimulating different sources of funding (Table 25). While indicating the diverse opinions on government policies as supporting bond issuance and less supporting for equity funding, the correlation analysis reveals the linkage between both.

**Table 25. Correlation of motivation factors of funding source as stimulated by the government policies in the survey: “Corporate Bonds in Latvia: Factors that affect Financial Sector Issuers” in 2017**

	<i>Equity funding</i>	
	Pearson correlation coefficient	Sig. (2-tailed)
<i>bank borrowing</i>	0.54	0.167
<i>initial public offering (IPO)</i>	0.44	0.275
<i>issuing bonds</i>	0.772*	0.025

Source: Author’s construction based on Author’s conducted survey in June- August 2017.  
Evaluation scale 1 – 10, where 1- strongly disagree; 10 – strongly agree

\* Correlation is significant at the 0.05 level (2-tailed).

The positive treatment of taxation in regards to the corporate bond issuance and bank borrowing is further supported by descriptive statistics as represented in Table 26, where the top mean scores of 7.33 and 7.78 are supported by the mode values of 9 and 10 respectively. The overall role of the taxation is considered to influence the choice for funding of a company (mean is 7.44 and mode 9), while the consistency and predictability of taxation are treated in a more dubious way with means being 5.33 and 4.33 respectively. The taxation lacks the homogeneous



perception by the respondents as the range of the responses is 4-6 wide, where standard deviation is comparatively lower for only two statements observed: taxation influences the choice for funding of a company and supports issuing bonds as the choice of funding by a company; thus indicating comparatively more homogeneous answers as provided by the respondents.

**Table 26. Main statistical indicators of expert evaluations on FSI treatment of Latvian taxation system in regards to different funding sources in the survey: “Corporate Bonds in Latvia: Factors that affect Financial Sector Issuers” in 2017**

	<i>Arithmetic mean</i>	<i>Median</i>	<i>Mode</i>	<i>Standard Deviation</i>	<i>Variance</i>	<i>Range</i>	<i>Minimum</i>	<i>Maximum</i>
<i>are applied to companies in a consistent way</i>	5.33	6	3	2.12	4.50	5	3	8
<i>are applied to companies in a predictable way</i>	4.33	5	5	2.00	4.00	6	2	8
<i>influence the choice for funding of a company</i>	7.44	8	9	1.74	3.03	4	5	9
<i>support bank borrowing as the choice of funding by a company</i>	7.78	8	10	2.11	4.44	5	5	10
<i>support equity funding as the choice of funding by a company</i>	6.11	6	8	1.69	2.86	4	4	8
<i>support initial public offering (IPO) as the choice of funding by a company</i>	6	5.5	4	2.07	4.29	5	4	9
<i>support issuing bonds as the choice of funding by a company</i>	7.33	8	9	1.66	2.75	4	5	9

*Source: Author’s construction based on Author’s conducted survey in June- August 2017  
Evaluation scale 1 – 10, where 1- strongly disagree; 10 – strongly agree.*

The correlation analysis observes the statistically significant correlation with relevant significance level between issuing bonds and equity funding, and IPO funding thus indicating the relationship of taxation to both market-based funding sources. Moreover, the correlation between both “influence the choice for funding of a company” and “support issuing bonds as the choice of funding by a company” is discovered (Table 27).

**Table 27. Correlation of expert evaluations on FSI treatment of Latvian taxation system in regards to different funding sources in the survey: “Corporate Bonds in Latvia: Factors that affect Financial Sector Issuers” in 2017**

		<i>are applied to companies in a predictable way</i>	<i>support initial public offering (IPO) as the choice of funding by a company</i>	<i>support issuing bonds as the choice of funding by a company</i>
<i>are applied to companies in a consistent way</i>	Pearson Correlation	0.913**	0.376	0.249
	Sig. (2-tailed)	0.001	0.359	0.519
<i>influence the choice for funding of a company</i>	Pearson Correlation	-0.227	0.447	0.679*
	Sig. (2-tailed)	0.556	0.267	0.044
<i>support equity funding as the choice of funding by a company</i>	Pearson Correlation	0.209	0.954**	0.876**
	Sig. (2-tailed)	0.589	0	0.002
<i>support issuing bonds as the choice of funding by a company</i>	Pearson Correlation	0.038	0.781*	1
	Sig. (2-tailed)	0.923	0.022	

Source: Author’s construction based on Author’s conducted survey in June- August 2017.

Evaluation scale 1 – 10, where 1- strongly disagree; 10 – strongly agree

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

The analysis of the interviews revealed the strong recognition of the existing taxation, stressing it was not getting the reasonable promotion. The drawback of the taxation as mentioned during the interviews was the fact that the tax-waiver was received only in the case of public issue, where the private placement and alternative financing should be recognised and treated in an equal way.

All of the respondents when answering the question: “Which regulations encourage corporate bond issuing? (please state them in the order of importance where first is the most important and last is the least important)”, mentioned EIT as the first choice. While all of the respondents were aware of the upcoming changes in the EIT methodology, only one of the respondents was commenting on it mentioning that the taxation gain on the bond issuing process will disappear. While the topic of the upcoming EIT changes was touched to the minor extent by the interviews, the timing of the interviews: June-August 2017 could serve as an explanation- the new Law on Enterprise Income Tax was decided on 28.07.2017 thus during the period of the interviews few details were known and understood by the interviewees (Law on Enterprise Income Tax, 2017). The considerable role of taxation as the stimulus of corporate bond issuance

should be further analysed for its perception by the issuers after the new Law on Enterprise Income Tax comes into force and used in practice.

### **3.2.2. Non-FSIs of corporate bonds in Latvia**

The results of the trends and factors as identified by the FSI analysis do not fully support the findings of the survey “Corporate bonds: Factors that Affect the Issuance in Latvia” conducted in 2012 to existing and potential corporate bond issuers as selected by the company size. The survey by the means of an online questionnaire in [www.visidati.lv](http://www.visidati.lv) was sent electronically to Latvia top 90 companies as selected by the annual turnover results (Lursoft, 2012) and Latvia top 10 banks (Latvian Commercial Bank Association, 2012) with the semi-weekly reminder. The respondents of the survey were identified by the test interviews in 3 companies. In the result of the test interviews the following target respondents were identified: 1) for non-banks: Chief Financial Officers (CFO) or Chief Accountants (if CFO position was absent in a company); 2) for banks: CFO or Head of Treasury (depending on the responsibilities on funding of the company). The survey was carried out in September 2012 with a 47% response rate. The latter can be considered representative for the corporate sector in Latvia where only 138 companies exceeded EUR 28 million annual turnover indicator (Lursoft, 2012).

The survey consisted of 4 sections: 1) funding (questions 1-5), 2) debt funding (questions 6-9), 3) issuing bonds (questions 10-13), demographic factors and company background (questions 15-20). The survey was built using the Likert scale and required the respondents to specify their level of agreement or disagreement on a symmetric agree-disagree scale for a series of statements to capture the level of agreement or disagreement towards a statement (Likert, 1932). A Likert survey often has a 5 or 7 point scale wherein a statement can be rated, with the middle one being neutral and a balanced number of positive and negative statements. The Likert method was chosen due to: 1) it's wide presence as the survey method in the Latvian market - the respondents were likely to have encountered it before; 2) it gave variety in responses and enabled scaling which was important as the survey was to be administered online and respondents could not ask clarifying questions; the survey had to offer all the possible answers the respondents could have. The 5-point scale was used in the survey where the respondents could choose: strongly disagree, disagree, neither agree nor disagree, agree, strongly agree. To ensure all options were captured the respondents could also choose the following two options: do not know, not applicable.

The survey was pilot tested on five people and, in the result, the wording of the majority of the questions and answers was changed for shorter and more condensed version, question 12 was rephrased for better readability, question 14: “Comments you want to add to the answers” was added for the respondents to provide comments. Respondents were guaranteed confidentiality, which increased the potential participation by not creating the direct link between the respondent and the opinion, as well as enabled public companies to participate. The participation of the public companies and their view on funding including bond issuance if done non-anonymously should have been reported to *Nasdaq Riga*. The anonymous basis of the survey enabled participation of the companies listed on *Nasdaq Baltic* to provide their input without disclosing the information publically.

The results obtained in the survey are subject to a number of limitations: a) respondents are treated as potential issuers, however, some companies are prohibited from issuing securities: e.g. several state-owned companies or companies with foreign ownership, where the financial decisions are centralised and made outside of Latvia (no public information or information disclosure is provided by the company); b) respondents are assumed to reflect the opinion of their company where the subjective perspective of the respondent could dominate; c) the surveyed companies may not necessarily reflect the general trends in Latvia. To verify the dependence of the source of financing in the company on gender, age, and education background of the CFO or chief accountant of the company, the demographic questions were included in the survey. The results indicated the dominance of 30 to 40-year-old males (Table 28, Figure 33).

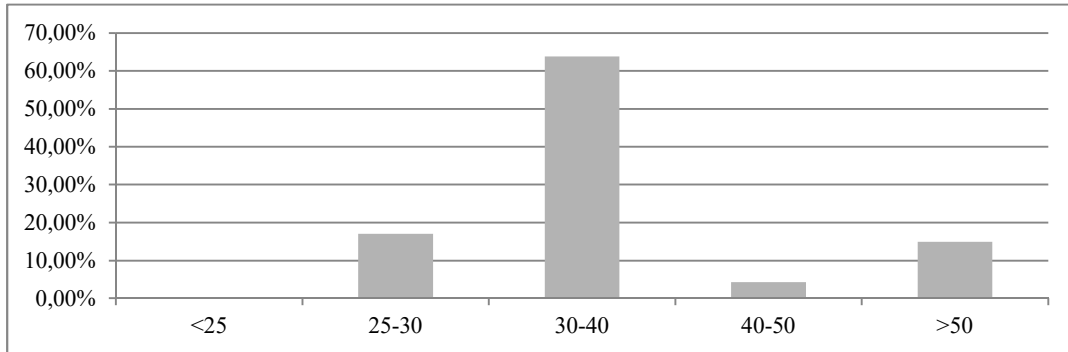
**Table 28. Distribution of respondents by gender in the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” in 2012**

Gender	Frequency	Percent
Male	33	70.21%
Female	14	29.79%
<b>Total</b>	<b>47</b>	<b>100.00%</b>

*Source: Author’s construction based on the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” conducted in August- October 2012.*

The age factor was important due to the risk appetite implications where older people represent a more conservative approach. When choosing between bank financing and its more risky alternatives, the older respondents are anticipated to prefer for a more conservative bank financing. The relationship between lower risk preferences and aging has been proved by Mather et al. (2012) and Wang and Hanna (1997). The results of the survey indicate the comparatively

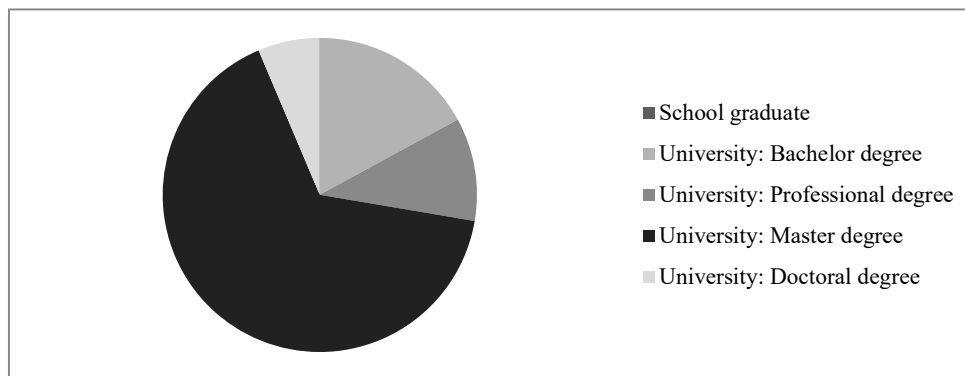
young profile of the decision making persons, thus suggesting high risk appetite component as expected to be included in the choice of funding.



**Figure 33. Distribution of respondents by age group in the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” in 2012**

*Source: Author’s construction based on the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” conducted in August- October 2012.*

Education of the respondents as representing their theoretical knowledge background of various financing methods of the company was questioned. The analysis of the education background reveals that while all the respondents hold a university degree, 66% have a master degree. The latter is explained by the Author as related to the comparatively young 30-40-year-old age group as a mode of the sample of the respondents - in order to get the CFO or chief accountant position, high skills supported by the reasonable education are needed (Figure 34).



**Figure 34. Distribution of respondents by education level in the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” in 2012**

*Source: Author’s construction based on the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” conducted in August- October 2012.*

Representation of the various industries is important to get a grasp on the whole economy and decrease the bias of one industry. The respondents of the survey represent energy sector

(21.28%), retail business (14.89%), constructions and banking and finance (both 8.51%) where the rest gets weight below 8% (Table 29). High activity of energy sector representatives was explained by the fact that 8 out of top 20 companies by the turnover indicator in 2011 in Latvia represented energy sector. The scope of those companies, their high orientation on the retail sector, high reputation risks and established corporate communication practices make them more active as participants in the academic studies. 31.91% of the respondents did not identify themselves with any of the industry sector provided in the questionnaire.

