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TWO-SCENARIO OUTLOOK OF THE EU'S 2020 EMPLOYMENT TARGET FULFILLMENT FOR THE BALTIC COUNTRIES AND 2020 EMPLOYMENT RATES FOR MEN AND WOMEN

MASTER THESIS

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Abstract

This study is focused on the Europe 2020 national employment rate targets for the Baltic countries – Latvia, Lithuania and Estonia. By running regression models and applying the gathered coefficients in an equation for the employment rate, a forecast is made for all three country employment rates, as well as for the male and female employment rates of each country. Two scenarios are proposed, an optimistic and a pessimistic one. The conclusions of the study show that in an optimistic scenario all countries not only fulfil but even exceed the set target. However, in a pessimistic scenario none of the three countries manage to reach the target. For both men and women the employment rates are either at or above the targets in an optimistic scenario and are below in a pessimistic scenario.

Keywords: European Union, Baltic countries, employment rate, Europe 2020, forecast

Anotācija

Šis pētījums ir vērsts uz stratēģijas Eiropa 2020 valsts nodarbinātības līmeņa mērķiem Baltijas valstīs - Latvijā, Lietuvā un Igaunijā. Izveidota nodarbinātības līmeņa prognoze, kas balstīta uz regresijām, kuru iegūtie koeficienti tiek izmantoti nodarbinātības vienādojumam. Šī prognoze tiek iegūta visām trim Baltijas valstīm un visu trīs valstu sieviešu un vīriešu nodarbinātībai. Prognozei pētījums piedāvā divus scenārijus: optimistisku un pesimistisku. Pētījuma rezultāti rāda, ka optimistiskā scenārijā visas valstis ne tikai izpilda, bet pat pārsniedz uzstādītos mērķus. Pesimistiskajā scenārijā nevienai no trim valstīm neizdodas sasniegt noteikto mērķi. Gan vīriešiem, gan sievietēm nodarbinātības līmenis ir vai nu mērķa līmenī vai pat pārsniedz to optimistiskā scenārijā, taču pesimistiskā scenārijā tie visi ir zem noteiktajiem mērķiem.

Atslēgas vārdi: Eiropas Savienība, Baltijas valstis, nodarbinātības līmenis, Eiropa 2020, prognoze

Table of Contents

LIST OF ABBREVIATIONS 5

INTRODUCTION 6

1. EUROPE 2020 STRATEGY AND PRIORITIES 10

1.1 Europe 2020: what is it and how does it relate to employment rate? 10

1.2 New priorities of the Juncker Commission and links with the 2020 strategy 12

1.3 Different funds that are addressing the problem in the Baltics 13

1.4 Economic development of the Baltic countries 16

1.4.1 Latvia 17

1.4.2 Lithuania 23

1.4.3 Estonia 28

2. INDICATORS PRESENTED IN THE RESEARCH 35

2.1 Dependent variable: employment rate 35

2.2 Independent indicators affecting employment rate 37

2.2.1 Education 37

2.2.2 GDP per capita 38

2.2.3 Population structure 39

2.2.4 Minimum wage 40

2.2.5 Gender gap 40

2.3 Forecast reasoning for the optimistic and pessimistic scenarios 41

3. METHODOLOGY 47

3.1 Pre-forecast methodology 47

3.1.1 Research design 47

3.1.2 The regression model of the study 49

3.2 Forecast methodology 51

3.2.1 Description of the forecast model 51

3.2.2 Assumptions for optimistic and pessimistic scenarios 52
3.3 Applied data and its sources 52
4. ANALYSIS AND DISCUSSION OF RESULTS 61
4.1 Regression results on total, male and female employment rates 61
4.2 Optimistic and pessimistic forecast scenario results 65
4.3 Result summary: answers to set hypothesis and research questions 77
5. LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH 80
CONCLUSIONS 82
RECOMMENDATIONS 85
BIBLIOGRAPHY 87

LIST OF ABBREVIATIONS

GDP – gross domestic product

USSR - Union of Soviet Socialist Republics

EU – the European Union

USA – the United States of America

WEF – World Economic Forum

ESF – European Social Fund

OECD - Organization for Economic Cooperation and Development

OLS - ordinary least squares

ERDF - European regional development fund

CF - Cohesion fund

INTRODUCTION

With the nearing of end of quantitative easing in Europe[1] and the Brexit bringing uncertainties of future employment in the UK[2] it is more important than ever to discuss employment, as it is the basis of any economy. Without employment increase after the crisis there is a risk of people drifting into long-term joblessness, which is much more difficult to get out of compared to a short run unemployment[3]. Ties between the European Union and the Baltic countries – Latvia, Lithuania and Estonia predate accession in 2004. All three of the Baltic countries regained their independence in 1991. After a long period under the control of the Soviet Union the three countries were left with little know how and democratic political structures[4]. With the Russian financial crisis striking all three countries in 1998[5] there was great uncertainty ahead for the Baltic countries. Joining the EU in 2004[6] was a transformative moment for all of them, it

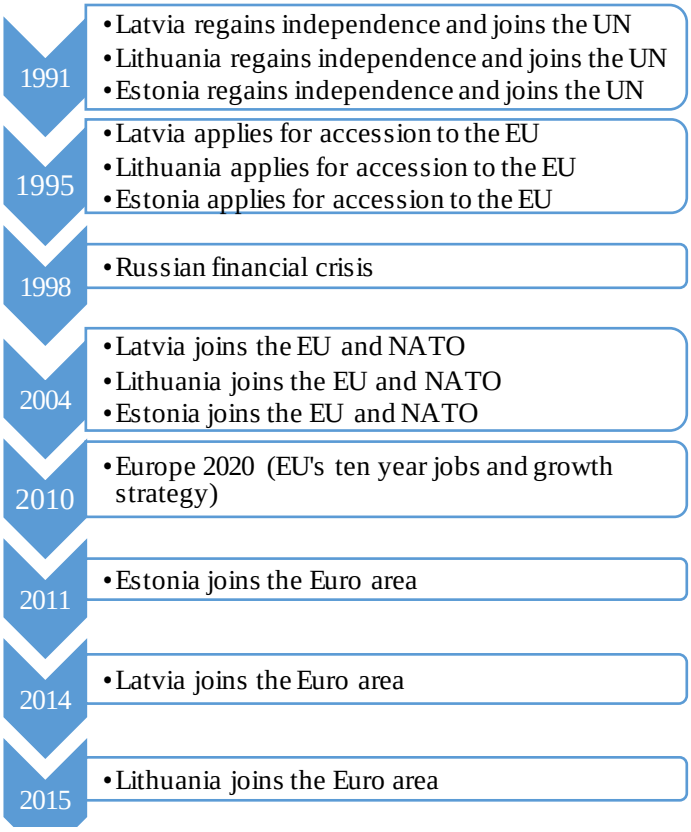

Figure 1 **Short timeline for the Baltic countries**
Source: Created by author

[1] Graeme, W. (2016, December 8). Markets soar as ECB extends QE programme until December 2017 – as it happened. The Guardian. Retrieved April 4, 2017, from https://www.theguardian.com/business/live/2016/dec/08/ecb-stimulus-qe-draghi-italy-bank-rescue-business-live

[2] Warrell, H., & Raptopoulos, L. (2016, October 28). EU citizens in UK fear for jobs ahead of Brexit talks. Financial Times. Retrieved April 5, 2017, from https://www.ft.com/content/84a8b21e-9c32-11e6-8324-be63473ce146

[3] Martin, J. P. (2009). Jobs Crisis. OECD Observer. Retrieved March 30, 2017, from http://oecdobserver.org/news/archivestory.php/aid/3065/Jobs_crisis.html

[4] Kratovits, A., & Punning, J.-M. (2001, November). Driving forces for the formation of environmental policy in the Baltic countries. *Ambio, 30*(7), pp. 443-449. Retrieved April 1, 2017, from http://www.jstor.org/stable/4315180

[5] Fic, T., & Saqib, O. F. (2006, December). Political Instability and the August 1998 Ruble Crisis. *Journal of Economic Integration, 21*(4), pp. 764-783. Retrieved March 30, 2017, from http://www.jstor.org/stable/23001136

[6] European Commission. (2007). The 2004 enlargement: the challenge of a 25-member EU. Retrieved April 5, 2017, from http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3Ae50017

meant that they were part of something bigger. In preparation to join the EU, the countries had to fulfil the Copenhagen criteria[7], which inevitably led to more democratisation and stabilization. After the financial crisis in 2008, a European Stability Mechanism was introduced in order to avoid such a crisis in the future[8]. Also, recently all three have joined the Euro area, Estonia in 2011, Latvia in 2014 and Lithuania in 2015[9].

As members of the EU, they have their tasks and obligations. In 2010 the Europe 2020 sustainable growth strategy was launched. This set out 5 targets to be reached by the end of 2020[10]. The five are as follows[11]:

1. Employment:
    - 75% of 20-64 year-olds to be employed.
2. R&D / innovation:
    - 3% of the EU's Gross Domestic Product to be invested in research and development/innovation.
3. Climate change / energy:
    - greenhouse gas emissions 20%- 30% lower than in 1990;
    - 20% of energy generated from renewables;
    - 20% increase in energy efficiency.
4. Education:
    - Reduction of school drop-out rates to below 10%;
    - Completed third level education for at least 40% of 30-34–year-olds.
5. Poverty / social exclusion:
    - at least 20 million fewer people in/at risk of poverty and social exclusion.

[7] European Commission. (2016). *European Neighbourhood Policy And Enlargement Negotiations - Conditions for membership*. Retrieved March 27, 2017, from https://ec.europa.eu/neighbourhood-enlargement/policy/conditions-membership_en

[8] European Stability Mechanism. (2017). *How We Work*. Retrieved April 3, 2017, from https://www.esm.europa.eu/about-us/how-we-work

[9] European Commission. (2017). *EU Countries and the euro*. Retrieved March 29, 2017, from https://ec.europa.eu/info/business-economy-euro/euro-area/euro/eu-countries-and-euro_en

[10] European Commission. (2016). *Europe 2020 in a nutshell*. Retrieved March 29, 2017, from http://ec.europa.eu/europe2020/europe-2020-in-a-nutshell/index_en.htm

[11] European Commission. (2011). *Europe 2020 targets*. Retrieved March 30, 2017, from http://ec.europa.eu/europe2020/targets/eu-targets/index_en.htm

Europe 2020 is financed via the EU's budget, where the budget is divided across different activities to fulfil this strategy[12]. These targets are set for the EU as a whole, but in order to reach these targets there are also country level goals/ national targets set. This study further examines the employment goals for the Baltic countries. In Estonia the target employment rate is 76%, Latvia – 73% and Lithuania – 72.8%[13]. Progress towards target fulfilment is monitored via the European Semester, the last report being published in 2016, with the focus on the EU target fulfilment and less so of the national targets[14]. What is more in 2014 the European Commission had published a "Communication taking stock of the Europe 2020 strategy"[15], with a discussion on what has been accomplished four years into the strategy. Moreover, in the recently published "Social dimension of Europe" it is said that people have doubts about whether Europe is able to shape the future and deliver a fair and prosperous society. The paper discusses worries about aging population and low employment rate of young people, as well as, discrepancies between countries and regions within.[16] The paper also discusses There are three years left until the targets must be reached, thus the question is, will the targets set for Latvia, Estonia, Lithuania be reached by the end of 2020 in both optimistic and pessimistic scenarios?

The aim of the study is to:

- propose a model that would show how different variables (education, GDP per capita, population, minimum wage, gender pay gap) can have different effects on the employment rate and depict in two scenarios (optimistic and pessimistic) whether the Europe 2020 employment target for the Baltic countries would be met and what would be the employment rates for men and women in the Baltic countries

To accomplish the aim of the study, the following tasks are carried out:

- provide analysis of the existing literature on the employment situation in the Baltic countries including factors that influence the employment rate;

[12] Sauter, R., Illés, A., & Nunez, J. (2014, February). *Financing Europe 2020: a consolidated view*. European Committee of the Regions. doi:10.2863/9554

[13] European Commission. (2014). Overview of Europe 2020 Targets. Retrieved April 1, 2017, from http://ec.europa.eu/europe2020/pdf/targets_en.pdf

[14] Eurostat. (2016). *Smarter, greener, more inclusive — indicators to support the Europe 2020 strategy*. doi:10.2785/101636

[15] European Commission. (2014). *Taking stock of the Europe 2020 strategy for smart, sustainable and inclusive growth*. Retrieved March 31, 2017, from http://ec.europa.eu/europe2020/pdf/europe2020stocktaking_en.pdf

[16] European Commission. (2017). Social Dimension of Europe. Bruxelles. Retrieved April 4, 2017, from https://ec.europa.eu/commission/sites/beta-political/files/reflection-paper-social-dimension-europe_en.pdf

- collect necessary data and develop a methodology for the study, as well as provide assumptions behind the optimistic and pessimistic scenarios;
- following a regression model output, generate a forecast for the total employment rate, male employment rate and female employment rate;
- analyse the results and answer the set hypotheses and research questions.

The research questions in this paper are the following:

1. Will the Europe 2020 national level targets be reached in all three country cases in both scenarios (optimistic/pessimistic)?
2. What are the expected employment rates for men and women in the Baltic countries in both scenarios (optimistic/pessimistic)?

Research methods. Data collected for this research is mixed – qualitative and quantitative methods. For the first part of the work qualitative methods are applied, however, quantitative methods take over the methodological section and result generation.

The rest of the paper is structured as follows:

Section 1 presents the background information giving a background information on the economic dimension development in the Baltic countries; section 2 presents the literature review covering the chosen variables and their impact on employment rate as well as basis for two scenarios; section 3 presents the hypotheses and covers methodology; section 4 presents the main findings, the analysis and discussion of the results; section 5 presents the limitations and suggestions for further research; section 7 concludes and gives recommendations.

1. EUROPE 2020 STRATEGY AND PRIORITIES

1.1 Europe 2020: what is it and how does it relate to employment rate?

The basis for the EU restructuring for development after the crisis was set in the Lisbon Treaty that came into force in 2009, followed by the adoption of the Europe 2020 Strategy in 2010[17]. To foster the set targets (previously listed in the introduction) the Commission provides for three priorities (smart, sustainable and inclusive growth) and seven flagship initiatives[18]:

- Innovation Union – created to foster improvements in the framework as well as access financial support for innovation and research that would foster economic growth or increased employment, programmes like EURACESS, Horizon 2020, etc.[19]
- Youth on the move – introduces various EU funded study programmes or learning projects or training programmes or assists in finding a job in Europe[20]
- A digital agenda for Europe – the objective of it is to develop and introduce the single digital market to foster sustainable, inclusive and smart growth throughout Europe[21]
- Resource efficient Europe – outlining technological, as well as structural changes necessary for sustainable growth, meaning, taking into account the environment around us[22]

[17] Marlier, E., & Natali, D. (2010). *Europe 2020: Towards A More Social EU?* Bruxelles: Peter Lang.

[18] European Commission. (2010). *Europe 2020: A strategy for smart, sustainable and inclusive growth.* Retrieved April 1, 2017, from http://ec.europa.eu/eu2020/pdf/COMPLET%20EN%20BARROSO%20%20%20007%20-%20Europe%202020%20-%20EN%20version.pdf

[19] European Commission. (2017). *Innovation Union*. Retrieved March 29, 2017, from http://ec.europa.eu/research/innovation-union/index_en.cfm?pg=home

[20] European Commission. (2015). *Youth on the Move*. Retrieved March 29, 2017, from http://ec.europa.eu/youthonthemove/

[21] European Committee of the Regions. (2017). *Digital Single Market: Europe 2020 strategy*. Retrieved April 4, 2017, from https://ec.europa.eu/digital-single-market/en/europe-2020-strategy

[22] European Committee of the Regions. (2017). *Environment: Resource Efficiency*. Retrieved April 5, 2017, from http://ec.europa.eu/environment/resource_efficiency/index_en.htm

- An industrial policy for the globalisation era – the Commission provides for a tailor made approach taking into account the value and supply chains and having regular reporting[23]
- An agenda for new skills and jobs – this is aimed at improving the labour market reforms as well as improving people's skills and encourage new job creation; in many of the member states the authorities assist in people's training, job seeking, etc., but these activities can also be co-financed by the ESF (European Social Fund)[24]
- European platform against poverty and social exclusion – this includes support for minimum wage, education, healthcare etc.; investment in the development of human capital, using ESF to fight against poverty and social exclusion, enhance policy coordination amongst the union countries and create better social policy reforms[25]

As shown by the CEDEFOP projections the employment growth rate from 2010 to 2020 according to qualification in all EU is quite dramatic, with some exceptions, where the growth is even negative (see below).

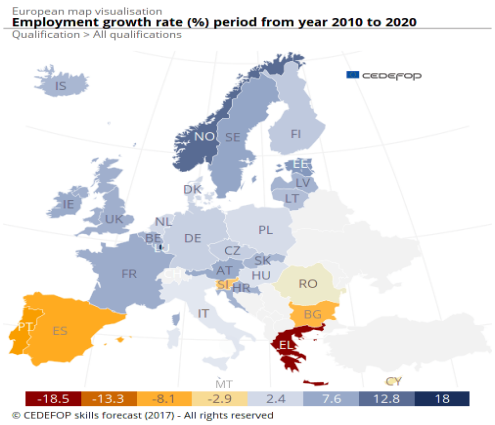

Figure 1.1 **Employment rate growth rate (%) period from year 2010 to 2020**
Source: European Centre for Development of Vocational Training[26]

[23] European Committee of the Regions. (2014). An integrated industrial policy for the globalisation era. Retrieved April 7, 2017, from http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV%3Aet0005

[24] European Committee of the Regions. (2013). *The EU's Assembly of Regional and Local Representatives: An agenda for new skills and jobs*. Retrieved April 5, 2017, from http://cor.europa.eu/en/policies/growth-and-jobs/Pages/agenda-new-skills-jobs.aspx

[25] European Commission. (2017). *European platform against poverty and social exclusion*. Retrieved March 29, 2017, from http://ec.europa.eu/social/main.jsp?catId=961

[26] European Centre for the Development of Vocational Training. (2017). Employment trends: 2016 Skills forecast. Retrieved April 1, 2017, from http://www.cedefop.europa.eu/en/publications-and-resources/data-visualisations/employment-trends

1.2 New priorities of the Juncker Commission and links with the 2020 strategy

The 10 new priorities of the European Commission are the following:

- Jobs, growth and investment;
- Digital single market;
- Energy union and climate;
- Internal market;
- A deeper and fairer economic and monetary union;
- A balanced EU-US free trade agreement;
- Justice and fundamental rights;
- Migration
- A stronger global actor;
- Democratic change[27].

It can be seen that the employment and job creation itself has not lost its importance to the European Commission as it continues to be one of the main priorities. However, it is important to note that in this bundle of priorities the focus is on youth employment and ways to increase it. In 2015 it was announced that 1 billion euro were available for the young and unemployed persons in order to strengthen Europe's competitiveness, create jobs and stimulate investment[28]. Under the new commission all member states have committed to provide people under 25 with trainings, apprenticeships and good quality jobs, which is carried out through the "Youth Guarantee"[29]. Sadly, there has been little progress in the area since 2016 in Latvia[30]; Estonia, on the other hand, has been shown as one of the best performing countries in the EU with decreasing youth unemployment rates and number of people not in education, employment or training, but the country faces difficulties with early school leavers[31]; certain steps have been taken in Lithuania in

[27] European Commission. (2017). *Priorities*. Retrieved March 29, 2017, from https://ec.europa.eu/commission/priorities_en

[28] European Commission. (2015, February 4). Juncker Commission makes 1 billion euro available for the young unemployed. Retrieved April 7, 2017, from http://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=2173&furtherNews=yes

[29] European Commission. (2017, January 12). *Youth Guarantee*. Retrieved April 5, 2017, from http://ec.europa.eu/social/main.jsp?catId=1079&langId=en

[30] European Commission. (2016, December 7). *The Youth Guarantee country by country - Latvia*. Retrieved April 5, 2017, from http://ec.europa.eu/social/main.jsp?catId=1161&langId=en&intPageId=3341

[31] European Commission. (2016, December 7). *The Youth Guarantee country by country - Estonia*. Retrieved April 5, 2017, from http://ec.europa.eu/social/main.jsp?catId=1161&langId=en&intPageId=3331

order to improve the labour market relevance of education, as there are discrepancies in wages when it comes to people with different education levels[32].The European Commission reported in their Annual Growth Survey 2017 that if the current employment rate growth trend continues, the set employment target could be reached[33].

1.3 Different funds that are addressing the problem in the Baltics

At the first glance, the five European structural funds might seem unrelated to the employment. However, they are indeed fostering greater employment through different instruments. The five funds are: European regional development fund (ERDF), European social fund (ESF), Cohesion fund (CF), European agricultural fund for rural development, European maritime and fisheries fund[34]. Through the enhancement and development of these funds, a more favourable work environment is created and thus, the employment is rising.

The European social fund is an instrument created in 1957 for helping people with getting better jobs and having fairer job opportunities for all European Union's citizens. It works through investment in human capital[35]. This instrument is crucial for reaching the Europe 2020 target for employment. There are four core activities for the fund: strengthening employment and mobility, better education, giving a chance to all, better public service. The first - strengthening employment and mobility is focused on boosting job creation, supporting job seekers and helping people in work across Europe through training, organization of open days to reduce prejudice about some jobs [36], career guidance as well as CV writing and interview skills[37], it also has training for entrepreneurs and self-employed[38], as well as supporting worker mobility schemes to

[32] European Commission. (2016, December 7). *The Youth Guarantee country by country - Lithuania*. Retrieved April 5, 2017, from http://ec.europa.eu/social/main.jsp?catId=1161&langId=en&intPageId=3342

[33] European Commission. (2016, November 16). Annual Growth Survey 2017. Brussels. Retrieved May 4, 2017, from https://ec.europa.eu/info/sites/info/files/2017-european-semester-annual-growth-survey_en_0.pdf

[34] European Commission. (2017). European structural and investment funds. Retrieved April 4, 2017, from https://ec.europa.eu/info/funding-tenders/european-structural-and-investment-funds_en#thefunds

[35] European Commission. (2016). *What is the ESF?* Retrieved March 30, 2017, from http://ec.europa.eu/esf/main.jsp?catId=35&langId=en

[36] European Commission. (2013). *Opening Pathways to Work*. Retrieved April 5, 2017, from http://ec.europa.eu/esf/main.jsp?catId=533&langId=en

[37] European Commission. (2015). *Creating Chances for Youth*. Retrieved April 2, 2017, from http://ec.europa.eu/esf/main.jsp?catId=534&langId=en

[38] European Commission. (2013). *Boosting Business*. Retrieved March 31, 2017, from http://ec.europa.eu/esf/main.jsp?catId=457&langId=en

foster region development[39] and many other things. The second – better education where the fund helps by reducing early school-leaving, offering language skills and providing catch-up teaching[40]. Third – giving a chance to all, this is mainly related to the Roma inclusion of children into society[41]. And lastly – better public service: the program provides for training for public servants to increase their know-how in customer oriented services and modern management systems[42] as well as support of networking between education institutions, NGOs that deal with employment etc.[43]

In Latvia the funds have been used in various ways, for instance there are projects for educating the elderly in order to keep them competitive in the labour market[44]. The fund is nevertheless very much youth oriented, focusing on how to educate the youth and provide them with career opportunities. As well as supporting the teachers through this program – both, by upgrading their workplace as well as keeping them interested in staying in the regions, and providing student scholarships and providing project management and accounting training among others[45].

After the financial crisis of 2008, the people of Lithuania were greatly dissatisfied with their government as it could not protect them from poverty the voters needed evidence that they can trust the government when it comes to employment issues[46]. At the beginning of 2014 work began in Lithuania on a new social model. This included new regulatory legislation in the

[39] European Commission. (2013). *Caring for Careers*. Retrieved March 31, 2017, from http://ec.europa.eu/esf/main.jsp?catId=535&langId=en

[40] European Commission. (2013). *Opening Doors to Learning*. Retrieved April 6, 2017, from http://ec.europa.eu/esf/main.jsp?catId=528&langId=en

[41] European Commission. (2013). *Fighting Marginalisation*. Retrieved April 6, 2017, from http://ec.europa.eu/esf/main.jsp?catId=63&langId=en

[42] European Commission. (2013). *More Effective Institutions*. Retrieved March 29, 2017, from http://ec.europa.eu/esf/main.jsp?catId=526&langId=en

[43] European Commission. (2013). Partnership for Progress. Retrieved April 1, 2017, from http://ec.europa.eu/esf/main.jsp?catId=527&langId=en

[44] Eiropas Komisija. (2015). *ESF Latvijā*. Retrieved April 4, 2017, from http://ec.europa.eu/esf/main.jsp?catId=389&langId=lv

[45] Pierīgas izglītības, kultūras un sporta pārvalde. (2009). ESF PROJEKTI. Eiropas Sociālais Fonds (ESF). Retrieved April 5, 2017, from http://www.ikspieriga.lv/index.php?menu=40801&page=4&lang=lv

[46] Vaughan-Whitehead, D. e. (2017). *The European social model in crisis : is Europe losing its soul?* Geneva: International Labour Office. Retrieved April 1, 2017, from https://books.google.lv/books?id=JcPiBwAAQBAJ&pg=PA88&lpg=PA88&dq=european+social+model+in+lithuania&source=bl&ots=PUk5FTFdre&sig=tEt7v6lGadMvdW14HZOIQGa0baI&hl=lv&sa=X&ved=0ahUKEwjwk4_jtoHTAhWoKJoKHWDIDQIQ6AEIUjAF#v=onepage&q=european%20social%20model%20

employment area amongst others. The purpose of it was to increase labour flexibility whilst keeping in mind the security of employees[47]. There is quite a bit of success for the program in Lithuania as it has trained thousands and has provided people with crucial loans, and has helped reduce exclusion and at the same time create new jobs[48].

The focus in Estonia was on getting more people working, this is done though cost sharing with the companies who deal with employee training, as well as encouraging vocational training for drop-outs, moreover, they focus on potential career development by encouraging lifelong learning[49]. Another way Estonia uses this fund is through social inclusion – encouraging people to participate into the labour market, specifically youngsters and disadvantaged groups[50].

In Latvia, the multi-fund programme "Growth and Employment" combines the ERDF, ESF, CF and the specific allocation for the Youth Employment Initiative (YEI) to foster growth in employment. The priorities of the program are: to support RTD and innovation, promoting information society; supporting the competitiveness and innovation of small and medium sized enterprises; supporting the shift towards a low-carbon economy in various sectors; environment as well as, sustainable use of natural resources and adaptiveness to climate change; development of sustainable and efficient transport infrastructure; education, skills and lifelong learning; promotion of employment and work force mobility; and social inclusion and fighting against poverty[51]. In Estonia the Operational Programme for Cohesion Policy Funding 2014-2020 brings together the ERDF, ESF and the CF with many priorities some of which are: increase of research , technological development, innovation to foster higher investment in R&D; invest in reformation of the general education network and improvement of access to high-quality education; reforming the working ability assessment to reach an employment rate of 76%; social inclusion and reduction of people in poverty; increasing employee productivity in order to

[47] Blaziene, I. (2015, September 4). Lithuania: Unions protest at new draft social model law. Eurofound. Retrieved April 1, 2017, from https://www.eurofound.europa.eu/observatories/eurwork/articles/industrial-relations-law-and-regulation/lithuania-unions-protest-at-new-draft-social-model-law

[48] European Commission. (2012). Lithuania and the European Social Fund. Retrieved March 30, 2017, from ec.europa.eu/esf/BlobServlet?docId=103&langId=en

[49] European Commission. (2012). Estonia and the European Social Fund. Retrieved March 30, 2017, from ec.europa.eu/esf/BlobServlet?docId=94&langId=en

[50] European Commission. (2015). *The ESF in Estonia*. Retrieved April 1, 2017, from http://ec.europa.eu/esf/main.jsp?catId=377

[51] European Commission. (2017, May 4). *Growth and Employment: Latvia*. Retrieved May 4, 2017, from http://ec.europa.eu/regional_policy/EN/atlas/programmes/2014-2020/latvia/2014lv16maop001

increase SME competitiveness; introducing smart provisions of public services and others[52]. In Lithuania the Operational Programme for EU Structural funds Investments for 2014-2020 was created to, amongst other things, tackle unemployment rate through the promotion of sustainable and quality employment and supporting labour mobility, which is linked to the modernisation and development of transport and energy infrastructure as well as improving general and higher education attainment and many others[53].

1.4 Economic development of the Baltic countries

Gaining sovereignty is something most countries strive for - the freedom, the ability to decide for themselves, to make a system that fits their wants, needs and desires. However, as everything, this also comes at a price. The price of not knowing how everything is going to work in the future, who is responsible for what, how is this change going to affect you and worst of all, you do not even know who to ask any of these questions actually. It is a form of a new world where everything can and should be questioned - is good actually good and is bad actually bad?

After regaining sovereignty from the Soviet Union all three Baltic countries underwent a political and socio-economic restructuring. All three of them adopted parliamentar constitutions.[54] They decided on what their laws are going to be, how high or low the taxes should be, how to go about social development – define fundamental social rights, social protection, social and employment regulation, etc.[55] All three countries have been though a turmoil of development since then. The Baltic countries joined the EU in 2004[56]. The financial economic crisis hit in 2008, Estonia became a member of the Eurozone in 2011, Latvia – 2014, Lithuania – 2015[57]. To understand what has happened in all three of the Baltic countries with regard to employment, a further examination is made.