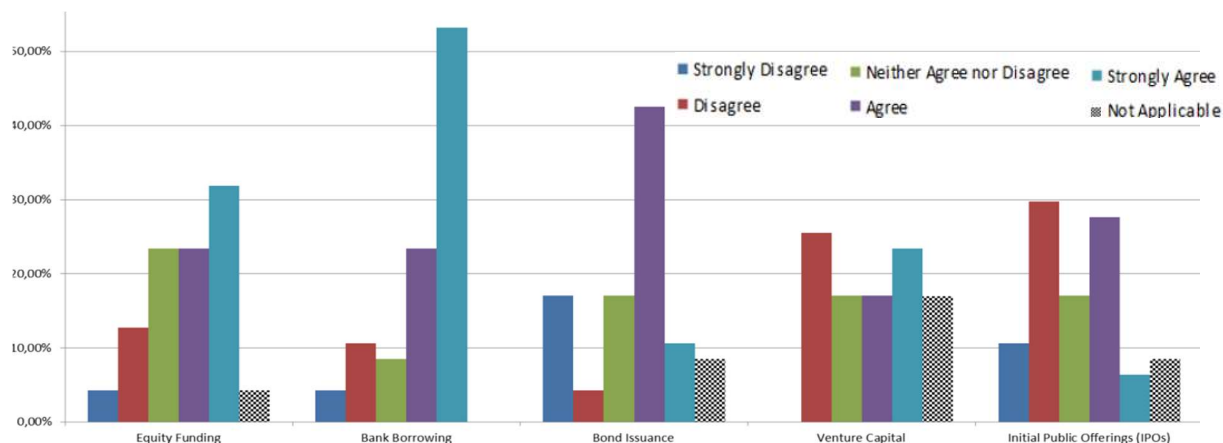
**Table 29. Distribution of respondents by industry in the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” in 2012**

<b>Industry</b>	<b>Frequency</b>	<b>Share in Percent (%)</b>
Energy	10	21.28
Infrastructure	1	2.13
Retail business	7	14.89
Wholesale business	2	4.26
Constructions	4	8.51
Real estate	0	0.00
Telecommunications	2	4.26
Healthcare & Medical care	2	4.26
Banking & Finance	4	8.51
Other	15	31.91
<b>Total</b>	<b>47</b>	<b>100.00</b>

*Source: Author’s construction based on the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” conducted in August- October 2012.*

When asked about the source of funding as available for the companies, the respondents of the survey have indicated bank borrowing: 77% agreed a little or agreed a lot on this statement. Availability of own equity funding even though reaching positive response of more than 50% of the respondents, provides more even spread of opinions between “neither agree nor disagree”, “agree” and “strongly agree”. The availability of funding via corporate bond issuance was indicated by 42% of the respondents where the rest (except 11% who strongly agreed with the statement) indicated negative or neutral opinion. The view on another alternative to banking funding source: venture capital and IPO, was treated more negatively, where the response pattern of funding via IPO was mirroring bond issuance to the major extent (Figure 35).

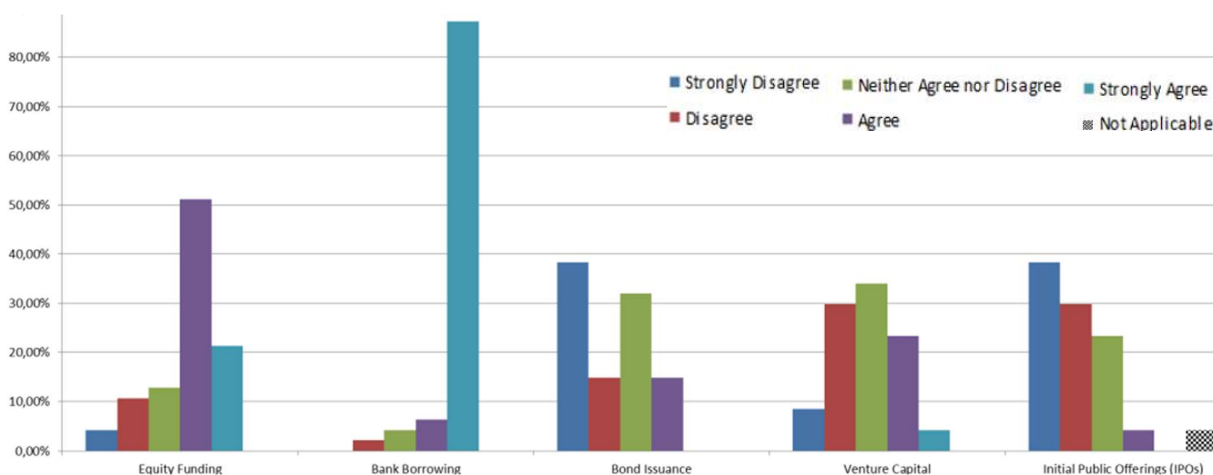
The vast majority of the surveyed companies “agreed” or “strongly agreed” that bank borrowing and to a lesser degree shareholders’ equity funding was the preferred choice of funding. Preferences for shareholders’ equity and bank financing supported the theoretical findings of this research, which pointed to the bank-based funding dominating in Europe (including Latvia).



**Figure 35. Distribution of responses on the availability of funding in the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” in 2012**

Source: Author’s construction based on the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” conducted in August- October 2012.

Moreover, when asked about their choice for additional funding- the bank borrowing as the first choice (87% agreed a lot) further indicated high activity in the banking sector and present high-level utilisation of shareholders’ capital where 51% of respondents agreeing a little on choosing own equity to finance a new project in the company (Figure 36).

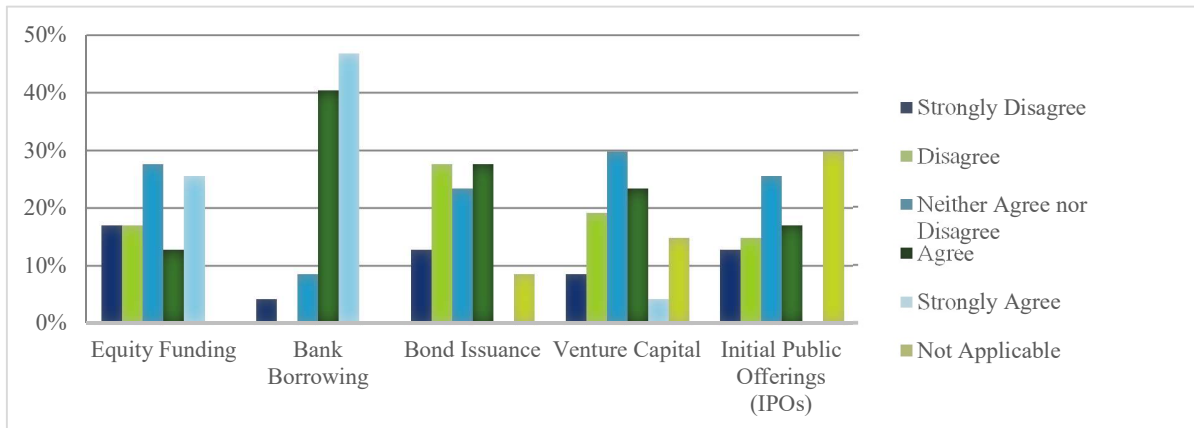


**Figure 36. Distribution of responses on the choice of funding in the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” in 2012**

Source: Author’s construction based on the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” conducted in August- October 2012.

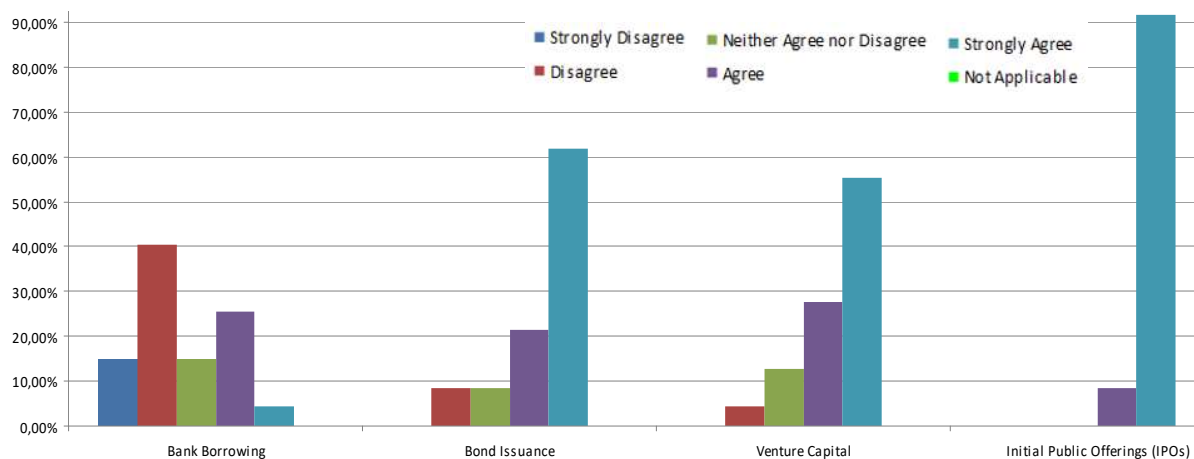
The venture capital funding was indicated as more preferred than bond borrowing thus indirectly signalling the preference for private funding, not the public process. The dominance of the banking sector activity in the money supply segment is further explained by the analysis of the government policies- the vast majority (87%) of the surveyed companies “agreed” (40%) or

“strongly agreed” (47%) that Latvian government supports bank borrowing as funding sources (Figure 37).



**Figure 37. Distribution of responses on the influence of the government policies in Latvia in the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” in 2012**  
 Source: Author’s construction based on the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” conducted in August- October 2012.

Even though the analysis of the profile of the respondents has revealed the majority has a master degree, there exists a knowledge gap in IPO and bond issuing process. The latter acts as the barrier to attract alternative to banking funding as demonstrated in the survey (Figure 38).

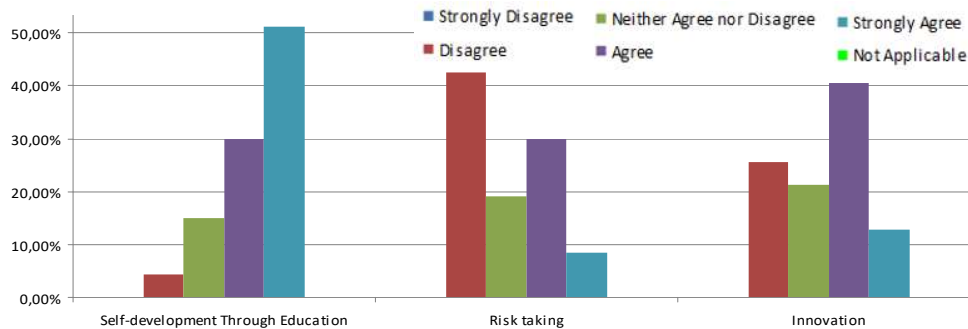


**Figure 38. Distribution of responses on the view on the lack of knowledge as the barrier to attract alternative to banking funding in the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” in 2012**  
 Source: Author’s construction based on the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” conducted in August- October 2012.

While the lack of knowledge in the bond issuing process was revealed, the analysis of the cultural norms in Latvia demonstrates that Latvian culture is seen as not encouraging risk-taking



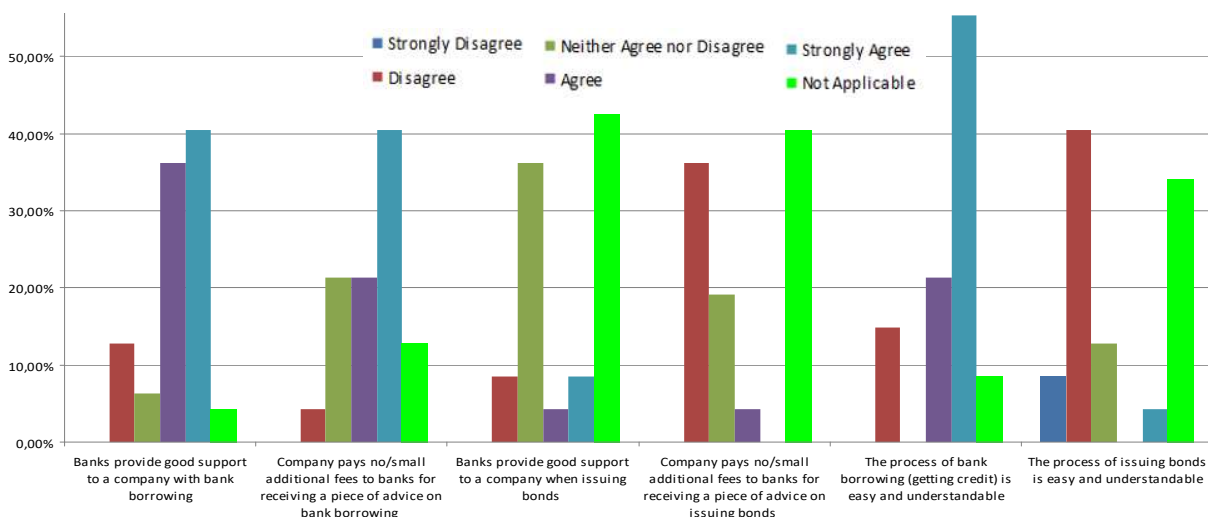
(supported by 43% of the respondents) but focusing on self-development through education (supported by 81% of the respondents) thus proving the need and importance for a thorough education in the area of financial instruments for the relevant employees in the company in order for them to start using the alternative to bank financing (Figure 39).



**Figure 39. Distribution of responses on the view on cultural issues as the barrier to attract alternative to banking funding in the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” in 2012**

Source: Author’s construction based on the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” conducted in August- October 2012.

The further investigation of the knowledge, support and cost perspective of the borrowing process has revealed that 60-70% of the respondents view banks as providing good support, the process as understandable and cheap thus signalling the reasonable infrastructure in place. In the case of the bond issuance, only 13% of respondents agreed on the same criteria (Figure 40).



**Figure 40. Distribution of responses on the view about the alternative to banking funding in the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” in 2012**

Source: Author’s construction based on the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” conducted in August- October 2012.

The results indicate that banks provide limited support to the companies in the bond issuing process and there is little commercial interest to help companies to issue bonds as the fee a company pays to banks for bond issuing bonds remains high despite the competition. The further investigation of the bond issuance provided a more detailed representation of the bond issuance related limitation: while 45% of respondents agreed that there were enough banks to serve the needs of the companies for issuing bonds, only 13% were positive on the easiness for a company to apply for bond issue indicating the relatively high level of complexity of bond issuing process with the bank (Figure 41).

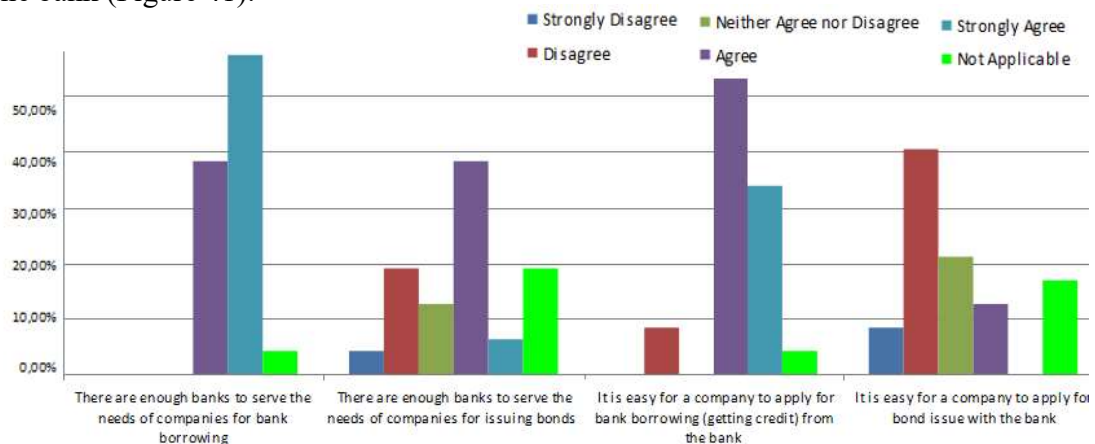


Figure 41. Distribution of responses on the view on the availability of borrowing in the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” in 2012

Source: Author’s construction based on the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” conducted in August- October 2012.

Despite the relatively high level of education among the respondents, only 36% indicated there was enough knowledge of the bond issuing process (81% for bank borrowing).

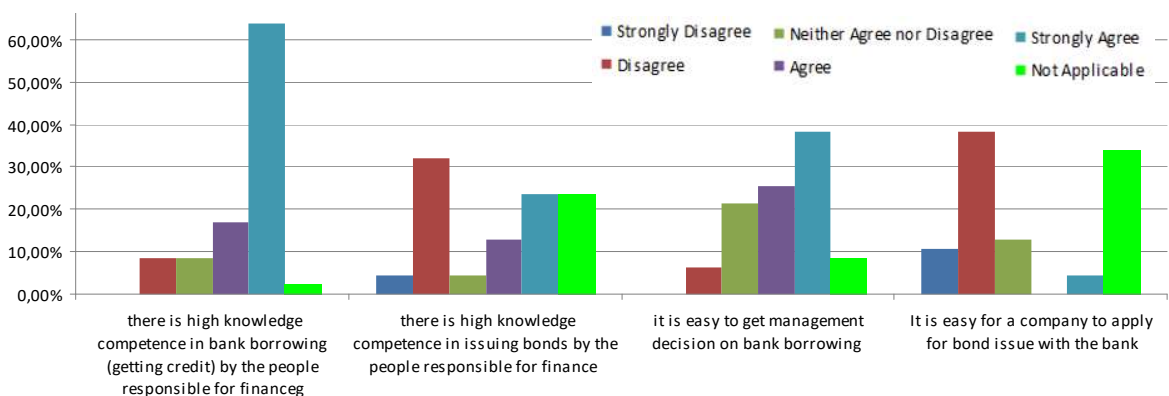


Figure 42. Distribution of responses on the view on education in the companies in the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” in 2012

Source: Author’s construction based on the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” conducted in August- October 2012.

More problems were revealed on the level of easiness to get management decision on bank borrowing or bond issuance. While the decision on getting a bank credit was treated as easy by 64% of respondents, only 4% were optimistic about the decision on the bond issuance (Figure 42). Company culture within companies has a strong focus on self-development through education with a stronger focus on innovation than in Latvian culture in general (Figure 43).

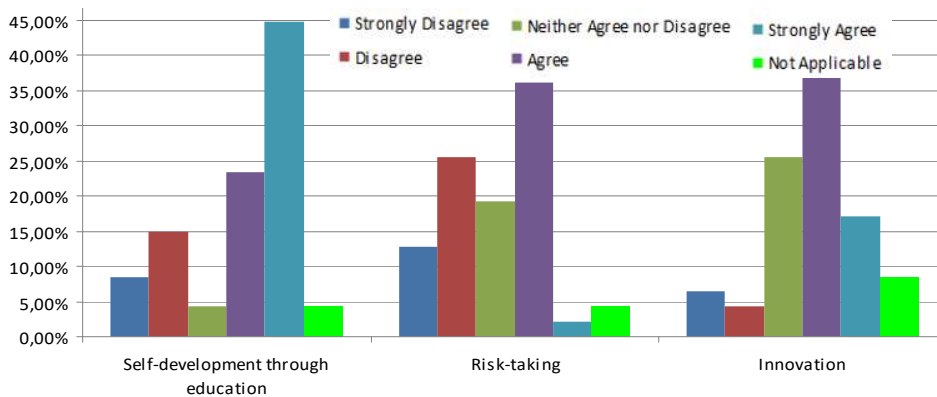


Figure 43. **Distribution of responses on the view on the culture of the company in the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” in 2012**

Source: Author’s construction based on the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” conducted in August- October 2012.

When asked to evaluate the bond market openness by the level of its accessibility, affordability, transparency, development, efficiency, and liquidity; 47% of the respondents agreed that bond market is easily accessible in Latvia, 40% agreed on its transparency, and 25% on its affordability. The problems were spotted on liquidity, efficiency, level of development (Figure 44).

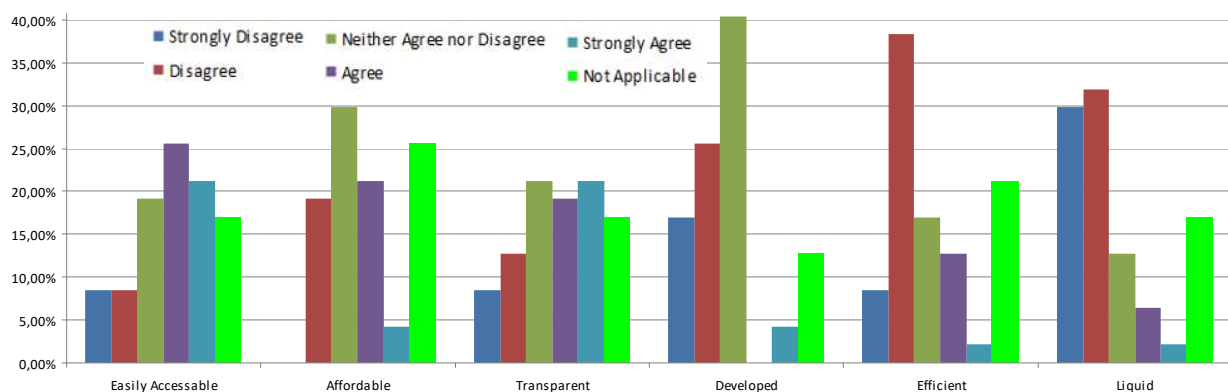
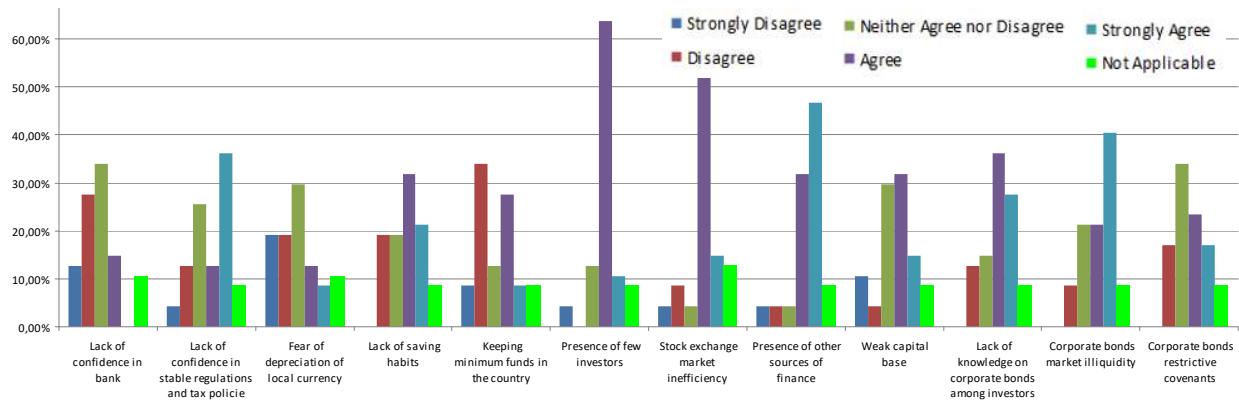


Figure 44. **Distribution of responses on the view on the openness of the bond market in the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” in 2012**

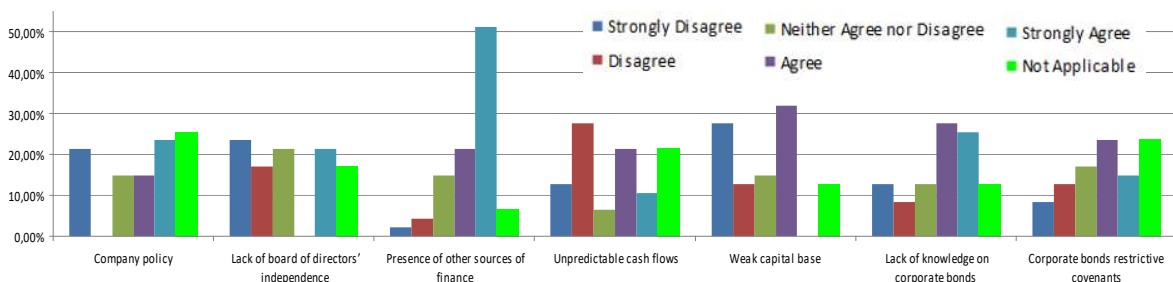
Source: Author’s construction based on the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” conducted in August- October 2012.

While revealing the perception of the bond market in Latvia and its problematic areas the main obstacles to issuing bonds for the companies should be discovered (Figure 45).



**Figure 45. Distribution of responses on the view on the main obstacles in issuing bonds in the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” in 2012**  
 Source: Author’s construction based on the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” conducted in August- October 2012.

The significant obstacles to issuing bonds for a company in Latvia (more than 60% of respondents agreed) were presence of other sources of finance (78%), presence of few investors (64%), lack of knowledge among investors (65%), as well as the areas stressed in the previous question: stock exchange inefficiency (70%), and corporate bond market illiquidity (62%). Less significant (45-60% agreed) obstacles were lack of saving habits (53%), lack of confidence in stable regulations and tax policies (49%), and weak capital base (46%).



**Figure 46. Distribution of responses on the view on the barriers to issues bonds in the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” in 2012**  
 Source: Author’s construction based on the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” conducted in August- October 2012.

When asked more specific on the obstacles to issuing bonds for their companies, the significant support among the respondents (more than 50%) gained presence of the other sources of finance (72%) and lack of knowledge on corporate bonds (53%) (Figure 46). Less significant weight (more than 30%) got such obstacles as company policy (38%), unpredictable cash flows

(32%), weak capital base (32%), and corporate bonds restrictive covenants (48%). While most of the companies are aware of an opportunity to issue bonds (60%) and have discussed it in their companies (32%), only 4% are positive about issuing corporate bonds in the coming 1-3 years or after 3 years (Figure 47).

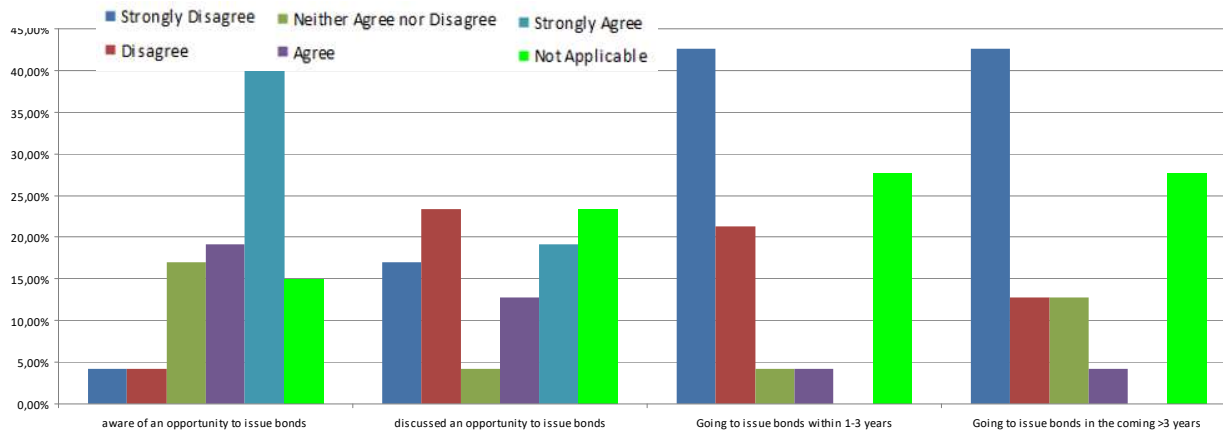


Figure 47. **Distribution of responses on the view on the plans for issuing bonds in the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” in 2012**

Source: Author’s construction based on the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” conducted in August- October 2012.