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[52] European Commission. (2017, May 4). *Operational Programme for Cohesion Policy Funding 2014-2020: Estonia*. Retrieved May 4, 2017, from http://ec.europa.eu/regional_policy/EN/atlas/programmes/2014-2020/estonia/2014ee16m3op001

[53] European Commission. (2017, May 4). *Operational Programme for EU Structural Funds Investments for 2014-2020: Lithuania*. Retrieved May 4, 2017, from http://ec.europa.eu/regional_policy/EN/atlas/programmes/2014-2020/lithuania/2014lt16maop001

[54] Politics & Government. (2007). Baltic States Country Profile. Retrieved February 25, 2017

[55] European Trade Union Confederation. (2006, July). The European Social Model. Retrieved April 6, 2017, from https://www.etuc.org/european-social-model

[56] European Commission. (2017). *The history of the European Union: Further expansion*. Retrieved April 7, 2017, from https://europa.eu/european-union/about-eu/history/2000-2009_en

[57] European Commission. (2017). *Money and the EU: The euro*. Retrieved March 28, 2017, from https://europa.eu/european-union/about-eu/money/euro_en#euro

1.4.1 Latvia

With the approval of the Declaration On the Restoration of Independence of the Republic of Latvia 4 May 1990, the country went through a period of transformation from being part of the USSR to completely independent country. The beginning was tough, when between 1990 and 1993 the country was on the verge of having hyperinflation. This was due to the changing environment, when there was a great downturn in the industrial and agricultural sectors. The level of GDP improved over the next couple of years, but the country was still quite influenced by the banking crisis in 1995 and Russian financial crisis in 1998. Around the 2000s as Latvia was preparing to be part of the EU it had to harmonize its legislation and adjust its economy. After accession in 2004 the GDP growth was increasing quite rapidly, but was again hit by the financial crisis in 2008. Since then GDP has slowly been increasing and stabilizing[58].

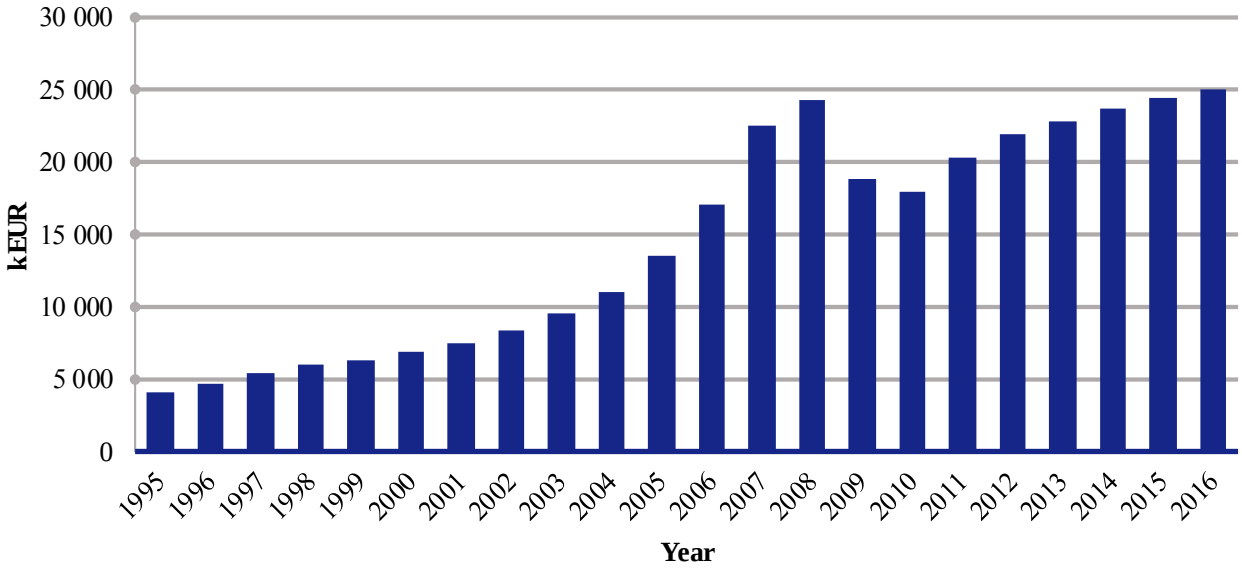


Figure 1.2 **Total GDP at current prices, kEUR**
Source: Central Statistical Bureau of Latvia (CSB)[59]

Of course GDP growth is closely linked with the wages in the country, but it is interesting to see that as opposed to GDP, minimum wages have not fluctuated as much. The minimum wage

[58] Bitāns, M., & Purviņš, V. (2012). *The Development of Latvia's Economy (1990–2004)*. Riga: Latvijas Banka. Retrieved April 7, 2017, from https://www.bank.lv/images/stories/pielikumi/publikacijas/citaspublikacijas/Bitans_Purvins_EN.pdf

[59] Central Statistical Bureau of Latvia (CSB). (2017, March 24). Gross domestic product, code [IKG10_01]. Retrieved April 1, 2017, from http://data.csb.gov.lv/pxweb/en/ekfin/ekfin__ikgad__ikp/IK10_0010.px/?rxid=cdcb978c-22b0-416a-aacc-aa650d3e2ce0

before taxes increased drastically right before the financial crisis – in 2006, but has since the crisis stayed level with a slight increase in the past couple of years.

Figure 1.3 **Minimum wage before taxes, EUR**
Source: Vienotie Internet Dati (VID)[60]

But whilst the economy might be growing and getting better according to the wage graph above, it is important to see that not all public is the same. For instance the gender wage gap is as prominant as always and has in fact increased[61]. It is argued that this gap predominantly comes from women's choice of work industry, they usually choose to work in industries that have lower salaries, like education and social care[62]. Moreover, prior to EU accession in 2004 wage flexibility was viewed as a strong factor influencing employment in Latvia[63].

[60] Vienotie Internet Dati (VID). (2017). *Minimālās Algas Likmes*. Retrieved March 30, 2017, from http://www.vid.lv/minim2571257-alga.html

[61] European Commission. (2013). *Tackling the gender pay gap in the European Union*. Luxembourg: Publications Office of the European Union. doi:10.2838/22962

[62] Baltic New Network. (2013, March). Latvia's gender pay gap is smaller than average in EU. Retrieved April 7, 2017, from http://bnn-news.com/latvias-gender-pay-gap-smaller-average-eu-90247

[63] Eurostat. (2017, January 31). *Statistics explained: Employment statistics*. Retrieved March 29, 2017, from http://ec.europa.eu/eurostat/statistics-explained/index.php/Employment_statistics

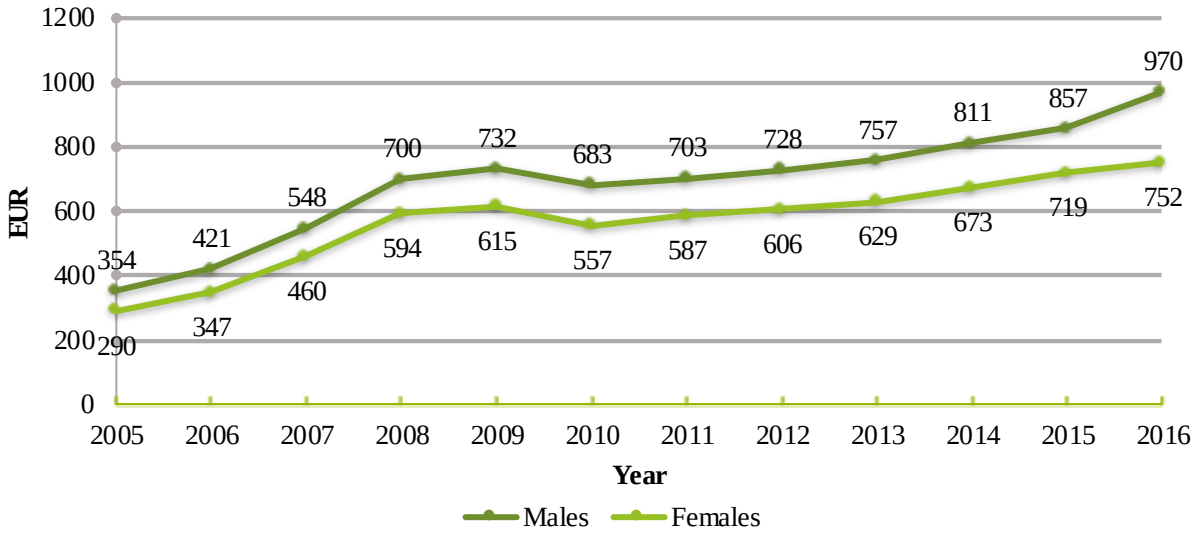


Figure 1.4 **Average monthly gross wage by gender, EUR**
Source: Statistical Bureau of Latvia (CSB)[64]

The population has drastically changed since the regaining of independence. It has gone from 2.7 million inhabitants in 1990[65] to 2.0 million in 2016[66]. The age pyramid clearly depicts the necessity of both high employment and larger population. The number of people aged 64+ has very much increased since 1990. At the same time, the population in age groups below 60 have drastically decreased, making the dependency ratio quite different from that in 1990. It is also interesting to see that until the age of around 60, the male to female ratio is quite stable.

[64] Central Statistical Bureau of Latvia (CSB). (2017, February 27). Monthly gross wages and salaries by sex and kind of activity (in 1st quarter; in euro), code [DSG04]. Retrieved April 3, 2017, from http://data.csb.gov.lv/pxweb/lv/Sociala/Sociala__ikgad__dsamaksa/DS0040_euro.px/?rxid=562c2205-ba57-4130-b63a-6991f49ab6fe

[65] The World Bank Group. (2017). Latvia. Retrieved March 27, 2017, from http://data.worldbank.org/country/latvia

[66] Central Statistical Bureau of Latvia (CSB). (2016). *Demography 2016*. Retrieved April 4, 2017, from http://www.csb.gov.lv/sites/default/files/nr_11_demografija_2016_16_00_lv_en.pdf

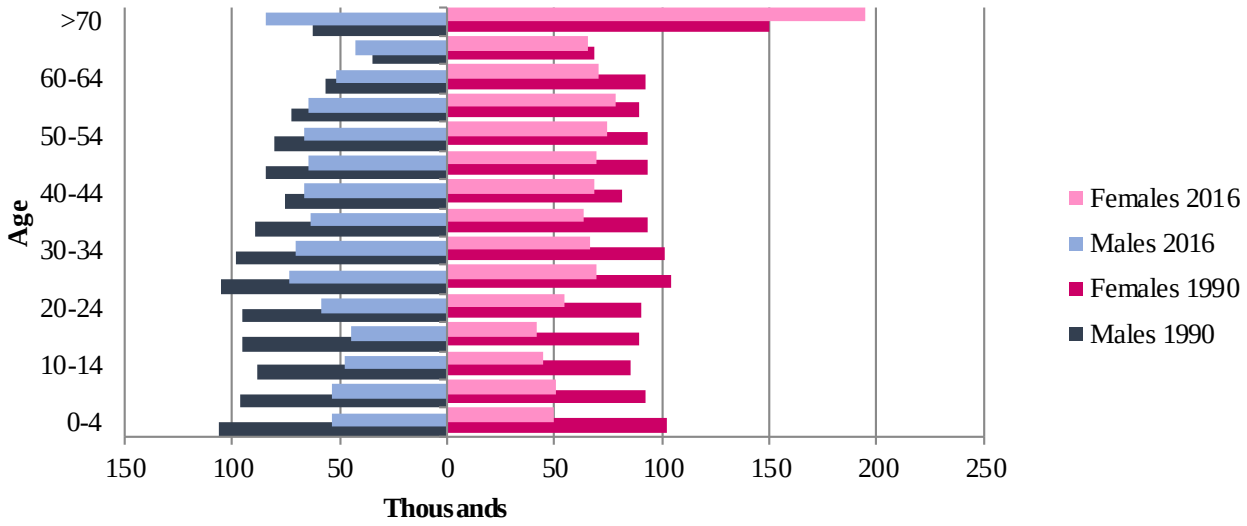


Figure 1.5 **Populatio pyramid (Latvia)**
Source: Statistical Bureau of Latvia (CSB)[67]

In order to increase the employment rate, it is important to look at the education level of the population. As education has been linked to employment by many researchers[68]. EU countries are continuously trying to increase youth employment[69]. One of the ways that they have come up with to deal with this is the – Youth Employment Guarantee scheme which aims to secure a smoother transition into the labour market after graduation, support integration into the workforce and leave no youngster behind[70]. In Latvia, you can take up a new profession and get both a student grant from the program as well as unemployment benefits[71]. But this is a scheme, that has been active only since 2015[72], meaning that the real benefits from it will be felt in a number of years. Perhaps this will be the necessary impetus to reach the employment target. In the past

[67] Central Statistical Bureau of Latvia (CSB). (2016, June). Population by sex and age at the beginning of year, code [ISG06]. Retrieved March 28, 2017, from http://data.csb.gov.lv/pxweb/lv/Sociala/Sociala__ikgad__iedz__iedzskaits/IS0060.px/?rxid=cd

[68] Lie, K. Y., Pang, V., & Mansur, F. (2008). *Employer Perceptions on Graduate Literacies in Higher Education in Relation to the Workplace*. Universiti Kebangsaan Malaysia, Universiti Malaysia Sabah. Retrieved March 28, 2017, from http://www.esp-world.info/Articles_20/DOC/Koo_vp_employer_Journal18Oct09.pdf

[69] Eiropas Komisija. (2015, November 26). *Komisijas un padomes vienotā nodarbinātības ziņojuma projekts, kas pievienots Komisijas paziņojumam par 2016. gada izaugsmes pētījumu.* Retrieved April 7, 2017, from http://ec.europa.eu/europe2020/pdf/2016/ags2016_draft_joint_employment_report_lv.pdf

[70] Eiropas Savienības Padome. (2016, December). *Garantija jauniešiem*. Retrieved April 6, 2017, from http://www.consilium.europa.eu/lv/policies/youth-employment/youth-guarantee/

[71] Valsts izglītības attīstības aģentūra. (2017, March). *Vai Jauniešu garantija der man?* Retrieved March 28, 2017, from http://viaa.gov.lv/lat/es_fondu_projekti/jauniesugarantija/jg_uznemsanas_noteikumi/

[72] Valsts izglītības attīstības aģentūra. (2017, March). *Projekts "Sākotnējās profesionālās izglītības programmu īstenošana Jauniešu garantijas ietvaros"*. Retrieved April 5, 2017, from http://viaa.gov.lv//lat/es_fondu_projekti/jauniesugarantija/par_jauniesu_garantiju/

couple of years there has been a downturn in both tertiary and bachelor level educations and a slight increase in lower secondary and master's level education.

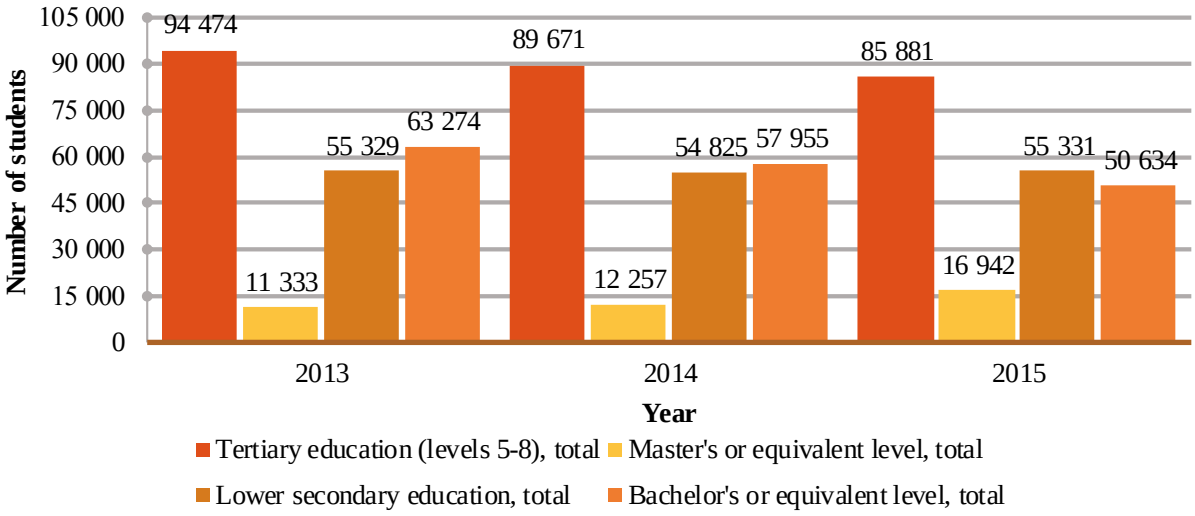


Figure 1.6 **Students enrolled in different education levels**
Source: Eurostat [73,74]

It has also been argued that there may be some employment benefits from increased trade, such as better paying jobs, better specialization where different countries have a comparative advantage etc.[75] However, proving the linkages is challenging.

Combining all this together, the question is, how has the employment rate changed over the years? With regard to differences between sexes – there has always been a gender gap but it seemed to have shrunk after the financial crisis of 2008 and are rather low the past few years[76]. Still, the employment rate for females is consistently that below males. In the graph four periods have been emphasized, the beginning in 1996, when the employment rate was 48%. Followed by

[73] European Commission and Eurostat online database. (2017, April). Students enrolled in tertiary education by education level, programme orientation, sex, type of institution and intensity of participation, code [educ_uoe_enrt01]. Retrieved May 3, 2017, from http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ_uoe_enrt01&lang=en

[74] European Commission and Eurostat online database. (2017, April 28). "Pupils enrolled in lower-secondary education by programme orientation, sex, type of institution and intensity of participation, code [educ_uoe_enrs01]. Retrieved May 3, 2017, from http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ_uoe_enrs01&lang=en

[75] World Trade Organization. (2017). *3 The WTO can ... stimulate economic growth and employment*. Retrieved April 7, 2017, from https://www.wto.org/english/thewto_e/whatis_e/10thi_e/10thi03_e.htm

[76] Eurostat. (2017, January 31). *Statistics explained: Employment statistics*. Retrieved March 29, 2017, from http://ec.europa.eu/eurostat/statistics-explained/index.php/Employment_statistics

a financial crisis in Russia in 1998[77]. According to the Lisbon strategy in 2000 the employment rate in Latvia should have been 70% by 2010. Surely the financial crisis was not part of the plan, but it is quite visible that had it not happened, Latvia might have reached its target, as the employment rate in 2008 was at 62%[78]. 2004, when Latvia joined the EU, when the employment rate was at 55%, followed by a drop after the financial crisis. The fact that the employment rate dropped very drastically only 2 years post crisis is not at all surprising, as many things in economy, employment has also a lag. This is easily explained by the fact that even if companies are aware that there is a crisis going on, they might need time to figure out how their costs to revenue have changed and this comes only with time. Leading us to the latest date for 2016 – employment rate at 62%, which is exactly where it was when the financial crisis hit it 2008.

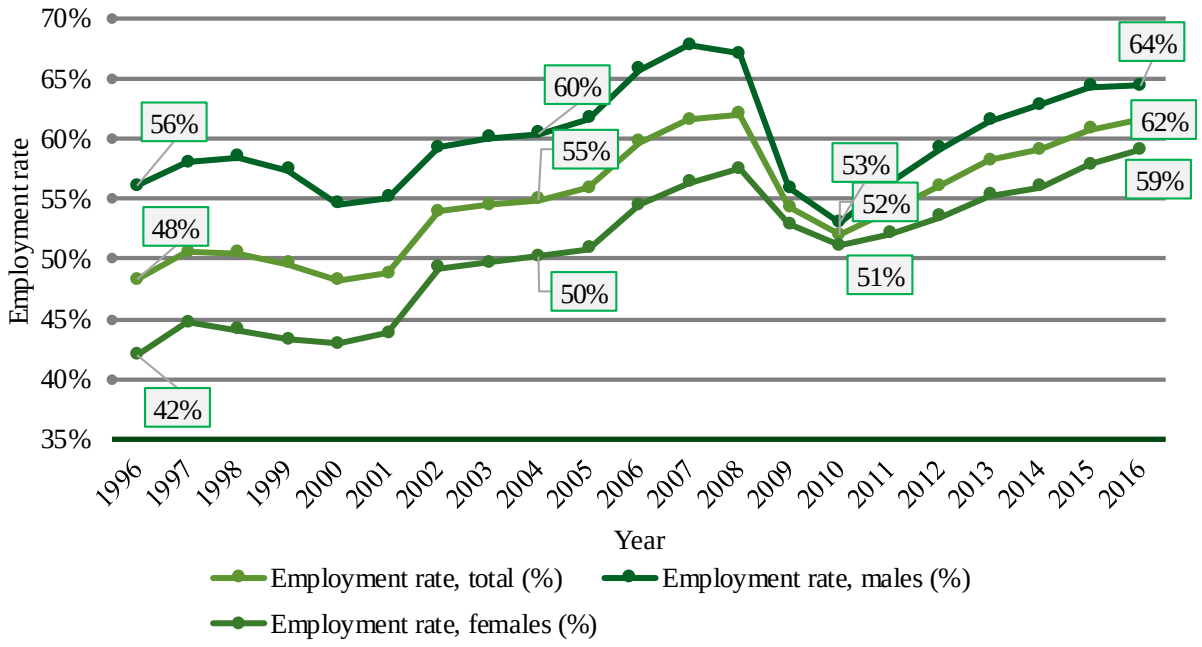


Figure 1.7 **Employment rate in Latvia (1996-2016)**
Source: Central Statistical Bureau of Latvia (CSB)[79]

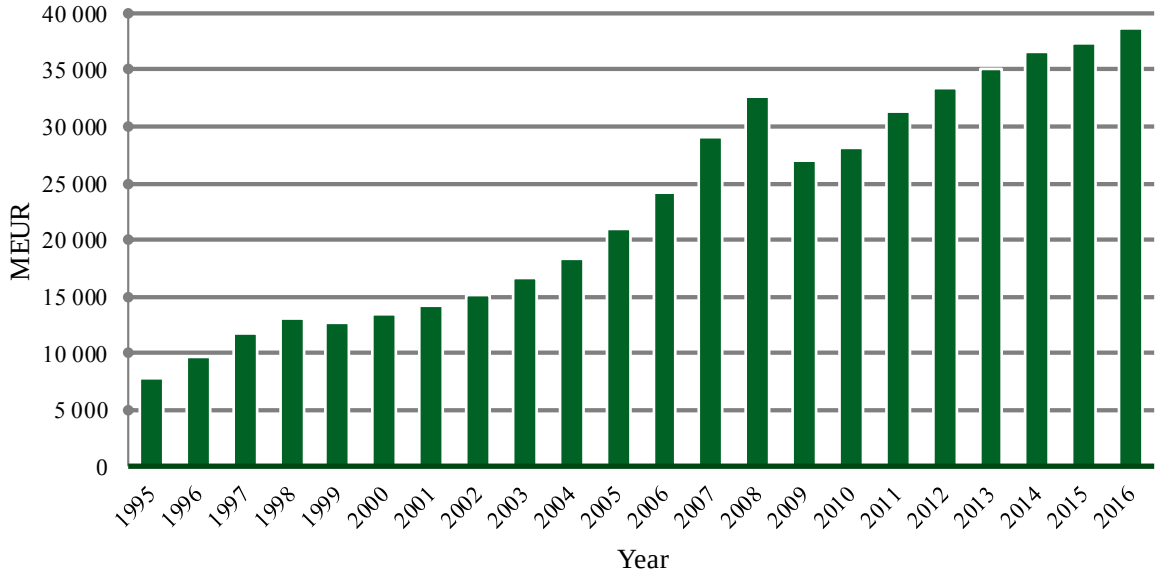
[77] Pastor, G., & Damjanovic, T. (2001, October). *The Russian Financial Crisis and its Consequences for Central Asia*. International Monetary Fund. Retrieved March 30, 2017, from https://www.imf.org/external/pubs/ft/wp/2001/wp01169.pdf

[78] Zasova, A., & Meïihovs, A. (2005, March). *Latvijas darba tirgus elastības novērtējums.* Riga: Latvijas Banka. Retrieved April 5, 2017, from https://www.bank.lv/public_files/images/img_lb/izdevumi/latvian/citas/darba_tirgus_elastiba.pdf

[79] Central Statistical Bureau of Latvia (CSB). (2017, February 21). Activity rate, employment rate and unemployment rate (%), code [NBG02]. Retrieved April 1, 2017, from http://data.csb.gov.lv/pxweb/en/Sociala/Sociala__ikgad__nodarb/NB0020.px/?rxid=562c2205-ba57-4130-b63a-6991f49ab6fe

1.4.2 Lithuania

With the signing of the Act on the Re-Establishment of the State of Lithuania on 11 March 1990[80], the country went through a period of transformation from being part of the USSR to a completely independent country. Similar to Latvia there was a great downturn in the industrial and agricultural sectors. The level of GDP improved over the next couple of years, but the country was still quite influenced by the banking crisis in 1995 and the Russian financial crisis in 1998. Just like Latvia around 2000 as Lithuania was preparing to be part of the EU it had to adjust its legislation and harmonize the economy. After accession in 2004 GDP growth was increasing quite rapidly, but was again hit by the financial crisis in 2008. Since then the GDP has been increasing and stabilizing. Whilst in the case of Latvia in 2016 GDP was approximately at the same level as in 2008, in Lithuania GDP has actually exceeded that of 2008.



*data for 2015, 2016 is preliminary

Figure 1.8 **GDP at current prices, million EUR**
Source: Statistics Lithuania[81]

[80] *Baltic Yearbook of International Law* (Vol. 3). (2003). Brill - Nijhoff.

[81] Statistics Lithuania. (2017, April 28). GDP, at current prices. Retrieved May 5, 2017, from http://osp.stat.gov.lt/statistiniu-rodikliu-analize?id=8443&status=A

Similar to the case in Latvia, the gross minimum wage in Lithuania has increased in 2017[82]. The minimum wage was not really affected by the financial crisis in 2008 and has since 2012 risen quite dramatically.

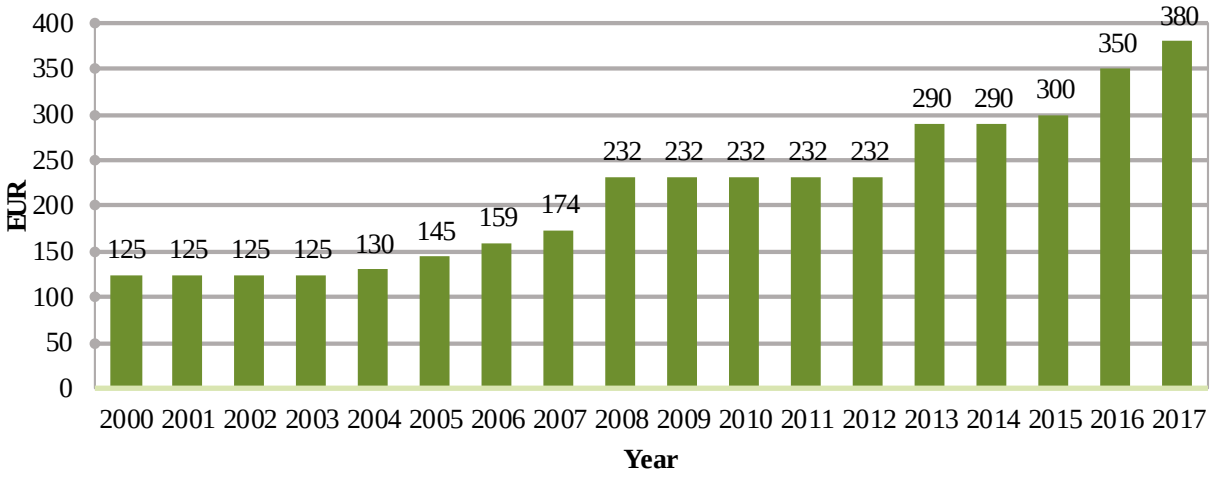


Figure 1.9 **Gross minimum wage, EUR**
Source: CountryEconomy.com[83]

Not only has the minimum wage showed positive signs, the gender pay gap is considered to be at a better level. According to the European Commission in 2016 the gender pay gap was 13.3% whilst the in the EU it was at 16.7%; the reasons for the gender gap are high positions such as supervisory are usually held by men, women take on many important unpaid tasks like household chores, women have periods off work due to giving birth, there is segmentation in the education and the labor market, meaning that some positions such as prison guard are held predominantly by males[84]. This, however, does not seem to be a stable level, as it has been lower in 2011, and has increased up until 2015. At the peak of the financial crisis, the gender pay gap was as high as 22%, far from that of 2016.