In order to get a deeper understanding of the sources of financing of the companies, the respondents were further asked about the funding structure of their company (Figure 48).

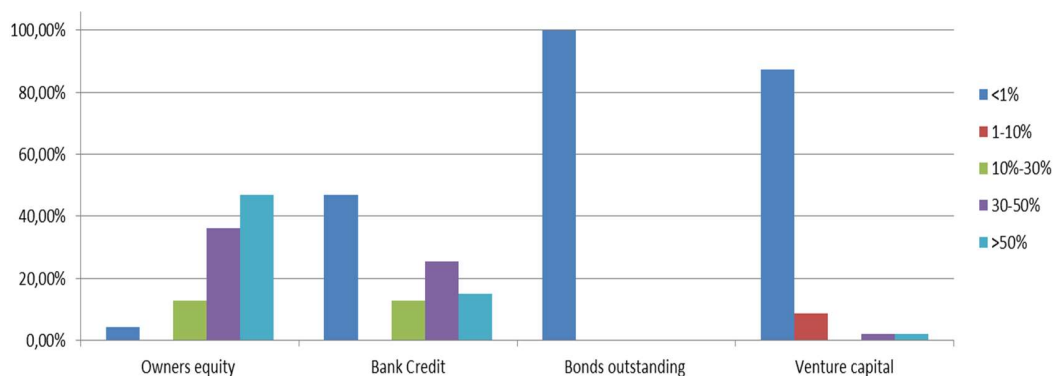


Figure 48. **Distribution of responses on the view on the sources of funding in the companies in the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” in 2012**

Source: Author’s construction based on the survey “Corporate Bonds: Factors that Affect the Issuance in Latvia” conducted in August- October 2012.

The results reveal that 85% of companies are mostly financed through owners’ equity (more than 30% of the capital), while bank borrowing is present in 40% of the companies (more than 30% of the capital), other sources of financing like bonds outstanding or venture capital represent less than 1% of the overall capital.

For the correlation analysis, the Author used the Pearson's correlation coefficient, which is symmetric and therefore well suited to determine the extent to which one variable is affected by another. In the case of the analysis performed by the Author, the correlation is determined between issuing bonds within 1-3 years and in the longer term of 3+ years for each of the following possible variables (Table 30).

**Table 30. Correlation coefficients of expert evaluations on companies' treatment of the main obstacles to issuing bonds and companies' plans to issues bond in the survey: "Corporate Bonds: Factors that Affect the Issuance in Latvia" in 2012**

Pearson product-moment correlation coefficient	Going to issues bonds within 1-3 years	Correlation conclusion	Going to issues bonds within >3 years	Correlation conclusion
Lack of confidence in banks	0.0316	Low	0.0225	Low
Lack of confidence in stable regulation and tax policies	-0.8186	Strong negative	-0.7495	Strong negative
Fear of depreciation of local currency	0.0476	Low	0.1973	Small positive
Lack of saving habits	-0.8731	Strong negative	-0.9222	Strong negative
Keeping minimum funds in the country	-0.1830	Small negative	-0.3959	Medium negative
Presence of few investors	-0.4693	Medium negative	-0.4374	Medium negative
Stock exchange market inefficiency	-0.4299	Medium negative	-0.4774	Medium negative
Presence of other sources of finance	-0.6583	Strong negative	-0.6953	Strong negative
Weak capital base	-0.6488	Strong negative	-0.4472	Medium negative
Lack of knowledge on corporate bonds among investors	-0.8575	Strong negative	-0.8883	Strong negative
Corporate bonds market illiquidity	-0.8962	Strong negative	-0.8505	Strong negative
Corporate bonds restrictive covenants	-0.7300	Strong negative	-0.7301	Strong negative

*Source: Author's construction based on the survey "Corporate Bonds: Factors that Affect the Issuance in Latvia" conducted in August- October 2012, n 47.*

In all cases, except 1 and 3, a negative correlation was observed between the factor in question and the short-term (<3 years) likelihood of issuing bonds i.e. a significant number of the relevant factors lead to a decrease in bond issuing. The Pearson product-moment correlation coefficient shows a correlation between issuing bonds after more than 3 years for all the factors is negative in various degrees except "fear of depreciation of local currency" and "lack of confidence in banks" which are slightly positive. While both short-term and long-term plans share the similar patterns in factors treated as obstacles, the stronger influence is revealed to be for lack of confidence in stable regulation and tax policies, lack of saving habits and lack of knowledge on corporate bonds among investors. While demonstrating the main obstacles to the development of the corporate bond market in Latvia, the survey conducted indicated only 4% of companies were planning to issue corporate bonds. The further development of Latvian corporate bond market in

the period 2012-2017 indicated the significant change in the perception of the alternative to bank financing in the form of corporate bonds by the companies. While perceiving the high growth, Latvian corporate bond market is skewed to the FSI segment with the minor representation of non-FSIs.

### 3.3. Corporate Bond Market Development model

From the result of the scientific literature review and analysis, the empirical application of the expositive and comparative frameworks developed, as well as the empirical study of the quantitative and qualitative factors; the Corporate Bond Market Development model has been developed (Figure 49).

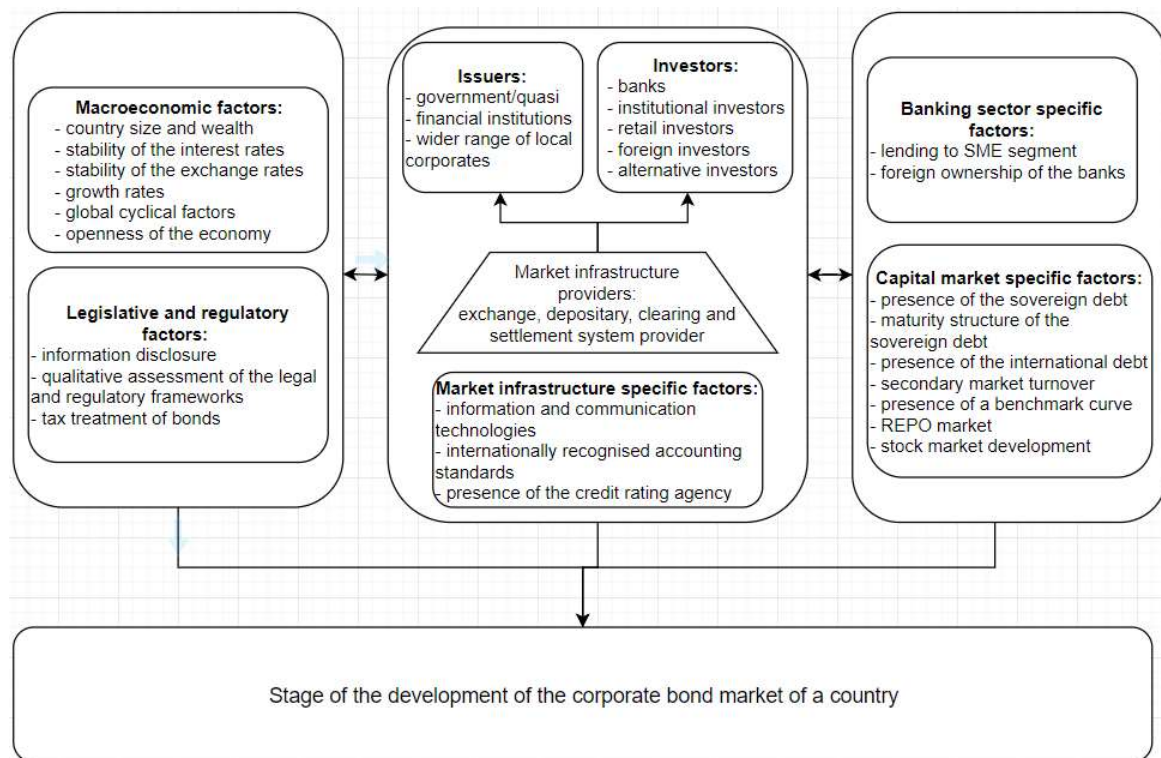


Figure 49. Corporate Bond Market Development Model

Source: Author's construction.

There are six *macroeconomic* factors as defined by the CBMD model: country size and wealth, stability of the exchange rates, stability of the interest rates, growth rates, global cyclical factors, and openness of the economy. The macroeconomic factors are found to be stable and in line with other 27 member states since Latvia joining the Eurozone is 2014. The macroeconomic factors affecting the development of the corporate bond market development in Latvia are GDP per capita and real GDP growth as part of statistical models constructed for the regression analy-

sis. From the result of the analysis, the Author evaluates the macroeconomic environment as good or favourable thus matching stage 4.

There are three *legislative and regulatory* factors: qualitative assessment of the legal and regulatory framework, tax treatment of bonds, information disclosure. The regression analysis indicates the regulatory quality as part of the model constructed. The analysis of the qualitative factors further develops the influence of the factors. The regulation base for the bond market in Latvia is determined to be sizable, thorough, and getting more applied with market growth. The presence of the regulator (FCMC) is valued positively from the perspective of controlling market participants and supporting the investors while being challenged by the issuers for the reactive rather than proactive approach. The taxation environment for the corporate bond segment in Latvia is found to be favourable and supporting the bond issuance process while challenging its frequent changes as performed by the government, thus questioning the long-term consistency. Moreover, the confidence in stable regulation and tax policies was raised by the largest companies in their response to the survey. The taxation issue, as covered by the *CMU* initiative is stressed to be challenging due to the failed financial transaction tax case. In the result of the analysis, the Author evaluates legislative and regulatory matching stage 4.

There are six *issuer/investor and market infrastructure related* factors: investor and issuer base, market infrastructure, internationally recognised accounting standards, information and communication technologies, cross-country electronic connection, presence of the credit rating agencies. The demand curve of the corporate bond market in Latvia is dominated by the asset management sector and stimulated by the accumulation of the second pension pillar funds. The importance of the domestic savings is proved by the results of the regression analysis- domestic savings is one of the factors that explain the variability of the total amount of the corporate bonds outstanding. The retail investors, as lacking the presence in the primary market of non-financial issuers (such as *Latvenergo*, where the public information is available), are claimed to be actively participating in the primary and secondary market of the FSIs securities. The development of the retail sector demand is getting more vital in the situation where *CMU* is not targeting the corporate bond segment. Moreover, the response of the survey indicates that lack of saving habits among retail holds companies from issuing corporate bonds. The geographical representation is found to be present and reasonable while limited by the lack of international corporate bond issues. The supply side is represented by the sovereign and corporate segments. For both non-



financial and financial sector issuers there are issuers of various scopes, sizes, and sectors present thus representing the relative diversity of the issuers. While the quasi-sovereign sector is present and growing in Latvia, the substantial domination of FSI is observed. The infrastructure factors were proved to be present and developed by both of the surveys conducted. The factor “the reputation a company gets as the result of the bond issue (publicity, regular meetings for the issuers, etc.)” indirectly provides signals regarding the reasonable infrastructure in place for the investor-issuer relationships. The presence of the internationally recognised accounting standards (IFRS for Latvia) is in place for the public issuers. Moreover, the establishment of unified accounting standards and standardisation of issuance is on the agenda of the *CMU* with the aim of simplifying the process, e.g. “junior IFRS” introduction for SMEs. There are no credit rating agencies present in Latvia. In the result of the analysis, the Author evaluates issuers as matching stage 3, investors as matching stage 4 and market infrastructure as matching stage 4.

There are two *banking sector* related factors: lending to SME segment, foreign ownership of the banks. The perception of the banking sector and bank loan availability is measured by the SME sector (99.81% of all the enterprises by the number) access to finance indicator of the companies in Latvia. The dynamics indicate the sharp decrease of rejected loans for SMEs. Despite the very high progress of Latvia in solving access to finance issue for SMEs the high speed of the situation improvement should be challenged for sustainability. The dynamics of the newly granted loans has had a stable increase trend for the period 2014-2016 with an expected (as based on 2017 Q1 results) slight correction in 2017. The availability of banking funding is proved to be high for the companies in Latvia by the response of the survey by the largest companies, while indicated as limited by the FSI and pointing that the bank borrowing is the most supported source of funding by Latvian government policies.

There are eleven *capital markets* specific factors: size of the bond market, size of the sovereign bond market, secondary market turnover and transactions, active market makers, quoted bid-ask spreads, presence of a benchmark yield curve, maturity structure of government bonds, international debt, stock market development, efficient ‘REPO’ market, primary issuance method. The expositive factor analysis framework identifies the size of the bond market as growing while skewed to the sovereign debt issues. The benchmark curve is present for long-term maturities thus matching stages 4-6. The considerable fluctuation of the debt outstanding in the period of 2008-2017 is observed. While being dependent on the sovereign bond issues, the over-

all size of the bond market is found to be determined by the late recognition of the government to borrow in the financial markets in 2009. The scale of the bond market and its corporate segment in Latvia is challenged by the comparative elements framework application to three country samples: Germany, Latvia, Sweden and USA; Croatia, Hungary, Latvia, Poland, Slovakia and Slovenia; Bulgaria, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia. The growth of the size indicator is influenced by the growth of the corporate bond market segment. The latter is expected by the Author to be stimulated by the securitisation practices of the banking loans, as stimulated to be re-introduced by the *CMU* and thus further increase the scope of the corporate bond market in Latvia. The results are controversial with the results of the statistical analysis performed: while the importance of the amount of government bonds outstanding is proved by the results of the regression analysis, the relationship between the independent and dependent variables is found to be inverse. Taking into account the importance of this issue in the national context, as well as the extensive research potential, the Author recommends the relationship to be further analysed in the academic research.