[82] Fischer, Reinis. (2015, December 23). Minimum Wage Set to Rise in All Baltic States in 2016. Retrieved April 2, 2017, from https://www.reinisfischer.com/minimum-wage-set-rise-all-baltic-states-2016

[83] CountryEconomy.com. (2017). *The national minimum wage in Lithuania remained fixed*. Retrieved April 1, 2017, from http://countryeconomy.com/national-minimum-wage/lithuania

[84] European Commission. (2014). The gender pay gap in Lithuania. Retrieved April 3, 2017, from http://ec.europa.eu/justice/gender-equality/files/gender_pay_gap/2016/gpg_country_factsheet_lt_2016_en.pdf

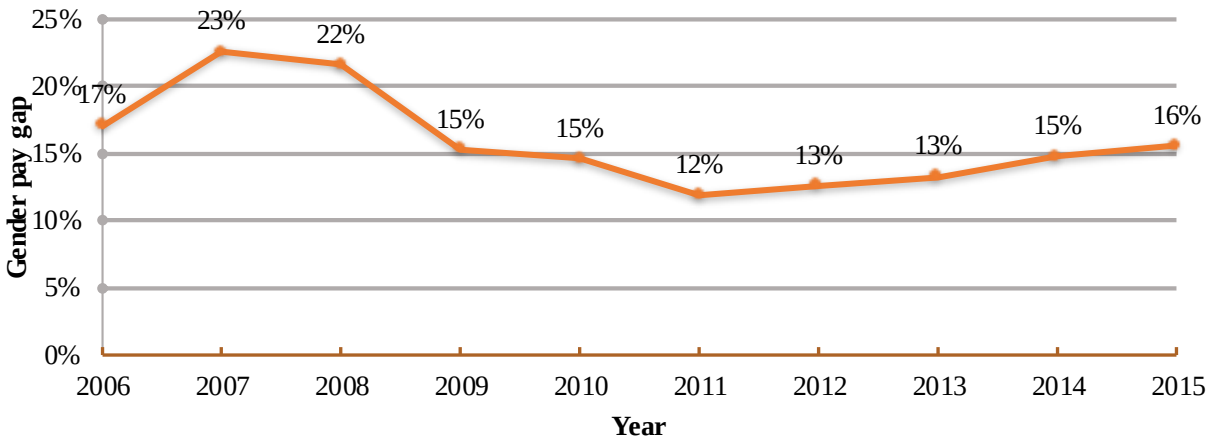


Figure 1.10 **Gender pay gap, %**
Source: Statistics Lithuania[85]

As in many countries, it seems like Lithuania might run into some demographic population problems, as the number of 65+ people has risen whilst the number of 0-14 and 15-64 have both decreased compared to what it was in 2000. As a positive indicator, the male to female ratio seems to be rather stable.

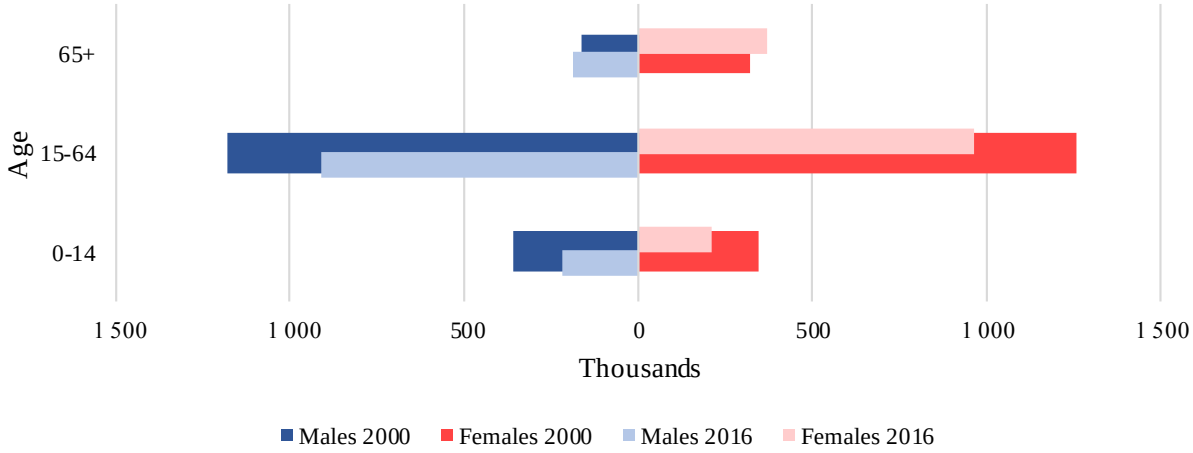


Figure 1.11 **Population pyramid of Lithuania**
Source: Central Intelligence Agency[86], The World Factbook[87]

[85] Statistics Lithuania. (2016, July 8). Gender pay gap. Retrieved March 31, 2017, from http://osp.stat.gov.lt/en/statistiniu-rodikliu-analize?id=1502&status=A

[86] Central Intelligence Agency. (2017). *The World Factbook: Age Structure*. Retrieved April 4, 2017, from https://www.cia.gov/library/publications/the-world-factbook/fields/2010.html

[87] The World Factbook. (2017). *Lithuania*. Retrieved April 4, 2017, from http://www.ww2hc.org/CIA/geos/lh.html

If there is an aging population problem, we need to look to employment for more explanations as to what is to hold in the future. In numerous studies has been a positive link shown between education and employment[88], thus, a deeper understanding of the level of education is necessary. The number of enrolled students is much higher than in Latvia in all levels of education, but there seems to be downward trend since 2013. The question on what is better – education or work experience is ambiguous. The answer would be, better have both, but in reality different employers look for different things when sorting out employee applications[89].

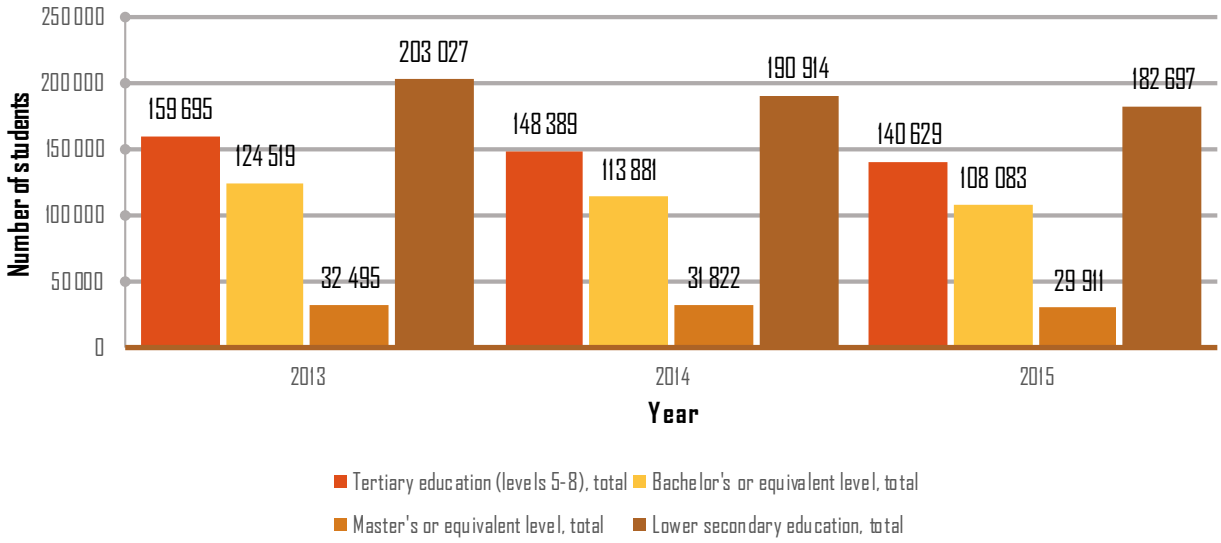


Figure 1.12 **Students enrolled in different education levels**
Source: Eurostat[90,91]

The question as to what happened to Lithuania's employment over the years is answered in the graph below. With regards to differences between sexes – there has always been a gender

[88] Swati, S. (2016, June 29). Does Education Determine Employment: Peculiarities of the Indian Labour Market. *Studies in Business and Economics, 11*(1), pp. 164-180. doi:10.1515/sbe-2016-0014

[89] Di Stasio, V., & van de Werfhorst, H. G. (2016, August 11). Why Does Education Matter to Employers in Different Institutional Contexts?: A Vignette Study in England and the Netherlands. *95*(1), 77-106. doi:10.1093/sf/sow027

[90] European Commission and Eurostat online database. (2017, April). Students enrolled in tertiary education by education level, programme orientation, sex, type of institution and intensity of participation, code [educ_uoe_enrt01]. Retrieved May 3, 2017, from http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ_uoe_enrt01&lang=en

[91] European Commission and Eurostat online database. (2017, April 28). "Pupils enrolled in lower-secondary education by programme orientation, sex, type of institution and intensity of participation, code [educ_uoe_enrs01]. Retrieved May 3, 2017, from http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ_uoe_enrs01&lang=en

gap which is explained by different reasons;[92]such as, different level of education, different work hour preference (part time or full time), different sector preferences – women choose administrative, health care, teaching etc. positions whilst men go into operations, management, machinery, etc.[93] In the graph four periods have been emphasized, beginning in 1998, when the employment rate was 53% at which time the Russian crisis took place.[94] According to the Lisbon strategy in 2000 the employment rate in Lithuania should have been 70% by 2010.[95] Surely the financial crisis was not part of the plan, but it is quite clear that had it not happened, Lithuania would still not reach the target, as the peak of the employment rate was in 2007 at 59%. 2004, when Lithuania joined the EU, when the employment rate was at 51%, followed by a drop after the financial crisis. The fact that the employment rate dropped very drastically only 2 years post crisis is not at all surprising, as many things in the economy, employment has also a lag. This is easily explained by the fact that even if companies are aware that there is a crisis going on, they might need time to figure out how their costs to revenue have changed and this comes only with time. Leading us to the latest data for 2016 – employment rate at 56%, which is slightly below where it was when the financial crisis hit it 2008.

[92] Ambrozaitienė, D., & Bankietienė, V. (2016, May 3). *Evaluation of the gender pay gap in Lithuania*. Economic Commission for Europe. Retrieved March 31, 2017, from https://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/ge.30/2016/WS/WP10_Lithuania_Ambrozaitiene.pdf

[93] European Commission. (2012). *The current situation of gender equality in Lithuania – Country Profile*. Retrieved April 3, 2017, from http://ec.europa.eu/justice/gender-equality/files/epo_campaign/130911_country-profile_lithuania.pdf

[94] Organisation for Economic Co-operation and Development (OECD). (2013). *Russia: Modernising the Economy*. Paris: OECD Publishing. doi:10.1787/9789264207998-en

[95] European Commission. (2015, December). *Employment and Social Developments in Europe 2015*. Luxembourg: Publications Office of the European Union. Retrieved April 7, 2017, from http://ec.europa.eu/social/BlobServlet?docId=14951&langId=en

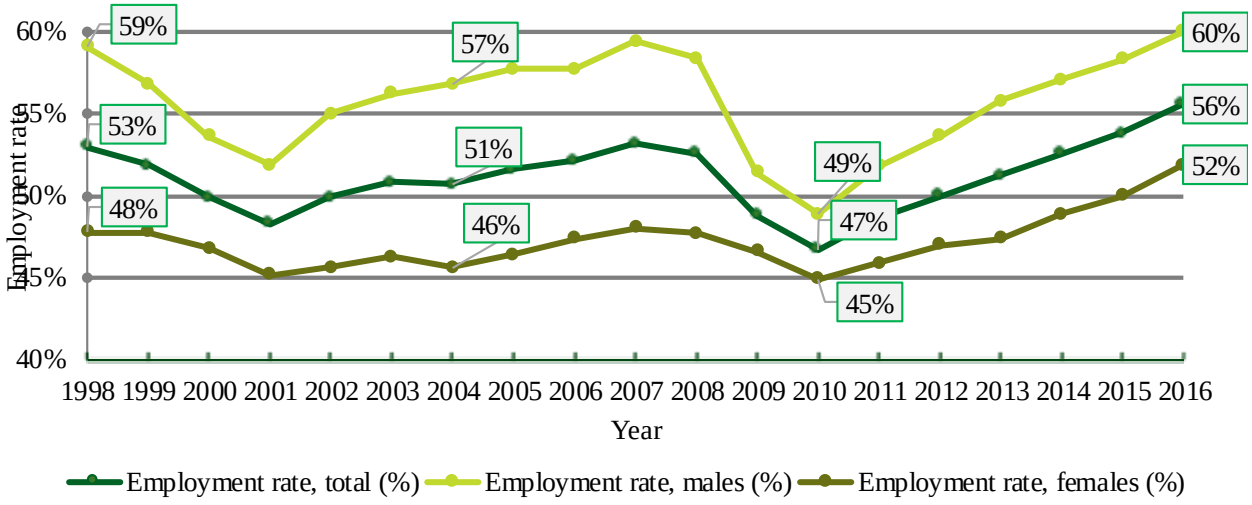


Figure 1.13 **Employment rate in Lithuania (1998-2016)**
Source: Statistics Lithuania[96]

1.4.3 Estonia

The Estonian economy had to be rebuilt, as during the Soviet times there was a colonial economy where the economy worked for the good of the Soviet Union[97]. After regaining its sovereignty in 20 August 1991, next couple of years could be viewed as a "Crisis and adaption" period, where due to structural flaws in having a centrally planned system, followed by a period of "Take-off and recession"[98]. As in all the Baltic countries, also in Estonia, the Russian crisis hit hard which is why the takeoff in the economy was rather slow. However, once part of the EU (since 2004[99]) GDP started growing quite rapidly until the financial crisis happened in 2008. The drop in GDP was felt almost instantly in 2009, however, the recovery was surprisingly fast, by 2012, GDP was approximately back to where it was when the crisis occurred and has since increased more and more. In 2016 the GDP has reached a record high of 21.916 billion EUR.