The results of the assessment of the corporate bonds market in Latvia by applying the CBMD model indicate stage 4. The actions as recommended to be taken to attain stage 5 are: country should develop a secondary market for securities, which will help pricing new issues, reduce issuance costs and issuance timeline, promote the growth of the asset management industry, and promote relations culture among issuers- investor and ability to manage compliance of covenants.

## Conclusions

The theses presented for the defence were defended in this thesis. The following conclusions were drawn in the result of the analysis:

1) While there is high corporate bond market recognition present by the academics, the existing research lacks a framework for measuring the development of the corporate bond market in Latvia.

- a) The existing studies analysing the development of the corporate bond market were identified, analysed and grouped by this research into three clusters: expositive elements frameworks, comparative elements frameworks, and stages of development. In the result of the analysis of each type of framework from the perspective of their further application to Latvia, expositive elements frameworks and comparative elements frameworks were developed. For the expositive elements framework, eleven elements were identified and categorised into two groups: measurement elements of the bond market and legal and macroeconomic elements. The expositive elements framework introduced qualitative analysis of the corporate bond market in a country and is applicable to any country or group of countries for the analysis in momentum. For the comparative elements framework, twelve elements were identified and categorised into four groups: size, access, efficiency, and stability. The application of the comparative elements framework requires the sample of the peer countries and represents the quantitative analysis in momentum.
- b) In the result of the research, six stages of development of the corporate bond market in a country were identified, and the staging process of the development of the corporate bond market for Latvia was developed. The stages measure the development of the corporate bond market including the actions recommended to be taken by the stakeholders at the respective stage. The framework identifies seven metrics: market infrastructure, presence of the benchmark curve, macroeconomic and political environment, legislative base, issuers, investors, and presence of the credit rating agency in a country. While defining the evolutionary process of the development of the corporate bond market in a country, stages frameworks lack time or historical timeline component- the stage of the development in defined in momentum.

- c) Even though the academics vastly apply expositive elements frameworks in their analysis, the research suggests comparative elements frameworks and stages of development as preferred for the application (when compared to expositive elements frameworks) due to their more universal approach and wider applicability. All three types of frameworks lack to provide the relevant framework for the analysis of the development of the corporate bond market in Latvia (limitations by the scope of the market and short historical data available are present) thus deriving the need for the development of a new framework.
  - d) In the result of the research, Corporate Bond Market Development model for measuring the development of the corporate bond market in Latvia was developed. The model contains 27 factors divided into three groups as affecting the stage of the development of the corporate bond market: 1) macroeconomic factors and legislative and regulatory factors, 2) the factors related to the market participants: issuers and investors; market infrastructure, and 3) banking sector and capital markets specific factors.
- 2) The stage of development of the corporate bond market in Latvia can be classified as “developed”.
- a) The results of the application of the expositive elements framework to analyse the development of the corporate bond market in Latvia indicate that the size of the bond market and its forming sovereign segment is increasing, maturity structure of Latvian bond market is well- established, and secondary market activity has positive dynamics. The diverse investor base indicates development on the demand side, where the weight of retail investors remains low. Latvian corporate bond market has reasonable legislative and taxation base.
  - b) The results of the application of the comparative elements framework to analyse the development of the bond market in Latvia and its corporate segment reveal that compared to three country samples, the corporate bond market in Latvia is developed in the areas of stability, access, and efficiency, where size area is lagging. The analysis indicates the high-level accessibility of the local corporate bond funding by the companies, where the recent shift of focus by the State Treasury of the Republic of Latvia to international borrowing provides negative input on the access factor as analysed by the research. The size

area is recognised as the main limitation of the corporate bond market development in Latvia.

- c) The corporate bond market in Latvia is found to be a non-recognised source of funding by non-financial issuers in Latvia. The survey to the existing and potential corporate bond issuers indicates that despite being aware about issuing bonds (60%), only 4% are positive about issuing corporate bonds in the future indicating as hindrances: presence of few investors, lack of knowledge among investor and saving habits, presence of other sources of finance, stock exchange inefficiency, corporate bond market illiquidity, lack of confidence in stable regulation and tax policies.
- d) The corporate bond market in Latvia is found to be a recognised source of funding by financial sector issuers in Latvia. FSI is determined to be the forming segment of the corporate bond market in Latvia where the long-term growth of the number of corporate bonds issued by Latvian financial sector issuers is found to be sustainable subject to the consistency of taxation and regulation policies in the country. The results of the analysis indicate that bank borrowing is not treated as the funding alternative for FSIs where bond and equity funding are the recognised funding sources of the FSI segment. All the identified corporate debt issuance motivating factors for FSIs to come to the bond market are long-term based: reputation, strategic market presence, and long-term funding cost. Additionally, the comments as provided by the respondents during the in-depth interviews stress the importance of taxation stability and Financial and Capital Market Commission role in the corporate bond market.
- e) The results of the assessment of the corporate bonds market in Latvia by applying the Corporate Bond Market Development model indicate stage 4 or “developed”. The actions as recommended to be taken to attain stage 5 are: country should develop a secondary market for securities, which will help pricing new issues, reduce issuance costs and accelerate issuance timeline, promote the growth of the asset management industry, and promote relations culture among issuers- investors and ability to manage compliance of covenants.

3) Development of the corporate bond market in Latvia is influenced by macroeconomic factors, the development of the government bond market, domestic savings and regulations.

- a) The research defined size area as currently lagging for the corporate bond market in Latvia when compared to three country samples: 1) Germany, Sweden, the USA as the benchmark countries; 2) Croatia, Hungary, Poland, Slovakia, Slovenia as defined by the in-depth expert interviews; and 3) Bulgaria, Hungary, Lithuania, Poland, Romania, Slovakia, Slovenia as the *EU* countries in which both banking sectors and capital markets are classified as underdeveloped by the academic research.
- b) In the theoretical part of the research 27 factors were detected as influencing the corporate bond market development. For the purpose of analysis the factors were divided into quantitative (secondary data analysed by the multiple regression) and qualitative (primary data obtained by the number of surveys and in-depth interviews and analysed by the descriptive statistics tools). In the result of the regression analysis three models were developed (statistically significant with the probability above 90%, determination coefficients being 79.8%, 81.5%, and 79.9%).
- c) The regression analysis of the quantitative factors has demonstrated the influence of the following factors on the amount of the corporate bonds outstanding: GDP per capita, amount of domestic savings, real GDP growth, amount of government bonds as the share of GDP and regulatory quality. The influence of the stock market was not defended in the research. The influence of the government bond market development on the corporate bond market development was found to be inverse.
- d) The analysis of the qualitative factors has revealed that main determinants for the companies to come to the debt market are: reputation a company gets as the result of bond issue, strategical ambition to be present in the public market, cost of funding in the long-term (more than 3 years), where indirect factors are cost of issue, cost of market entrance, cost of funding in the short-term and level of competence in bond issue process by the reasonable people in the company. The main obstacles are named: lack of confidence in stable regulation and tax policies, lack of saving habits, lack of knowledge on corporate bonds among investors and corporate bonds market illiquidity. The information as gathered during in-depth interviews broaden the reputation factor by complementing such factors as the desire for transparency as the stimulating factor for new and potential investors and

the interpretation of the exchange-listed bonds as the bond repayment guarantee from the investor side.

4) The actions relevant to the development of the corporate bond market in Latvia within the *Capital Markets Union* are the development of cross-border securities trade and securitisation practices.

- a) The research uncovers the shift in the bank-based and market-based economy paradigm both in the academic area and *EU* regulations. While being previously convincingly bank-based both in academic research and regulations of the *EU*, the case study of the financial crisis 2008-2013 with its sequences and the length of recovery as compared to the USA, is discovered to provide the fundamental impetus. The academic discussion on the preference for a bank- or market-based financing is found to be currently absent and replaced by the analysis of the relationship between the crisis effect and economic growth and the type of financial system, quantitative easing effect and financial system and an alternative classification of the financial system of a country. Gradually the border between the market and financial institutions is becoming blurrier were banks are viewed from the perspective of the financial market participants and originators of bonds.
- b) *CMU* as the move to a more developed alternative to bank financing for SME segment via accessing and developing capital markets is one of the key focuses of the *European Commission*. While *CMU* action plan focuses on six main areas: 1) financing for innovation, start-ups and non-listed companies; 2) making it easier for companies to enter and raise capital on public markets; 3) investing for the long-term, infrastructure, and sustainable investment; 4) fostering retail and institutional investment; 5) leveraging banking capacity to support wider economy; and 6) facilitating cross-border investing; the academic research detects three main focus areas of the *CMU*: capital markets activation for SMEs (including market harmonisation), investor base diversification and cross-border investment.
- c) As main *CMU* obstacles, the research discovers market fragmentation, harmonisation of accounting and taxation practices. To address existing market fragmentation of the European capital markets and link markets together, the trades for a given security are suggested to occur at the best possible price. Standardisation of accounting standards for

SME financial reporting and possible application of already developed by International Accounting Standards Board “junior IFRS” is suggested. Harmonisation of taxation practices is not found to be feasible and might encounter financial transaction tax scenario.

- d) The research distinguishes two main areas of focus of the *CMU* as relevant to the development of the corporate bond market in Latvia: securitisation and cross-border securities trade. The cross-border securities trade in Latvian corporate bond segment should be stimulated due to the limited access of the international investor base to Latvian corporate bond market. While corporate bonds could be a direct retirement investment by the retail sector in the situation, where in Latvia, the pension savings and funds by the households are increasing, this segment lacks focus in the existing *CMU* action plan thus leaving institutional investor segment as the dominating in corporate bond instruments and lacking to provide the investor base diversification as recommended by this research. The present focus of *CMU* on reviving securitisation practices is found to further strengthen the development of the FSI segment in Latvia. The effect of *CMU* introduction presently targeting the dominating FSI segment while lacking the profound investor base and issuer base diversification effect (as discovered viable by this research for the further development) is estimated to provide fundamentally moderate influence on the development of the corporate bond market in Latvia subject to the success of cross-border investment practices.

## **Recommendations**

The research provides the practical application of its results for the potential users in corporate, regulatory and academic environment and infrastructure providers (exchange and depository):

- 1) Corporate sector represented by the existing and potential issuers might apply research findings in formulating their funding strategies (both defining the course and cost in the short-term and long-term perspective).
  - a) The potential corporate bond issuers could review corporate bond funding as part of the long-term financing source, where factors such as company reputation, strategical market presence, and long-term funding cost should be added to the scope of analysis.



- b) The existing and potential issuers of the corporate bonds should provide reasonable education on financial market financing for the reasonable people in the company in order to be able to implement the whole potential of the alternative to banking funding where the research reveals the level of competence in bond issue process by the reasonable people in the company as one of the motivating factors to issue corporate bonds.
  - c) The FSI segment might use the in-depth analysis of the segment for both benchmarking and competitor analysis. Moreover, the discovered existing similar interests and concerns of the FSI segment could result in more structured lobbying of the industry interests.
  - d) Banks as existing and potential issuers of the corporate bonds, within the discovered strong focus on reviving of securitisation practices, should provide in-depth analysis of their readiness and willingness for securitisation as the upcoming future reality.
- 2) Corporate bond listing and trading infrastructure providers: *Nasdaq Riga* and *Nasdaq CSD Societas Europaea* are suggested to:
- a) *Nasdaq Riga* should further stimulate the factors, which are important for corporate bond issue: reputation a company gets as the result of bond issue, strategical ambition to be present in the public market, cost of funding in the long-term (more than 3 years), as well as indirect factors: cost of issue, cost of market entrance, cost of funding in the short-term and level of competence in bond issue process by the reasonable people in the company, liquidity of the bond market.
  - b) *Nasdaq Riga* and *Nasdaq CSD Societas Europaea* should revise its pricing- the quick market development should not be just followed by providing reasonable infrastructure pricing, but rather planned in advance - the research discovers the importance of the cost of market entrance. The industry practices should be studied and applied.
  - c) *Nasdaq Riga* should further stimulate high ethical and corporate governance practices as applied to the listing and trading process, where factors as stressed by the issuers and their investors are: reputation factor, transparency of the issuers as the stimulating factor for existing and potential investors and the interpretation of the exchange-listed bonds as the bond repayment guarantee from the investor side.

- d) *Nasdaq Riga* should provide the continuous education on the practices and trading of the securitised bonds- this research discovers strong focus on securitisation of *CMU* for corporate bond market development.
  - e) *Nasdaq Riga* should continue its education on financial literacy for the potential investors since the research reveals that public bonds are treated as a safer asset by the investors because of being listed in exchange. Moreover, the upcoming pan-Baltic capital market creation and *CMU* initiative will potentially increase the retail interest in the market where this research reveals the ongoing growing amount of savings in Latvia. The cooperation with banks is desired for higher penetration.
  - f) *Nasdaq Riga* should initiate adding a public presentation of the upcoming issue for the purpose of transparency and clarity for the potential investors. The establishing of the rating agency should be studied- this research identifies the existence of the rating agency in a country as one of the factors stimulating the development of the corporate bond market.
  - g) *Nasdaq Riga* should prepare for the increasing scope of its corporate bond operations both from the perspective of the number of issuers (securitisation should increase FSI segment activity) and investors.
- 3) Regulators (government, FCMC) are suggested to use the following results of this analysis:
- a) The Ministry of Finance of the Republic of Latvia should prioritise the actions targeted on the development of the size area of the corporate bond market in Latvia where the actions of *CMU* targeted to increase directly or indirectly the size of the market should be highlighted for Latvian corporate bond market. *CMU* actions related to increasing the size of the corporate bond market are reviving securitisation and cross-border securities trade.
  - b) The Ministry of Finance of the Republic of Latvia should plan in a timely manner the establishment of reasonable securitisation practices in cooperation with banking sector and exchange as the infrastructure provider, where the increasing focus on the securitisation is found to be stressed by the *CMU*.
  - c) For the government, it is necessary to introduce retail and alternative investors on the demand side, and more large and medium corporates on the supply side to stimulate the

development of the corporate bond market in Latvia. The more transparent, simple and available tax reporting practice for the retail is suggested to be developed.

- d) The Ministry of Finance of the Republic of Latvia should analyse the increasing focus of The State Treasury of Latvia on the international bond segment, which has been found to provide the indirect negative influence on the domestic corporate bond segment via the benchmark curve presence and access area indicators. For the State Treasury of Latvia a more balanced approach while keeping in focus the whole bond segment not only sovereign issues is recommended.
  - e) The Ministry of Finance of the Republic of Latvia should expand the analysis of the role of taxation and its fundamental changes ongoing for the corporate bond market segment due to its increasing role in the company financing. The revealed concern of the corporate bond issuers about the consistency and predictability of the taxation could negatively affect the market when major changes are applied. The long-term perspective of the corporate bond issuers in Latvia as revealed by this research desires long-term stability and predictability by the stakeholders.
  - f) The Financial and Capital Market Commission should increase its dialogue with existing and potential issuers of the corporate bonds, focused on proactive help and possible standardisation of the accumulated practices within the quickly changing regulatory environment. The role of FCMC is found to be significant where more help and dialogues due to the existing regulatory environment is desired by the issuers.
  - g) The government of the Republic of Latvia should further stimulate the ethical standards of the corporate bond market and its stakeholders. This research reveals the high relevance of the reputation and transparency factors as signalled by the issuers for the buyers of the corporate bonds. Moreover, the negative influence of the regulatory quality on the corporate bond market development indicates the need for a prudent approach to avoid “overregulation” effect.
- 4) Academics are suggested to develop further and test Corporate Bond Market Development model where the ongoing change in the financing system of the *EU* from bank-based towards market-based and the related development in regulations, academic research, and economic environment is taking place. While the thesis has documented the combative results on the influence

of the sovereign bond segment on the development of the corporate bond market segment in Latvia as identified by analytical and empirical studies, the further analysis on the influence of the sovereign bond segment on the development of the corporate bond segment is recommended. The further studies on the opportunities and relevance of establishing the rating agency in Latvia as the important tool for the further development of the corporate bond market are recommended. The academics are suggested to use questionnaire and interview templates as developed by this research for the next studies.

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# Appendices

## Appendix 1.

Results of statistical analysis of quantitative factors of the corporate bonds market development, 2018

### Descriptive statistics of the determinants of the corporate bonds market development

Variable	Obs	Mean	Std. Dev.	Min	Max
bond_corp~1	189	126.8753	244.5649	.0678539	1629.276
log_gdppc	203	1053.048	30.79961	981.2028	1146.08
gdpgrowth	203	1.78866	2.892962	-9.132	25.557
inflation	203	1.41968	1.42606	-2.097	5.394
stocks	138	42.14062	54.24933	.111	264.504
savings	203	24.4828	8.531694	8.331	54.683
gov_exp	203	20.34946	3.045711	12.345	27.366
bond_gov_t~1	189	58.17034	35.57978	.6341614	192.0516
bond_gov_int	189	8.83131	8.770455	.0254396	31.58634
corruption	217	1.434886	.7085782	-.1892218	2.404901
gov_effect	217	1.426711	.4456544	.2111847	2.241138
pol_stabil	217	.880457	.4026163	-.3180437	1.544087
reg_quality	217	1.369667	.408651	.1483149	2.038402
rule_law	217	1.449513	.4836125	.196004	2.100273

Source: Author's construction based on The World Bank and Bank for International Settlement data (2018).

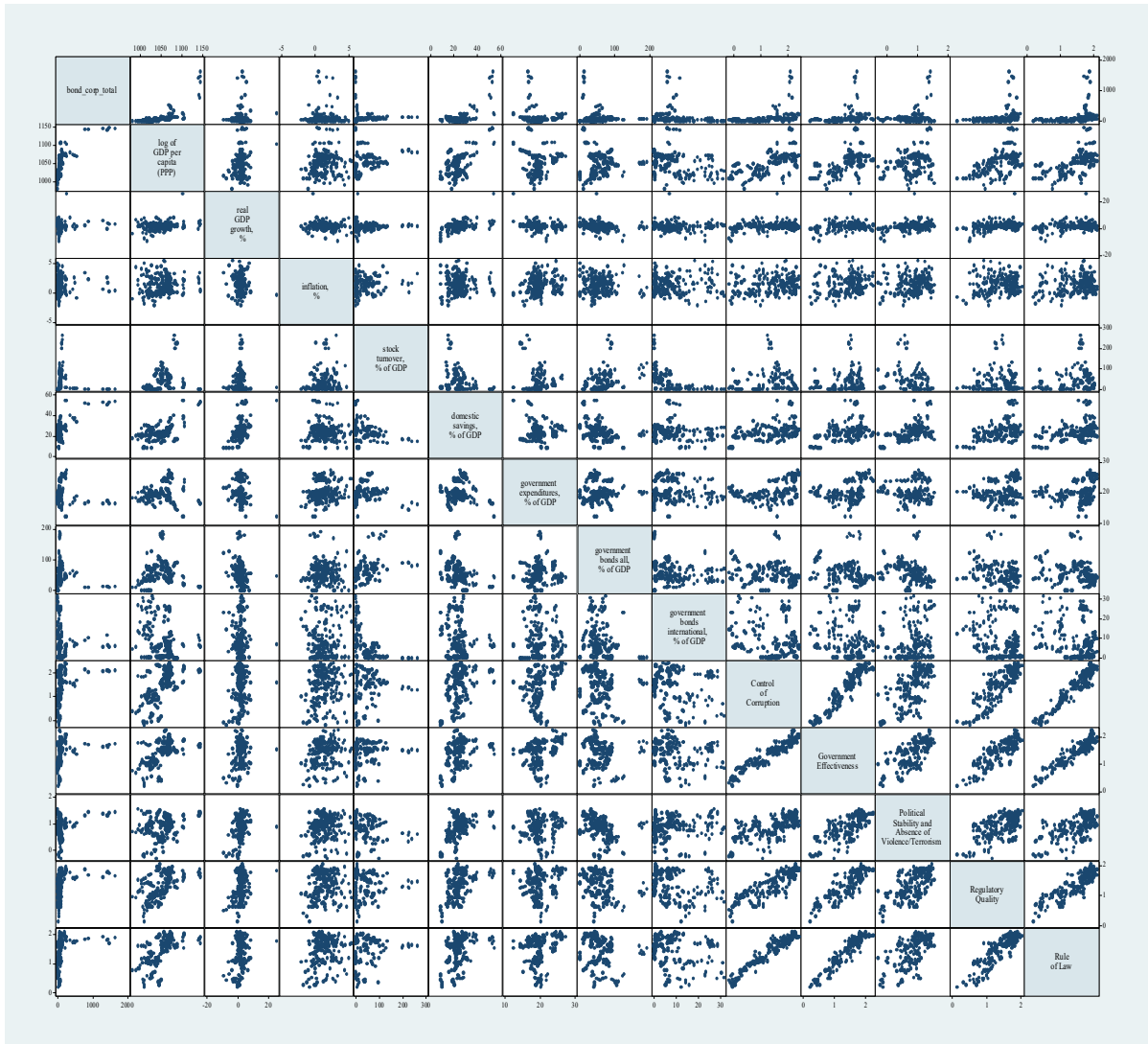
### Correlation matrix of the determinants of the corporate bonds market development

(obs=118)

	bond_c~1	log_gd~c	gdpgro~h	inflat~n	stocks	savings	gov_exp	bond_g~1	bond_g~t	corrup~n	gov_ef~t	pol_st~1	reg_qu~y	rule_law
bond_corp~1	1.0000													
log_gdppc	0.7552	1.0000												
gdpgrowth	0.1934	0.4363	1.0000											
inflation	0.0015	0.1015	-0.2071	1.0000										
stocks	-0.1757	0.1612	0.0633	0.1122	1.0000									
savings	0.7477	0.7792	0.5319	-0.0278	-0.2985	1.0000								
gov_exp	-0.2571	-0.2781	-0.3660	0.2280	-0.1443	-0.2846	1.0000							
bond_gov_t~1	-0.3952	-0.2599	-0.1746	-0.0463	0.3984	-0.4022	0.2014	1.0000						
bond_gov_int	-0.0943	-0.2963	-0.1726	-0.0307	-0.5619	-0.0716	-0.0783	-0.2046	1.0000					
corruption	0.3839	0.7120	0.3618	0.1655	0.1580	0.5031	0.0536	-0.0990	-0.3264	1.0000				
gov_effect	0.2705	0.6506	0.3656	0.1825	0.2609	0.4344	0.0301	-0.0207	-0.3295	0.9355	1.0000			
pol_stabil	0.4052	0.5712	0.3764	0.1243	-0.1437	0.6557	-0.0932	-0.1868	-0.0804	0.6115	0.6283	1.0000		
reg_quality	0.3588	0.7483	0.4114	0.1930	0.1426	0.5423	-0.0478	-0.2140	-0.2180	0.8680	0.8558	0.5850	1.0000	
rule_law	0.3428	0.7165	0.3975	0.2133	0.2645	0.4728	-0.0281	-0.1333	-0.3728	0.9483	0.9302	0.5788	0.8925	1.0000

Source: Author's construction based on The World Bank and Bank for International Settlement data (2018).

Scatter diagram of the determinants of the corporate bonds market development



Source: Author's construction based on The World Bank and Bank for International Settlement data (2018).

Results of panel regression analysis of the determinants of the corporate bonds market development by adding real GDP growth factor and lg of GDP per capita factor only

Variable	corporate_b~1	corporate_b~7	corporate_b~8
log of GDP per capita (PPP)	8.5247682***	9.7539871***	
real GDP growth, %	-21.035614***		-32.803756***
inflation, %	-12.918484	-4.9817272	-1.1321467
stock turnover, % of GDP	-.69122551	-.9408675*	1.0068888*
domestic savings, % of GDP	8.916597**	4.0536968	27.645792***
government expenditures, % of GDP	-5.7470699	.03580218	-12.469556
government bonds all, % of GDP	-.94946874**	-.95403143*	-1.2374194**
government bonds international, % of GDP	-.76713586	.02155496	-.6724946
Control of Corruption	90.673348	92.669134	282.96289***
Government Effectiveness	-61.210479	-56.449322	-232.03471*
Political Stability and Absence of Violence	-43.699009	-47.761396	-67.718311
Regulatory Quality	-281.50871***	-326.01334***	-110.19211
Rule of Law	-19.315273	-42.549349	-84.165002
2011	-40.55629	-26.639714	-64.073185
2012	-40.596655	8.8430139	-64.57123
2013	-38.138085	8.152761	-44.914991
2014	-48.299473	-31.64965	-20.607229
2015	-49.744926	-50.346775	-17.192807
2016	-99.791269	-72.952384	-79.911126
Constant	-8372.667***	-9642.3057***	125.81114
r2	.7981805	.77346827	.70230273
N	118	118	118

Source: Author's construction based on The World Bank and Bank for International Settlement data (2018).

\*\*\* Coefficient is significant at the 0.99 level.

\*\* Coefficient is significant at the 0.95 level.

\* Coefficient is significant at the 0.90 level.