[96] Statistics Lithuania. (2017, February 24). Employment rate. Retrieved April 2, 2017, from http://osp.stat.gov.lt/en/statistiniu-rodikliu-analize?id=1722&status=A

[97] Klesment, M. (2009, June). The Estonian Economy Under Soviet Rule: A Historiographic Overview. *40*(2), 245-264. doi:10.1080/01629770902884284

[98] Organisation for Economic Co-operation and Development (OECD). (2011). *Estonia: Towards a Single Government Approach*. Paris: OECD Publishing. doi:10.1787/9789264104860-en

[99] European Commission. (2017). *EU member countries in brief: Estonia*. Retrieved March 27, 2017, from http://europa.eu/european-union/about-eu/countries/member-countries/estonia_en

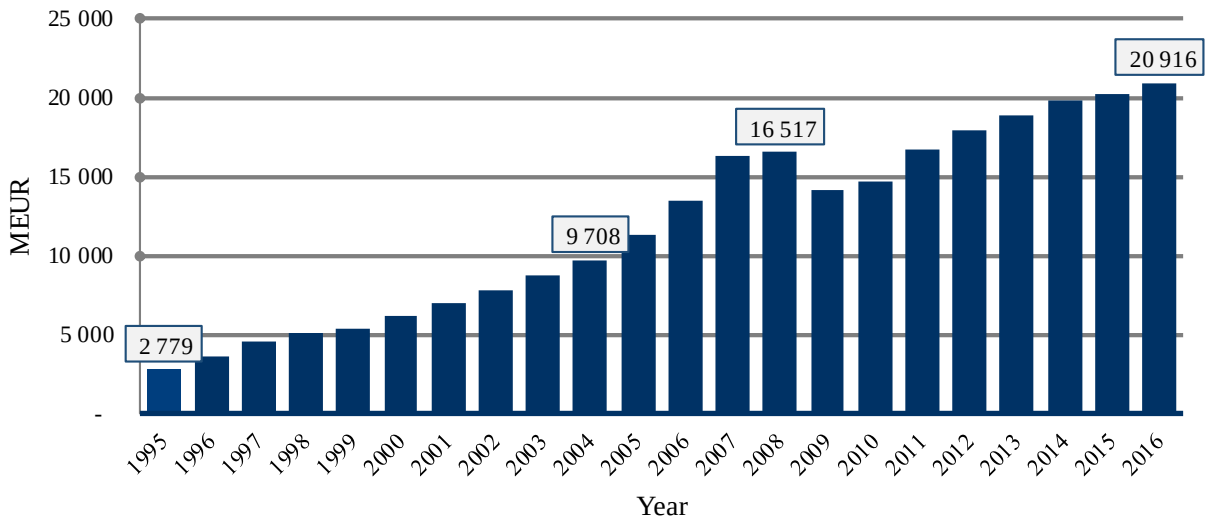


Figure 1.14 **GDP at current prices, million EUR**
Source: Statistics Estonia[100]

The gross minimum wage has been either stable, or has increased from 2004 to 2017. Through 2012 to 2017 the minimum wage has increased quite rapidly, over the last four year period the increase will be as high as 47%. The minimum wage has been increased in order to be closer to the average wage, with this rise in 2017, the minimum wage is close to 40% of the average wage in Estonia and there is a reason to believe that it will continue to grow in the future[101].

[100] Statistics Estonia. (2017, February 28). Gross domestic product by income approach at current prices (quarters), code [NAA0024]. Retrieved March 27, 2017, from http://pub.stat.ee/px-web.2001/I_Databas/Economy/23National_accounts/01Gross_domestic_product_(GDP)/08Gross_domestic_product_by_income_approach/08Gross_domestic_product_by_income_approach.asp

[101] New Europe Investor. (2015, October 16). Minimum Wage in Estonia to Rise in 2016 and 2017. Retrieved April 1, 2017, from http://www.neweuropeinvestor.com/news/minimum-wage-in-estonia-to-rise-in-2016-and-2017-10595/

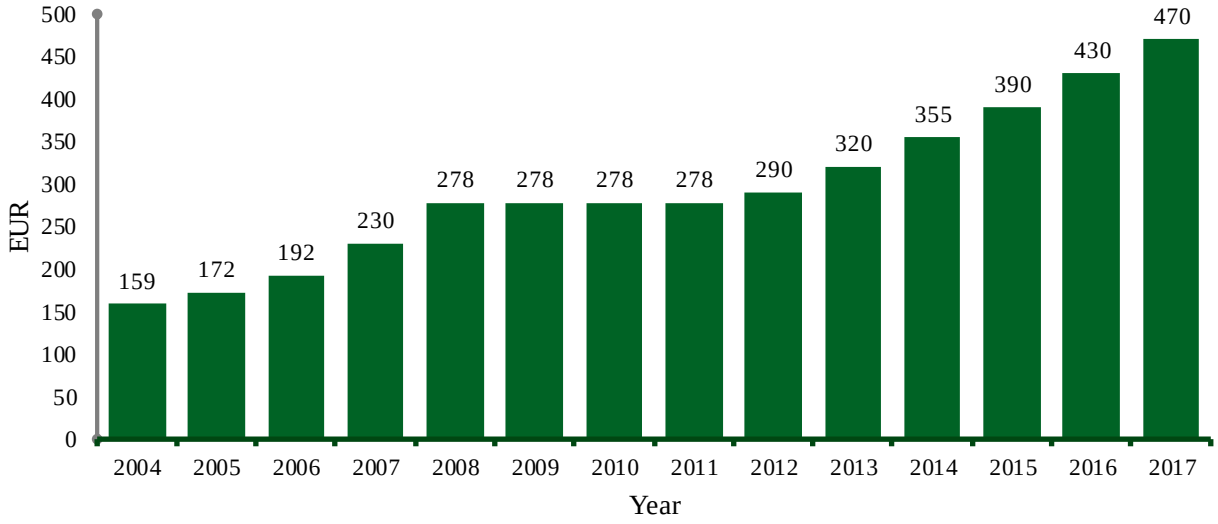


Figure 1.15 **Gross minimum wage (2004-2017)**
Source: European Commission and Eurostat online database[102] , WageIndicator.org[103]

In comparison, the average monthly salaries in Estonia did decrease after the financial crisis in 2008. The decrease was not dramatic, the wages were still above those in 2007 and in addition to that, they kept rising afterwards. In 2011, the average monthly wage was approximately the same as in 2008 and has increased to 1 139 EUR per month on average in 2016.

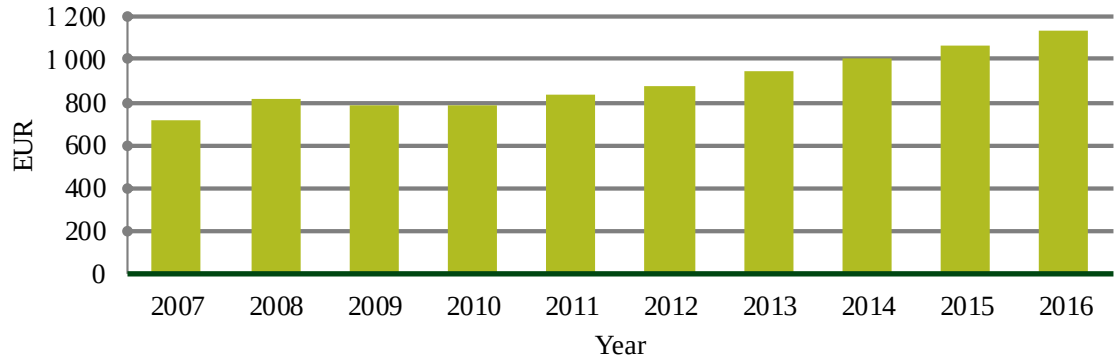


Figure 1.16 **Average monthly gross wages (salaries), EUR**
Source: Statistics Estonia[104]

[102] European Commission and Eurostat online database. (2016, April 3). Minimum wages, code [tps00155]. Retrieved March 30, 2017, from http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00155

[103] WageIndicator.org. (2016). *Estonia's Minimum Wage set to rise - December 23, 2016*. Retrieved March 30, 2017, from http://www.wageindicator.org/main/salary/minimum-wage/minimum-wages-news/estonias-minimum-wage-set-to-rise-december-23-2017

[104] Statistics Estonia. (2017, March 2). Average monthly gross wages (salaries) and hourly gross wages, quarters. Retrieved March 30, 2017, from http://www.stat.ee/36715?highlight=minimum,wage

Whilst everything may seem positive from minimum wage increase and only a small delay in average wage increase, the gender pay gap shows a slightly different picture. This seem to be the case, when everything seems too good to be true, and it really is not correct. It seems that where the financial crisis had the biggest effect among the three is the gender pay gap. In 2011 it was at 23% and kept rising afterwards to an astonishing 25% in 2012 and 2013. On the bright side, it has since decreased to about 22%. The reason for such a high gender pay gap, which is also very much above the EU average is the highly segregated labor market, which means that women are more focused in certain sectors and professions[105].

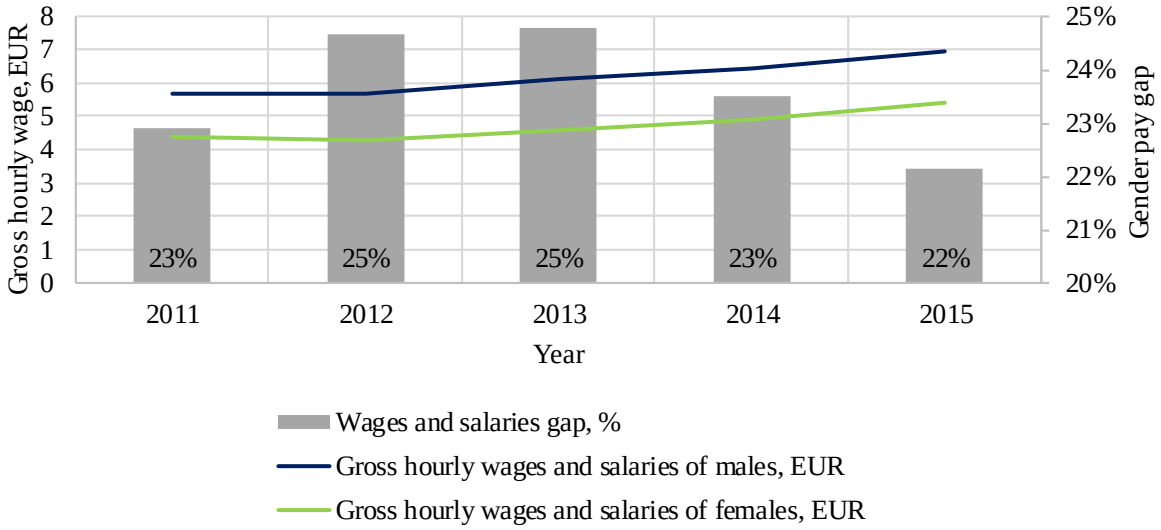


Figure 1.17 **Gender pay gap (2011-2015)**
Source: Statistics Estonia[106]

Even if we consider everything above – there are some positive signs, considering there was a crisis in 2008. However, the number of enrolled students at different education levels is extremely worrisome. On all levels there has been a tremendous drop from 2014 to 2015. Investment in training and education was increased from 2013 to 2014 and 2015[107]. The drop may be related to the fact that unlike many other European countries, in Estonia, during and after

[105] European Commission. (2012). The situation in the EU. Retrieved March 29, 2017, from http://ec.europa.eu/justice/gender-equality/gender-pay-gap/situation-europe/index_en.htm

[106] Statistics Estonia. (2017, April 28). Gender pay gap by economic activity (emtak 2008), october, code [WS5335]. Retrieved May 1, 2017, from http://pub.stat.ee/px-web.2001/Dialog/varval.asp?ma=WS5335&ti=GENDER+PAY+GAP+BY+ECONOMIC+ACTIVITY+%28EMTAK+2008%29%2C+OCTOBER&path=../I_Databas/Economy/36Wages_and_salaries_and_labour_costs/09Wages_and_salaries/02Annual_statistics/&lang=1

[107] European Commission. (2015). Education and Training Monitor 2015 Estonia. Publications Office of the European Union. Retrieved April 5, 2017, from http://ec.europa.eu/dgs/education_culture/repository/education/tools/docs/2015/monitor2015-estonia_en.pdf

the crisis, education spending was cut by as much as 10% (from 2008 to 2010), and despite this, teachers' salaries were 62% higher in 2011, than in 2000[108]. What is more, Estonia is a country that is well known for its high student employment, this is a country where working poor students are as commonly seen as working privileged students; employment in Estonia is no longer as academia driven as it once perhaps was[109], which might be the cause of lower enrolments in Estonia.

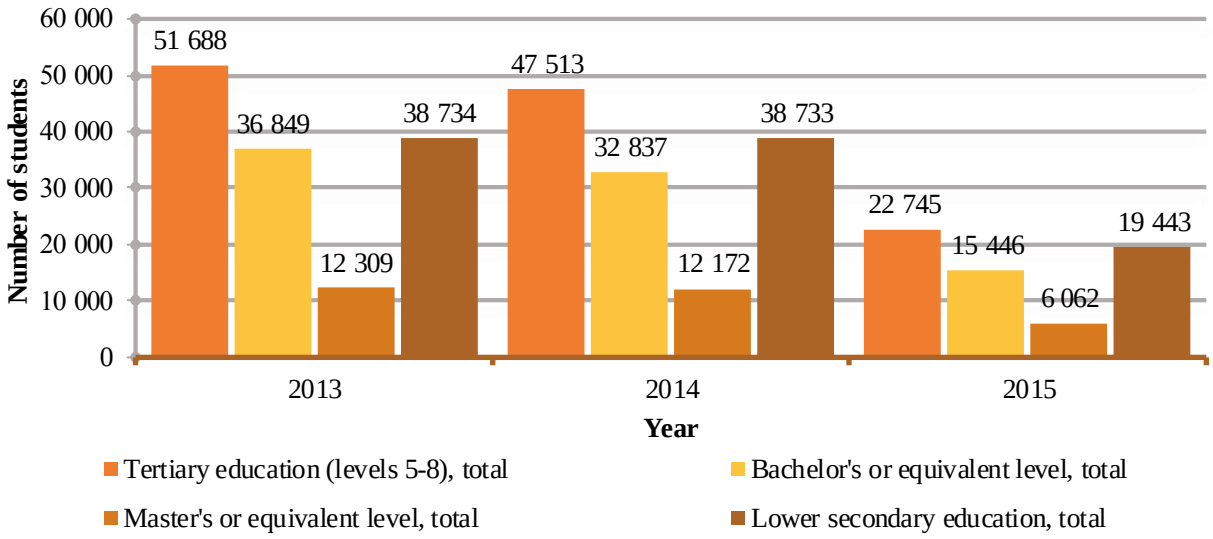


Figure 1.18 **Students enrolled in different education levels**
Source: European Commission and Eurostat online database [110,111]

Aging population problem in Estonia? Yes, there is. But what is more, there has been an entire shift in the age structure, what once (in 1991) had looked like a pyramid is looking quite different in 2016. The young population has drastically decreased whilst people are living longer and

[108] Organisation for Economic Co-operation and Development (OECD). (2012, September 11). Education at a Glance: OECD Indicators 2012 Estonia. Paris: OECD Publishing. doi:10.1787/eag-2012-44-en

[109] Beerkens, M., Magi, E., & Lill, L. (2010, July 28). University studies as a side job: causes and consequences. *Higher Education, 61*(6), 679-692. doi:10.1007/s10734-010-9356-0

[110] European Commission and Eurostat online database. (2017, April). Students enrolled in tertiary education by education level, programme orientation, sex, type of institution and intensity of participation, code [educ_uoe_enrt01]. Retrieved May 3, 2017, from http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ_uoe_enrt01&lang=en

[111] European Commission and Eurostat online database. (2017, April 28). "Pupils enrolled in lower-secondary education by programme orientation, sex, type of institution and intensity of participation, code [educ_uoe_enrs01]. Retrieved May 3, 2017, from http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ_uoe_enrs01&lang=en

longer. On the bright side the elderly employment has also increased in Estonia from 5/10 men and 4/10 women in 2000, to 6/10 men and 7/10 women in 2015[112].

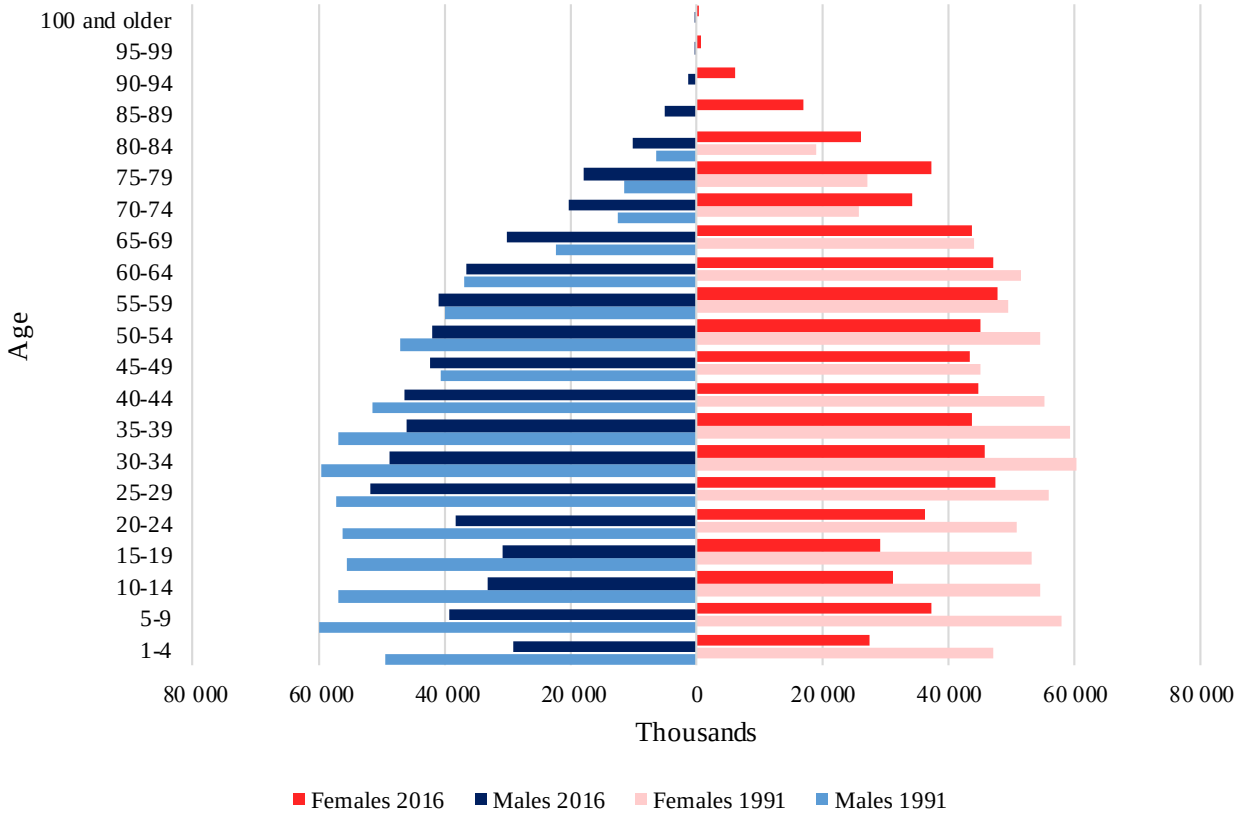


Figure 1.19 **Population pyramid (Estonia)**
Source: Statistics Estonia[113]

Combining all this, we see the development of the employment rate in Estonia. In 1997 it was 71%, followed by a drop in 2000 (after the Russian crisis in 1998[114]) to 67%, but has since gradually increased until the 2008 financial crisis. In 2008 the employment rate was as high as 77%, much higher than that in Lithuania and Latvia. But similar to the other two Baltic countries, in Estonia too there was a dramatic drop in the employment rate in 2010, when it reached only

[112] Statistics Estonia. (2017). Employment has increased among elderly. Retrieved March 29, 2017, from https://statistikaamet.files.wordpress.com/2016/12/161202_h6ivatud_55_64_veeb.png

[113] Statistics Estonia. (2017, April 5). Population by sex and age group, 1 january, code [PO021]. Retrieved March 28, 2017, from http://pub.stat.ee/px-web.2001/Dialog/varval.asp?ma=PO021&ti=POPULATION+BY+SEX+AND+AGE+GROUP%2C+1+JANUARY&path=../I_Databas/Population/01Population_indicators_and_composition/04Population_figure_and_composition/&lang=1

[114] Organisation for Economic Co-operation and Development (OECD). (2010, March 25). *Accession of Estonia to the OECD: Review of international investment policies*. Paris: OECD Publishing. Retrieved March 31, 2017, from https://www.oecd.org/estonia/49864112.pdf

67% (still being very much above Latvia and Lithuania). Estonia is the only of the three Baltic countries that has managed to reach the set Lisbon target for 2010 for 70%[115]. There has been a rather rapid increase in the employment rate since then and in 2015 the employment rate was back to where it was when the crisis hit in 2008. The positive thing is that employment rate for women seems to be improving quite rapidly. Perhaps at some point it will exceed that of males.

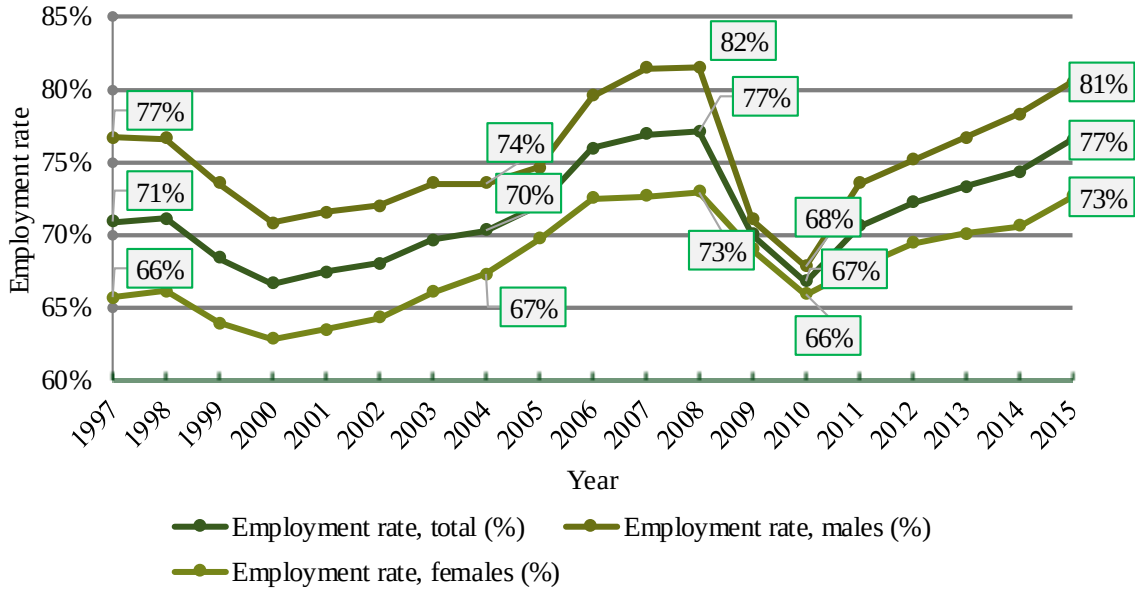


Figure 1.20 **Employment rate (1997 - 2015)**
Source: European Commission and Eurostat online database[116]

[115] Rodriguez, R., & John Warmerdam, C. E. (2010, July). *The Lisbon Strategy 2000 – 2010: An analysis and evaluation of the methods used and results achieved*. Brussels: European Parliament. Retrieved March 29, 2017, from http://www.europarl.europa.eu/document/activities/cont/201107/20110718ATT24270/20110718ATT24270EN.pdf

[116] European Commission and Eurostat online database. (2016, April 3). Employment rate by sex, age group 20-64, code [t2020_10]. Retrieved April 5, 2017, from http://ec.europa.eu/eurostat/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=t2020_10&language=en

2. INDICATORS PRESENTED IN THE RESEARCH

Employment is at the basis of wealth creation and of one's level of life satisfaction, which is why it is at the heart of the EU's policies[117]. What is more, a stable employment rate would allow for a more certain and clear growth outlook for Europe[118]. In the current shift towards service sector employment[119] and the rapid approach of 2020 targets it is important to try to better understand the drivers of employment and where is it all going. A comprehensive literature review is provided in order to make an assessment of what has already been researched.

2.1 Dependent variable: employment rate

A study in 2014 shows that in order for the EU to reach the its employment target, there is a lot to do in many of the member states with regard to increased activity levels considering that the population is shrinking[120]. In a study between Japan and the US it was shown how job security in different countries is entirely different; in Japan the key thing is seniority, whilst in the US this has little influence over job security[121]. Another study discusses the need to better exploit the skills of a constantly mobile labour and as well as migrant inflows, so that the countries could benefit from it[122]. A study researching European Structural Fund impact showed that countries with already low rates of unemployment used the funds more efficiently[123], thus depicting how important is past experience. Latvia is shown to have difficulties reducing red tape, mostly

[117] Eurostat. (2015, June 5). Statistics explained: Quality of life in Europe - facts and views - employment. Retrieved April 5, 2017, from http://ec.europa.eu/eurostat/statistics-explained/index.php/Quality_of_life_in_Europe_-_facts_and_views_-_employment

[118] European Commission. (2015). *EU Exports to the World: Effects on Employment and Income*. Retrieved March 28, 2017, from http://trade.ec.europa.eu/doclib/docs/2015/june/tradoc_153502.pdf

[119] D'Agostino, A., Serafini, R., & Ward-Warmedinger, M. (2006, May). *Sectoral Explanations on Employment in Europe: The Role of Services*. Frankfurt: European Central Bank. Retrieved March 27, 2017, from https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp625.pdf?fd7ce5592d16df1774203cb46ad6d729

[120] Descy, P. (2014). *Projected labour market imbalances in Europe: Policy challenges in meeting the Europe 2020 employment targets*. Paris: OECD Publishing. doi:10.1787/9789264216501-12-en

[121] Kambayashi, R., & Kato, T. (2016, June 20). Long-Term Employment and Job Security over the Past 25 Years: A Comparative Study of Japan and the United States. *SAGE journals, 70*(2), 359-394. doi:10.1177/0019793916653956

[122] Organisation for Economic Co-operation and Development (OECD), EU. (2014, September 18). *Matching Economic Migration with Labour Market Needs*. Paris: OECD Publishing. doi:10.1787/9789264216501-en

[123] Moreno-Enguix, M. D., Gómez-García, J., & GóMez-Gallego, J. C. (2012). An Impact Analysis of the European Structural Funds on the Variation of the Rate of Employment and Productivity in Objective 1 Regions. *European Planning Studies*, 321-340. doi:10.1080/09654313.2012.650907

dealing with permits etc., doing so would increase the attractiveness of businesses for foreign investors[124].

Suggestions to increase the employment rate from the literature review:

- Increase par time job opportunities for mothers and youngsters in school
- Structural labour market reforms
- Fiscal measurement reforms – taxes[125]
- Decrease labour taxes at the expense of immovable property taxes[126]
- Equal pay for equal jobs in the Baltics
- Restrict public-funded early retirement
- Empower occupational segmentation
- Employment for people with limited education level and those with a criminal record[127] (studies show that people who obtain education whilst imprisoned have a 13% higher chance of getting employment afterwards[128])
- Focus on making a better environment for the micro-enterprises as it accounts for approximately one third of the total employment in the EU[129]
- Work on improving skill mismatch – education vs chosen occupation[130]
- As the employment rate for refugee women is approximately 45%, which is linked to their education level[131], then the countries could create specific programs for them

[124] Organisation for Economic Co-operation and Development (OECD). (2015, February). *OECD Economic Surveys: Latvia 2015*. Paris: OECD Publishing. doi:10.1787/9789264228467-en

[125] European Central Bank. (2016). The employment-GDP relationship since the crisis. *ECB Economic Bulletin*(6), 53-71. Retrieved April 1, 2017, from https://www.ecb.europa.eu/pub/pdf/other/eb201606_article01.en.pdf

[126] Organisation for Economic Co-operation and Development (OECD). (2016, March). *OECD Economic Surveys: Lithuania 2016: Economic Assessment*. Paris: OECD Publishing. doi:10.1787/eco_surveys-ltu-2016-en

[127] Organisation for Economic Co-operation and Development (OECD). (2007). Full Employment Strategies for Cities: The Case of Glasgow. *OECD Papers, 6*(12), 1-18. doi:10.1787/oecd_papers-v6-art41-en

[128] Jobs for the Future. (2015, July). Supporting Second Chances: Education and Employment Strategies For People Returning from Correctional Facilities. Retrieved April 1, 2017, from http://files.eric.ed.gov/fulltext/ED560782.pdf

[129] European Commission. (2015, December). *Employment and Social Developments in Europe 2015*. Luxembourg: Publications Office of the European Union. Retrieved April 7, 2017, from http://ec.europa.eu/social/BlobServlet?docId=14951&langId=en

[130] Ebeke, C., & Everaert, G. (2014, August). *Unemployment and Structural Unemployment in the Baltics*. International Monetary Fund. Retrieved March 31, 2017, from https://www.imf.org/external/pubs/ft/wp/2014/wp14153.pdf

[131] Geis, W., & Orth, A. (2016). *How are refugees faring on the labour market in Europe?* Luxembourg: Publications Office of the European Union. doi:10.2767/350756

- As there is a discrepancy between regional unemployment rates within countries[132] it is important to look into minimizing these discrepancies between regions through regional programs
- Temporary unemployment benefit extension[133] to avoid the countries losing out the from brain-drain effect
- Decrease the tax burden for people on the minimum wage
- Increase access to high quality child care and part time jobs[134]
- Focus on finding a job for those who have little experience or low skills – mentoring them and creating new programs[135]
- Introduce "blind" CV policy[136] – take out certain details about candidates that could show their gender in order to reduce gender bias

2.2 Independent indicators affecting employment rate

Factors are selected on the basis of what best describes the employment rate taking into account the availability of data, empirical literature evidence as well as economic theory.