Results of panel regression analysis of the determinants of the corporate bonds market development by adding Worldwide Governance Indicators by the World Bank only

Variable	corporate_b~1	corporate_b~2	corporate_b~3	corporate_b~4	corporate_b~5	corporate_b~6
log of GDP per capita (PPP)	8.5247682***	7.7724745***	7.5112894***	6.2812029***	9.0882154***	7.8887149***
real GDP growth, %	-21.035614***	-25.89112***	-24.95237***	-28.591708***	-20.923852***	-24.431739***
inflation, %	-12.918484	-28.759365*	-23.744028	-25.447794	-18.123809	-19.861337
stock turnover, % of GDP	-.69122551	-.91494821*	-.68551396	-.88494993*	-.81279182*	-.78559836
domestic savings, % of GDP	8.916597**	8.3449382**	9.2097222**	11.787973***	7.3148442**	8.137101**
government expenditures, % of GDP	-5.7470699	-7.5522946	-6.8062262	-12.457077*	-4.2757933	-8.3330968
government bonds all, % of GDP	-.94946874**	-.69483956	-.63356496	-.64179007	-.95499762**	-.84845716*
government bonds international, % of GDP	-.76713586	-2.6846965	-2.1905003	-2.1455394	-1.2358164	-3.0452273
Control of Corruption	90.673348	-93.265995***				
Government Effectiveness	-61.210479		-163.76681***			
Political Stability and Absence of Violence	-43.699009			-107.1944**		
Regulatory Quality	-281.50871***				-261.03515***	
Rule of Law	-19.315273					-152.86675***
2011	-40.55629	-22.051327	-27.936327	-23.533845	-35.309181	-33.534432
2012	-40.596655	-41.372279	-42.190934	-44.475428	-39.147234	-43.154326
2013	-38.138085	-60.17695	-50.500539	-57.340858	-45.127349	-53.137337
2014	-48.299473	-69.932875	-59.7224	-60.757447	-59.344785	-48.898079
2015	-49.744926	-70.574536	-59.532766	-62.023361	-60.313734	-53.296916
2016	-99.791269	-141.42733**	-128.52795**	-137.53407**	-109.67653*	-133.50003**
Constant	-8372.667***	-7746.0448***	-7437.6309***	-6208.083***	-8988.6758***	-7772.4948***
r2	.7981805	.76206699	.76984598	.7564356	.79397019	.76893549
N	118	118	118	118	118	118

Source: Author's construction based on The World Bank and Bank for International Settlement data (2018).

\*\*\* Coefficient is significant at the 0.99 level.

\*\* Coefficient is significant at the 0.95 level.

\* Coefficient is significant at the 0.90 level.

## Appendix 2.

Questionnaire: Corporate Bonds in Latvia: Factors that Affect Financial Sector Issuers

### SECTION 1: FUNDING

The following statements assess the choice for funding by FSIs in Latvia. Please choose the most appropriate option. All analysed statements are placed in alphabetic order.

*Evaluation scale 1 - 10, where 1 - strongly disagree; 10 - strongly agree*

<b>1. In my country government policies support as the first choice of funding</b>										
bank borrowing	1	2	3	4	5	6	7	8	9	10
equity funding	1	2	3	4	5	6	7	8	9	10
initial public offering (IPO)	1	2	3	4	5	6	7	8	9	10
issuing bonds	1	2	3	4	5	6	7	8	9	10
other (please write and evaluate 1-10)	1	2	3	4	5	6	7	8	9	10
other (please write and evaluate 1-10)	1	2	3	4	5	6	7	8	9	10
<b>2. In my country taxes</b>										
are applied to companies in a consistent way	1	2	3	4	5	6	7	8	9	10
are applied to companies in a predictable way	1	2	3	4	5	6	7	8	9	10
influence the choice for funding of a company	1	2	3	4	5	6	7	8	9	10
support bank borrowing as the choice of funding by a company	1	2	3	4	5	6	7	8	9	10
support equity funding as the choice of funding by a company	1	2	3	4	5	6	7	8	9	10
support initial public offering (IPO) as the choice of funding by a company	1	2	3	4	5	6	7	8	9	10
support issuing bonds as the choice of funding by a company	1	2	3	4	5	6	7	8	9	10
other (please write and evaluate 1-10)	1	2	3	4	5	6	7	8	9	10
other (please write and evaluate 1-10)	1	2	3	4	5	6	7	8	9	10
<b>3. Regulations applicable to my company support the choice for funding from</b>										
borrowing from the group company	1	2	3	4	5	6	7	8	9	10
borrowing outside the group company (bank borrowing)	1	2	3	4	5	6	7	8	9	10
equity funding	1	2	3	4	5	6	7	8	9	10
issuing bonds	1	2	3	4	5	6	7	8	9	10
organising initial public offering (IPO)	1	2	3	4	5	6	7	8	9	10
other (please write and evaluate 1-10)	1	2	3	4	5	6	7	8	9	10

other (please write and evaluate 1-10)	1	2	3	4	5	6	7	8	9	10
<b>4. My company when in need for additional funding chooses</b>										
borrowing from the group company	1	2	3	4	5	6	7	8	9	10
borrowing outside the group company (bank borrowing)	1	2	3	4	5	6	7	8	9	10
equity funding	1	2	3	4	5	6	7	8	9	10
issuing bonds	1	2	3	4	5	6	7	8	9	10
organising initial public offering (IPO)	1	2	3	4	5	6	7	8	9	10
other (please write and evaluate 1-10)	1	2	3	4	5	6	7	8	9	10
other (please write and evaluate 1-10)	1	2	3	4	5	6	7	8	9	10
<b>Additional comments:</b>										

## SECTION 2: ISSUING BONDS

The following statements assess the choice for issuing bonds by the FSIs in Latvia. Please, choose the most appropriate option. All analysed statements are placed in alphabetic order.

<b>5. In my country corporate bond market is</b>											
accessible (processes to issue bonds and list them in <i>Nasdaq Baltic</i> , etc.)	1	2	3	4	5	6	7	8	9	10	
affordable (fees to register, list bonds, etc.)	1	2	3	4	5	6	7	8	9	10	
developed	1	2	3	4	5	6	7	8	9	10	
efficient	1	2	3	4	5	6	7	8	9	10	
liquid	1	2	3	4	5	6	7	8	9	10	
transparent and sound	1	2	3	4	5	6	7	8	9	10	
other (please write and evaluate 1-10)	1	2	3	4	5	6	7	8	9	10	
other (please write and evaluate 1-10)	1	2	3	4	5	6	7	8	9	10	
<b>6. In my country the minimum size of a potential 1 corporate bond issue is (in millions EUR) (please indicate amount as your subjective opinion)</b>											
5	10	20	30	40	50	60	70	80	90	100	Not important at all
Other (please write) _____											
<b>7. In my country the maximum size of a potential 1 corporate bond issue is (in millions EUR) (please indicate amount as your subjective opinion)</b>											
5	10	20	30	40	50	60	70	80	90	100	Not important at all
Other (please write) _____											
<b>8. In my country the financial performance of a potential corporate bond issuer is ana-</b>											



lysed over..... years (please indicate number as your subjective opinion)																			
1	2	3	4	5	6	7	8	9	10	Other (please write)									
<b>9. In my country the minimum annual turnover amount of a potential corporate bond issuer is (in millions EUR) (please indicate amount as your subjective opinion)</b>																			
10	20	30	40	50	60	70	80	90	100	150	Not important at all								
Other (please write) _____																			
<b>10. In my country the minimum annual net profit amount of a potential corporate bond issuer is (in millions EUR) (please indicate amount as your subjective opinion)</b>																			
loss	0	5	10	20	30	40	50	60	70	80	Not important at all								
Other (please write) _____																			
<b>11. In my country the following financial ratios are additionally analysed for a potential corporate bond issuer (please write ratio and desired level as your subjective opinion)</b>																			
<b>12. In my country the factors influencing the success of a corporate bond issue are</b>																			
annual profitability of the issuer										1	2	3	4	5	6	7	8	9	10
annual turnover of the issuer										1	2	3	4	5	6	7	8	9	10
asset size of the issuer										1	2	3	4	5	6	7	8	9	10
bond coupon rate offered										1	2	3	4	5	6	7	8	9	10
corporate governance of the issuer										1	2	3	4	5	6	7	8	9	10
legal structure of the issuer										1	2	3	4	5	6	7	8	9	10
management experience of the issuer										1	2	3	4	5	6	7	8	9	10
management structure of the issuer										1	2	3	4	5	6	7	8	9	10
transparency of the issuer										1	2	3	4	5	6	7	8	9	10
transparency of the issuing process										1	2	3	4	5	6	7	8	9	10
usage of funds acquired from corporate bond issue										1	2	3	4	5	6	7	8	9	10
other (please write and evaluate 1-10)										1	2	3	4	5	6	7	8	9	10
other (please write and evaluate 1-10)										1	2	3	4	5	6	7	8	9	10
<b>13. In my country the main obstacles to issue bonds are</b>																			
cost of issue (documentation, issue organiser, etc.)										1	2	3	4	5	6	7	8	9	10
cost of market entrance (registration fees, listing fees, etc.)										1	2	3	4	5	6	7	8	9	10
cost when compared to the borrowing from the group company										1	2	3	4	5	6	7	8	9	10

cost when compared to the borrowing outside the group company (bank borrowing)	1	2	3	4	5	6	7	8	9	10
cost when compared to the equity funding	1	2	3	4	5	6	7	8	9	10
level of competence in bond issue process by the reasonable people in my company	1	2	3	4	5	6	7	8	9	10
level of corporate bond understanding among investors	1	2	3	4	5	6	7	8	9	10
level of demand from investors	1	2	3	4	5	6	7	8	9	10
liquidity of the corporate bond market	1	2	3	4	5	6	7	8	9	10
regulatory policies	1	2	3	4	5	6	7	8	9	10
restrictive covenants of the corporate bonds	1	2	3	4	5	6	7	8	9	10
other (please write and evaluate 1-10)	1	2	3	4	5	6	7	8	9	10
other (please write and evaluate 1-10)	1	2	3	4	5	6	7	8	9	10
<b>14. In my company the main motivation to issue bonds for a company is</b>										
cost of funding in the long-term (more than 3 years)	1	2	3	4	5	6	7	8	9	10
cost of funding in the short-term (less than 3 years)	1	2	3	4	5	6	7	8	9	10
cost of issue (documentation, issue organiser, etc.)	1	2	3	4	5	6	7	8	9	10
cost of market entrance (registration fees, listing fees, etc.)	1	2	3	4	5	6	7	8	9	10
demand from investors	1	2	3	4	5	6	7	8	9	10
lack of funding alternative	1	2	3	4	5	6	7	8	9	10
level of competence in bond issue process by the reasonable people in my company	1	2	3	4	5	6	7	8	9	10
regulatory policies	1	2	3	4	5	6	7	8	9	10
reputation a company gets as the result of bond issue (publicity, regular meetings for the issuers, etc.)	1	2	3	4	5	6	7	8	9	10
strategical ambition to be present in the public market	1	2	3	4	5	6	7	8	9	10
other (please write and evaluate 1-10)	1	2	3	4	5	6	7	8	9	10
other (please write and evaluate 1-10)	1	2	3	4	5	6	7	8	9	10

<b>15. My company currently has corporate bonds as the percentage of total liabilities outstanding</b>										
less than 5%	1	2	3	4	5	6	7	8	9	10
6-10%	1	2	3	4	5	6	7	8	9	10
11-30%	1	2	3	4	5	6	7	8	9	10

31-50%	1	2	3	4	5	6	7	8	9	10
more than 50%	1	2	3	4	5	6	7	8	9	10
<b>16. My company is planning to make following number of issues this year</b>										
1-3 this year	1	2	3	4	5	6	7	8	9	10
4-7 this year	1	2	3	4	5	6	7	8	9	10
more than 7 this year	1	2	3	4	5	6	7	8	9	10
0 this year and 0 next year	1	2	3	4	5	6	7	8	9	10
0 this year and 1 or more next year	1	2	3	4	5	6	7	8	9	10
<b>17. In my company the target percentage of liabilities issued as corporate bonds is</b>										
less than 5%	1	2	3	4	5	6	7	8	9	10
6-10%	1	2	3	4	5	6	7	8	9	10
11-30%	1	2	3	4	5	6	7	8	9	10
31-50%	1	2	3	4	5	6	7	8	9	10
more than 50%	1	2	3	4	5	6	7	8	9	10
<b>18. My company, when issuing bonds is targeting</b>										
retail clients (excluding high net worth individuals)	1	2	3	4	5	6	7	8	9	10
high net worth individuals	1	2	3	4	5	6	7	8	9	10
institutional clients (banks' own books)	1	2	3	4	5	6	7	8	9	10
institutional clients (banks' assets under management departments)	1	2	3	4	5	6	7	8	9	10
institutional clients (insurance)	1	2	3	4	5	6	7	8	9	10
institutional clients (pension plans)	1	2	3	4	5	6	7	8	9	10
other (please write and evaluate 1-10)	1	2	3	4	5	6	7	8	9	10
other (please write and evaluate 1-10)	1	2	3	4	5	6	7	8	9	10
<b>19. My company, when issuing bonds is targeting</b>										
locally based clients with local capital	1	2	3	4	5	6	7	8	9	10
locally based clients with foreign capital	1	2	3	4	5	6	7	8	9	10
abroad based clients with local capital	1	2	3	4	5	6	7	8	9	10
abroad based clients with foreign capital	1	2	3	4	5	6	7	8	9	10
<b>20. My company, when issuing bonds is targeting clients from the following countries (please indicate countries as your subjective opinion)</b>										

Denmark	Estonia	Finland	France
Germany	Latvia	Lithuania	Norway
Poland	Russia	Sweden	United Kingdom
Others (please write) _____			
<b>Additional comments:</b>			

### SECTION 3: BACKGROUND INFORMATION

The following statements develop a picture of the profile of the respondents. Please choose the most appropriate option. Statements are placed in alphabetic or growing order.

<b>Information about your company</b> (please choose the relevant answer)				
bank				
non-bank crediting institution				
other (please write the type of company only)				
<b>Personal information: gender</b> (please choose the relevant answer)				
female		male		
<b>Personal information: age group</b> (please choose the relevant answer)				
18-24	25-34	35-44	45-54	55 and over
<b>Personal information: education</b> (please choose the relevant answer)				
secondary school				
bachelor degree				
master degree				
doctoral degree				
other (please write)				

Thank you for your answers!

TO BE COMPLETED BY RESEARCH STAFF:

Date completed (dd/mm/yy): \_\_\_\_\_

### Appendix 3.

Questionnaire: Corporate Bonds: Factors that Affect the Issuance in Latvia

## BACKGROUND INFORMATION

### SECTION 1: FUNDING

The following statements assess the choice for funds by the companies in Latvia. Please choose the most appropriate option.

Not Applicable (NA)								
Do Not Know (DK)								
Completely True (5)								
Somewhat True (4)								
Neither True Nor False (3)								
Somewhat False (2)								
Completely False (1)								
Topic A: Sources of funding In my country...		<i>F</i>				<i>T</i>		
A01	There is sufficient equity funding available for companies.	1	2	3	4	5	DK	NA
A02	There is sufficient debt funding available for companies.	1	2	3	4	5	DK	NA
A03	There is sufficient funding available from private individuals (other than founders) for companies	1	2	3	4	5	DK	NA
A04	There is sufficient venture capitalist funding available for companies.	1	2	3	4	5	DK	NA
A05	There is sufficient funding available through initial public offerings (IPOs) for companies	1	2	3	4	5	DK	NA
Topic B: Choice of funding In my country...								
B01	When in need for addition source of funding a company chooses equity funding.	1	2	3	4	5	DK	NA
B02	When in need for addition source of funding a company chooses bank borrowing.	1	2	3	4	5	DK	NA
B03	When in need for addition source of funding a company chooses issuing bonds.	1	2	3	4	5	DK	NA
B04	When in need for addition source of funding a company chooses venture capitalist funding.	1	2	3	4	5	DK	NA
B05	When in need for addition source of funding a company chooses funding available through initial public offerings (IPOs).	1	2	3	4	5	DK	NA
Topic C: Government policies In my country...								
C01	Government policies directly or indirectly support equity funding as the first choice of a company.	1	2	3	4	5	DK	NA
C02	Government policies directly or indirectly support bank borrowing as the first choice of a company.	1	2	3	4	5	DK	NA
C03	Government policies directly or indirectly support issuing bonds as the first choice of a company.	1	2	3	4	5	DK	NA
C04	Government policies directly or indirectly support venture capitalist funding as the first choice of a company.	1	2	3	4	5	DK	NA
C05	Government policies directly or indirectly support initial public offerings (IPOs) as the first choice of a company.	1	2	3	4	5	DK	NA
C06	The amount of taxes does <u>NOT</u> influence the choice for funding of a company.	1	2	3	4	5	DK	NA
C07	Taxes and other government regulations are applied to companies in a	1	2	3	4	5	DK	NA

	predictable and consistent way.								
<b>Topic D: Education &amp; Training In my country...</b>									
D01	High level of knowledge is needed for a company to attract additional bank borrowing	1	2	3	4	5		DK	NA
D02	High level of knowledge is needed for a company to attract additional funds by issuing bonds	1	2	3	4	5		DK	NA
D03	High level of knowledge is needed for a company to attract additional funds chooses from venture capitalist.	1	2	3	4	5		DK	NA
D04	High level of knowledge is needed for a company to attract additional funds through initial public offerings (IPOs).	1	2	3	4	5		DK	NA
<b>Topic E: Cultural and social norms In my country...</b>									
E01	The national culture encourages self-development through education.	1	2	3	4	5		DK	NA
E02	The national culture encourages risk-taking	1	2	3	4	5		DK	NA
E03	The national culture encourages creativity and innovativeness.	1	2	3	4	5		DK	NA
<b>Additional comments:</b>									

## SECTION 2: DEBT FUNDING

The following statements assess the choice for debt funds by the companies in Latvia. Please choose the most appropriate option.

Not Applicable (NA)									
Do Not Know (DK)									
Completely True (5)									
Somewhat True (4)									
Neither True Nor False (3)									
Somewhat False (2)									
Completely False (1)									
<b>Topic F: Source of borrowing In my country...</b>									
		<b>F</b>						<b>T</b>	
F01	Banks provide good support to a company when bank borrowing (getting credit).	1	2	3	4	5		DK	NA
F02	Company pays no additional fees to banks for receiving a piece of advice on bank borrowing (getting credit).	1	2	3	4	5		DK	NA
F03	Banks provide good support to a company when issuing bonds	1	2	3	4	5		DK	NA
F04	Company pays no additional fees to banks for receiving a piece of advice on issuing bonds.	1	2	3	4	5		DK	NA
F05	The process of bank borrowing (getting credit) is easy and understandable	1	2	3	4	5		DK	NA
F06	The process of issuing bonds is easy and understandable	1	2	3	4	5		DK	NA
<b>Topic G: Availability of borrowing In my country...</b>									
G01	There are enough banks to serve the needs of companies for bank borrowing (getting credit)	1	2	3	4	5		DK	NA
G02	There are enough banks to serve the needs of companies for issuing bonds	1	2	3	4	5		DK	NA
G03	It is easy for a company to apply for bank borrowing (getting credit) from the bank	1	2	3	4	5		DK	NA

G04	It is easy for a company to apply for bond issue with the bank	1	2	3	4	5	DK	NA
<b>Topic H: Education In my company...</b>								
H01	In my company there is high knowledge competence in bank borrowing (getting credit) by the people responsible for finance	1	2	3	4	5	DK	NA
H02	In my company there is high knowledge competence in issuing bonds by the people responsible for finance	1	2	3	4	5	DK	NA
H03	In my company it is easy to get management decision made on bank borrowing (getting credit) from the bank	1	2	3	4	5	DK	NA
H04	In my company it is easy to get management decision made on bond issue with the bank	1	2	3	4	5	DK	NA
<b>Topic I: Cultural and social norms In my company...</b>								
I01	The company culture encourages self-development through education.	1	2	3	4	5	DK	NA
I02	The company culture encourages risk-taking	1	2	3	4	5	DK	NA
I03	The company culture encourages creativity and innovativeness.	1	2	3	4	5	DK	NA
<b>Additional comments:</b>								

### SECTION 3: ISSUING BONDS

The following statements assess the choice for issuing bonds by the companies in Latvia. Please choose the most appropriate option.

Not Applicable (NA)								
Do Not Know (DK)								
Completely True (5)								
Somewhat True (4)								
Neither True Nor False (3)								
Somewhat False (2)								
Completely False (1)								
<b>Topic J: Bond market openness In my country...</b>								
J01	Every company can easily access bond market as the source of funding (t.i issue bonds and list them in NASDAQ OMX Riga).	1	2	3	4	5	DK	NA
J02	A company can afford to access the entrance to the bonds market (registration fees of new bonds, listing fees, etc.)	1	2	3	4	5	DK	NA
J03	Bond market is transparent and sound.	1	2	3	4	5	DK	NA
J04	Bond market is developed.	1	2	3	4	5	DK	NA
J05	Bond market is efficient.	1	2	3	4	5	DK	NA
J06	Bond market is liquid	1	2	3	4	5	DK	NA
<b>Topic K: The main obstacles for a company to issue bonds In my country...</b>		<b>F</b>					<b>T</b>	
K01	Lack of confidence in banks	1	2	3	4	5	DK	NA
K02	Lack of confidence in stable regulations and tax policies	1	2	3	4	5	DK	NA
K03	Fear of depreciation of local currency	1	2	3	4	5	DK	NA
K04	Lack of saving habits	1	2	3	4	5	DK	NA
K05	Keeping minimum funds in the country	1	2	3	4	5	DK	NA
K06	Presence of few investors	1	2	3	4	5	DK	NA
K07	Stock exchange market inefficiency	1	2	3	4	5	DK	NA
K08	Presence of other sources of finance	1	2	3	4	5	DK	NA

K09	Weak capital base	1	2	3	4	5		DK	NA
K10	Corporate bonds information knowledge among investors	1	2	3	4	5		DK	NA
K11	Corporate bonds market liquidity	1	2	3	4	5		DK	NA
K12	Corporate bonds restrictive covenants	1	2	3	4	5		DK	NA
<b>Topic L: The main obstacles to issue bonds In my company...</b>		<b>F</b>					<b>T</b>		
L01	Lack of confidence in banks	1	2	3	4	5		DK	NA
L02	Lack of confidence in stable regulations and tax policies	1	2	3	4	5		DK	NA
L03	Fear of depreciation of local currency	1	2	3	4	5		DK	NA
L04	Company policy	1	2	3	4	5		DK	NA
L05	Stock exchange market inefficiency	1	2	3	4	5		DK	NA
L06	Presence of other sources of finance	1	2	3	4	5		DK	NA
L07	Lack of board of directors' independence	1	2	3	4	5		DK	NA
L08	Weak capital base	1	2	3	4	5		DK	NA
L09	Corporate bonds information knowledge among investors	1	2	3	4	5		DK	NA
L10	Corporate bonds market liquidity	1	2	3	4	5		DK	NA
L11	Corporate bonds restrictive covenants	1	2	3	4	5		DK	NA
L12	Unpredictable/uncertain cash flows	1	2	3	4	5		DK	NA
<b>Topic M: Issuing bonds My company...</b>									
M01	My company is aware of an opportunity to attract funds by issuing bonds.	1	2	3	4	5		DK	NA
M02	My company has discussed an opportunity to attract funds by issuing bonds.	1	2	3	4	5		DK	NA
M03	My company is going to issue bonds in the coming 1-3 years.	1	2	3	4	5		DK	NA
M04	My company is going to issue bonds in the coming >3 years.	1	2	3	4	5		DK	NA
<b>Additional comments:</b>									

## BACKGROUND INFORMATION

To help me to develop a picture of the **profile** of the respondents, please **answer** the following questions.

<b>Persona information</b>			
GENDER	MALE (1)	FEMALE (0)	WHAT YEAR WERE YOU BORN?
PLEASE INDICATE YOUR EDUCATIONAL ATTAINMENT TICKING ALL THAT APPLIES:			
Vocational or technical training	YES	NO	DK/R
Professional training (MSc, MBA, LLB, MD...)	YES	NO	DK/R
University or College Degree	YES	NO	DK/R
Graduate Scholarly Work (MA, PhD...)	YES	NO	DK/R
<b>Information on your company</b>			
Number of employees			
Years of operation			
Turnover in 2011 (thousands LVL)			
Turnover in 2010 (thousands LVL)			
Turnover in 2009 (thousands LVL)			



In which industry does the company operate in?  (tick one that apply: cell yes)	Technology-intensive	YES	NO	DK/R
	Low or medium technology	YES	NO	DK/R
	Manufacturing	YES	NO	DK/R
	Service business	YES	NO	DK/R
	High-growth	YES	NO	DK/R
	Low growth	YES	NO	DK/R
	Urban	YES	NO	DK/R
	Rural	YES	NO	DK/R
	Internationally oriented	YES	NO	DK/R
	Home country oriented	YES	NO	DK/R
Other (what?)				

Information on the funding structure of your company		<i>Please indicate the approximate percentage</i>		
Owners equity				
Bank credit				
Bonds outstanding				
Venture capital				

I would like to thank you for your help and time. In case you want to receive the results of the survey please enter the data below. Please note that all personal details will remain confidential and will only be used as described above.

Name:

E-Mail:

TO BE COMPLETED BY RESEARCH STAFF:

Date completed (dd/mm/yy): \_\_\_\_\_ Respondent ID: | | | | | | | | | | | | | | | |

#### **Appendix 4.**

Interview: Corporate Bonds in Latvia: Factors that Affect Financial Sector Issuers

### **SECTION 1: ISSUING BONDS**

The following questions explore corporate bonds issuing process of FSIs in Latvia. Please answer the questions in the relevant and explicit way. All questions are placed in logical order.

- 1) What are the reasons for you to issue corporate bond? (please state them in the order of importance where first is the most important and last is the least important)
- 2) Would you like to issue more bonds? What is the ideal level of bond borrowing for you? How do you define the ideal level of bond borrowing?
- 3) What are the reasons for you to issue less corporate bonds than desired? (please state them in the order of importance where first is the most important and last is the least important)
- 4) What are the reasons for you to issue corporate bonds instead of getting a loan or other means of financing? (please state them in the order of importance where first is the most important and last is the least important)
- 5) How would you stage the bond issuing process (e.g. stage 1, stage 2, etc)
- 6) From the stages described, where do you face the most problems, why and which problems?
- 7) From the stages described, where do you face the least problems and why?

### **SECTION 2: REGULATIONS & TAXATION**

The following questions explore effect of regulations and taxation in Latvia as influencing corporate bonds issuing process of FSIs in Latvia. Please answer the questions in the relevant and explicit way. All questions are placed in logical order.

- 8) Which regulations encourage corporate bond issuing? (please state them in the order of importance where first is the most important and last is the least important)
- 9) Which regulations discourage corporate bond issuing? (please state them in the order of importance where first is the most important and last is the least important)
- 10) Do you feel the increasing regulatory environment? How do you value it? How would you comment on it from the perspective of issuing bonds?
- 11) What type of support from the government/FSA would be important for you to issue more?
- 12) What improvements should be made to taxation? (please state them in the order of importance where first is the most important and last is the least important)

### **SECTION 3: CLIENT BASE**

The following questions explore client base of corporate bonds of FSIs in Latvia. Please answer the questions in the relevant and explicit way. All questions are placed in logical order.

- 13) How do you define your client base segment, geography?
- 14) How do you reach your client base and understand the need for your bonds?
- 15) What is the desirable client base for your bonds and why?
- 16) What are the reasons for the clients not investing in your bonds (in bonds in general?)
- 17) How could you reach your desirable client base?
- 18) What can be done to develop the desirable client base from the government side?

Thank you for your answers!

TO BE COMPLETED BY RESEARCH STAFF:

Date completed (dd/mm/yy): \_\_\_\_\_