2.2.1 Education

When taking on a new employee companies always consider the cost. There are several research findings which discuss the cost of labour training[137]. Had labour been more educated in the first place, companies would not incur as much cost. Another study argues that the link

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[132] European Economic and Social Committee. (2013). *Economic and Social Situation in The Baltic States: Latvia*. doi:10.2864/27766

[133] Organisation for Economic Co-operation and Development (OECD). (2009). *The Jobs Crisis: What Are the Implications for Employment and Social Policy?* Paris: OECD Publishing. doi:10.1787/empl_outlook-2009-2-en

[134] European Commission. (2015, December). *Employment and Social Developments in Europe 2015*. Retrieved April 4, 2017, from http://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=7859&furtherPubs=yes

[135] European Commission. (2010, November 26). *An Agenda for new skills and jobs: A European contribution towards full employment*. Retrieved April 1, 2017, from http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52010DC0682R(01)&from=EN

[136] Kay, A. (2017, March 8). Think you're not sexist? Here's why you might be wrong. World Economic Forum. Retrieved March 29, 2017, from https://www.weforum.org/agenda/2017/03/sexism-gender-bias-women-equality-employment?utm_content=buffer04cbf&utm_medium=social&utm_source=facebook.com&utm_campaign=buffer

[137] Antràs, P. (2003, May). *Firms, Contracts, and Trade Structure*. Retrieved April 2, 2017, from http://www.nber.org/papers/w9740.pdf

between education and employment should not be all, self-fulfilment is necessary and can be observed only with time[138]. Others argue that the gap between employment, training and education can be compressed through the development of employment and academic skills, like motivation, communication competence, time management etc.[139] At the end of the day, as logic would dictate, those with a degree have higher rates of early employment and higher wages[140]. Moreover, with every new educational qualification the probability of employment increases, meaning, there is evidence of a positive relationship between employment and education level[141]. Education has been specifically shown to decrease the unemployment rate in the Baltic countries, thus, increasing the employment rate[142]. And this has also been the case for other EU countries[143].

2.2.2 GDP per capita

There is an undeniable link between GDP and employment, as has been shown in several studies, including one by the OECD where they showed that the increase in the employment rate would generate a growth in GDP[144]. Another study suggests that there have been serious changes in the relationship between employment and GDP post the financial crisis in 2008. It discusses how the service sector has grown and that there has been a shift towards part time employment, etc, but the most important thing – the relationship is positive, with increased employment GDP also increases[145]. There are also authors who argue that there are some industries where the link

[138] Fabbris, L., & Martini, M. C. (2017, January). Beyond Employment Rate: A Multidimensional Indicator of Higher Education Effectiveness. *Social Indicators Research, 130*(1), 351-370. doi:10.1007/s11205-015-1179-z

[139] Denman, C., & Al-Mahrooqi, R. (2016). *Bridging Gap between Education and Employment: English Language Instruction in EFL Contexts*. Bruxelles: Peter Lang

[140] Hanson, H., & Pierson, A. (2016). *Alaska students' pathways from.* Retrieved April 2, 2017, from http://files.eric.ed.gov/fulltext/ED565628.pdf

[141] Swati, S. (2016, June 29). Does Education Determine Employment: Peculiarities of the Indian Labour Market. *Studies in Business and Economics, 11*(1), pp. 164-180. doi:10.1515/sbe-2016-0014

[142] Organisation for Economic Co-operation and Development (OECD). (2003). Unemployment Risk Factors in Estonia, Latvia and Lithuania. Retrieved March 27, 2017, from http://www.oecd.org/social/soc/2493996.pdf

[143] Kyi, G. (2001, June 29). Employment in the EU Regions 2000: Job creation is driven by the service sector – education is essential. Retrieved March 28, 2017, from http://ec.europa.eu/eurostat/documents/3433488/5395805/KS-NK-01-013-EN.PDF/ce51a626-1a71-47af-8bab-fd6b7c4b0c57

[144] Hull, K. (2009). *Understanding the relationship between economic growth, employment and poverty reduction.* Paris: OECD Publishing. Retrieved April 6, 2017, from https://www.oecd.org/dac/povertyreduction/43280288.pdf

[145] European Central Bank. (2016). The employment-GDP relationship since the crisis. *ECB Economic Bulletin*(6), 53-71. Retrieved April 1, 2017, from https://www.ecb.europa.eu/pub/pdf/other/eb201606_article01.en.pdf

between GDP and employment in the long run can also be negative[146]. It must be borne in mind that this is, however, not true for all sectors. One of the main reason to take this variable into account in this research is that it has been previously proven to be statistically significant[147].

2.2.3 Population structure

Estonia is one of several countries that after the crisis had a very high youth unemployment rate compared to that before the crisis[148]. It is important to take into account the population structure as it has been suggested that age influences both employment and productivity[149]. However, we must not forget that there is strength in numbers and older people can offer a huge potential value to the economy[150]. A study also shows the statistical significance for number of the working-age unemployed population and the population at risk of in-work poverty[151]. Another study shows the relationship between the minimum wage and its limitations towards the youth employment growth[152]. Estonia is an interesting case as it has been shown that there are thousands of Estonians who keep their status as Estonian residents even when they actually work in Finland[153]. The Baltic countries are known for not having the highest pensions; actually they have been described as being on the verge of conventional poverty limits[154].

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[146] Sawtelle, B. (2007, October). Analyzing the Link Between Real GDP and Employment: An Industry Sector Approach. *Business Economics, 42*(4), 46-54. doi:10.2145/20070405

[147] Carter, R. (2016). A Multiple Regression Analysis Fiscal Strategies and Unemployment Rates. *Insights to a Changing World Journal, 2016*(4), 95-142.

[148] Organisation for Economic Co-operation and Development (OECD). (2016, July 7). *OECD Employment Outlook 2016*. Paris: OECD Publishing. doi:10.1787/empl_outlook-2016-en

[149] Boulhol, H. (2009). *The Effects of Population Structure on Employment and Productivity*. Paris: OECD Publishing. doi:10.1787/225644583654

[150] Organisation for Economic Co-operation and Development (OECD). (2005, September 30). *Ageing and Employment Policies/Vieillissement et politiques de l'emploi: France 2005*. Paris: OECD Publishing. doi:10.1787/9789264008878-en

[151] Şerb, D. E., & Cicioc, N. (2015). Employment Rate Strategic Foresight Analysis and Its Implications in the Poverty Rate. *Revista Academiei Fortelor Terestre, 20*(1), 94-101.

[152] Majchrowska, A., Broniatowska, P., & Żółkiewski, Z. (2016, October). Minimum Wage in Poland and Youth Employment in Regional Labor Markets. *Emerging Markets Finance and Trade, 52*(9), 2178-2194. doi:10.1080/1540496X.2015.1068611

[153] European Commission. (2013). *Economic and Social Situation in The Baltic States: Estonia*. doi:10.2864/27303

[154] Organisation for Economic Co-operation and Development (OECD). (2000). *Policy insights from a decade of Baltic transition*. Paris: OECD Publishing. Retrieved April 3, 2017, from http://www.oecd.org/estonia/1864879.pdf

2.2.4 Minimum wage

In a study that discusses youth unemployment issues it was contemplated that minimum wages should not be cut or that a specific minimum wage should not be targeted in order to reduce labour costs, rather instead they should be aligned with the median wages so that low skilled labour costs are not excessive[155]. Wage has been shown to play an important role in economies after recessions, a case of UK and Spain was discussed in a study that showed that Spain's issues with unemployment was a result of inadequately adjusted wages[156]. As seen previously the minimum wages did not suffer much from the recession, however, a study shows that minimum wage should be viewed with caution as it is strongly linked with taxes[157], which ultimately determines what is the net amount that people can either spend or save. Complimentary to this, a study discusses how an increase in the minimum wage increases people's willingness to participate in the labour market more actively[158]. What is interesting is that a study showed that there was no adverse employment effects on youth and low educated workers from the minimum wage, which has a small but all in all positive effect on employment[159].

2.2.5 Gender gap

First and foremost, the fact that there is a gender gap in wages and the employment rate shows that there is not gender equality. There is not only a horizontal segregation, but also a vertical one observed in OECD countries[160]. The occupational gender gap has shown more stability compared to the communist era[161]. The gender employment gap is shown to decrease

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[155] Banerji, A., Saksonovs, S., Lin, H., & Blavy, R. (2014, December). *Youth Unemployment in Advanced Economies in Europe: Searching for Solutions*. International Monetary Fund. Retrieved March 27, 2017, from https://www.imf.org/external/pubs/ft/sdn/2014/sdn1411.pdf

[156] Bakker, B. B. (2015, October). *Employment and the Great Recession: The Role of Real Wages*. Retrieved April 4, 2017, from https://www.imf.org/external/pubs/ft/wp/2015/wp15229.pdf

[157] Immervoll, H. (2007). *Minimum Wages, Minimum Labour Costs and the Tax Treatment of Low-Wage Employment*. Paris: OECD Publishing. doi:10.1787/337686556262

[158] Organisation for Economic Co-operation and Development (OECD). (2008). *Employment and Social Policies: Making Formal Employment More Attractive*. Paris: OECD Publishing. doi:10.1787/9789264043770-6-en

[159] Organisation for Economic Co-operation and Development (OECD). (2014). *Improving social cohesion through employment-friendly policies*. Paris: OECD Publishing. doi:10.1787/9789264196155-7-en

[160] Organisation for Economic Co-operation and Development (OECD). (1998, October 6). *The Future of Female-dominated Occupations*. Paris: OECD Publishing. doi:10.1787/9789264163690-en

[161] Vöörmann, R. (2009, November). Gender Segregated Labour Markets in the Baltics: What are Prevailing – Similarities or Differences? *Studies of Transition States and Societies, 1*(1). Retrieved March 28, 2017, from https://www.etis.ee/File/DownloadPublic/a53ea47f-9163-411b-adb7-1af5dff460f?name=Fail_STSS_voormann.pdf&type=application%2Fpdf

with an increase in education in urban areas[162]. According to a survey, Latvia has the smallest gender pay gaps between the three Baltic countries[163]. An OECD employment outlook study in 2015 showed that the gender pay gap was still an existing problem and especially strong in Estonia[164]. Whilst another study supported this and added that the gender pay gap increases with both age and during childbearing[165]. Another OECD study shows that even though there has been a substantial progress towards decreasing the education gap between males and females the income gap has not reached the same level[166]. In an article by the Economist (using OECD data), it was shown that the increase of women in the labour force has been slow, showing that in 2005 it was 60% and ten years later it had only increased by 3%, reaching 63%, whilst for men the ratio has stayed the same at 80%[167].

2.3 Forecast reasoning for the optimistic and pessimistic scenarios

A study by the EC shows that the target will be just missed, reaching 72% or potentially 74% if all policies work out well. The study showed that in order to reach the set target there should be an increased use of labour force potential – elderly, migrants, and women[168]. Another study showed that with the assumption that the labour market stabilized in 2010-2011, the employment rate should grow at a rate of above 1% annually in order to reach the 75% target[169]. According to CEDEFOP projections the employment growth rate by qualification is forecast to be similar in all three Baltic countries (see graphs below), close to or equal to zero in 2010 (for

[162] Noback, I., Broersma, L., & Van Dijk, J. (2013). 'Gender-Specific Spatial Interactions on Dutch Regional Labour Markets and the Gender Employment Gap. *Regional Studies, 47*, 1299-1312. doi:10.1080/00343404.2011.629183

[163] LETA. (2017, March 7). Latvia has smallest gender pay gap in Baltics - Paylab survey. Retrieved April 2, 2017, from http://www.leta.lv/eng/home/important/133C643D-5961-69B9-17D6-63FA565C0C87/

[164] Organisation for Economic Co-operation and Development (OECD). (2015). *OECD Employment Outlook 2015*. Paris: OECD Publishing. doi:10.1787/empl_outlook-2015-en

[165] Organisation for Economic Co-operation and Development (OECD). (2012). *Gender equality in employment*. Paris: OECD Publishing. doi:10.1787/9789264179370-5-en

[166] Organisation for Economic Co-operation and Development (OECD). (2012). *Gender equality in employment*. Paris: OECD Publishing. doi:10.1787/9789264179370-5-en

[167][167] The Economist. (2017, March 8). The best and worst places to be a working woman. Retrieved April 6, 2017, from http://www.economist.com/blogs/graphicdetail/2017/03/daily-chart-0?fsrc=scn/fb/te/bl/ed/

[168] European Commission. (2014). *Taking stock of the Europe 2020 strategy for smart, sustainable and inclusive growth*. Retrieved March 31, 2017, from http://ec.europa.eu/europe2020/pdf/europe2020stocktaking_en.pdf

[169] European Commission. (2010, November 23). An Agenda for new skills and jobs: A European contribution towards full employment. Retrieved March 29, 2017, from http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0682:FIN:EN:PDF

all qualifications), as those with high qualifications are unable to offset the negative effect from low and medium qualifications.

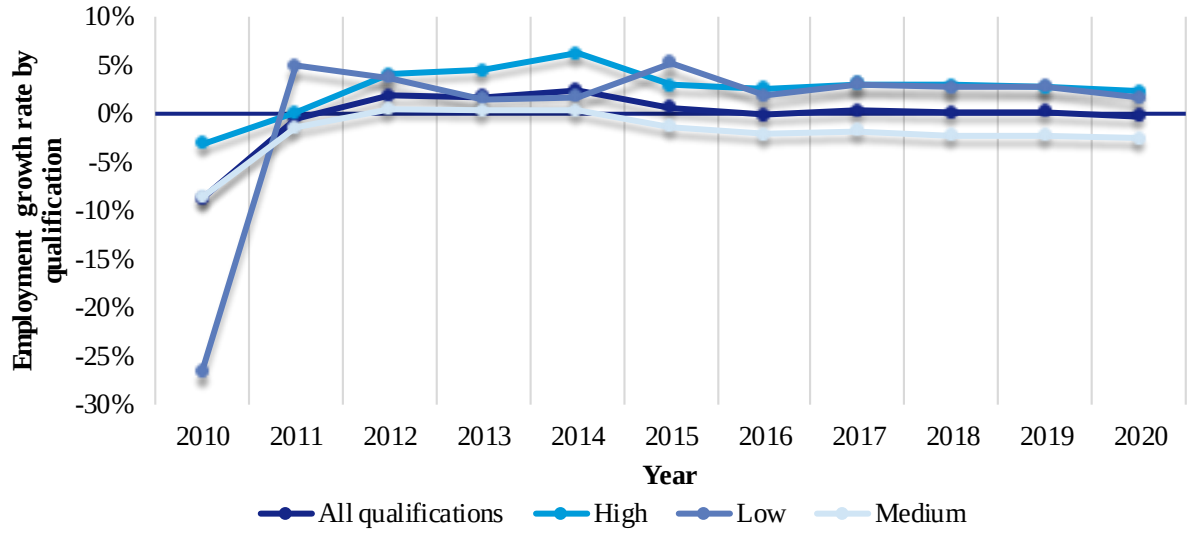

Figure 2.1 **Employment growth rate by qualification in Latvia**
Source: European Centre of the Development of Vocational Training[170]

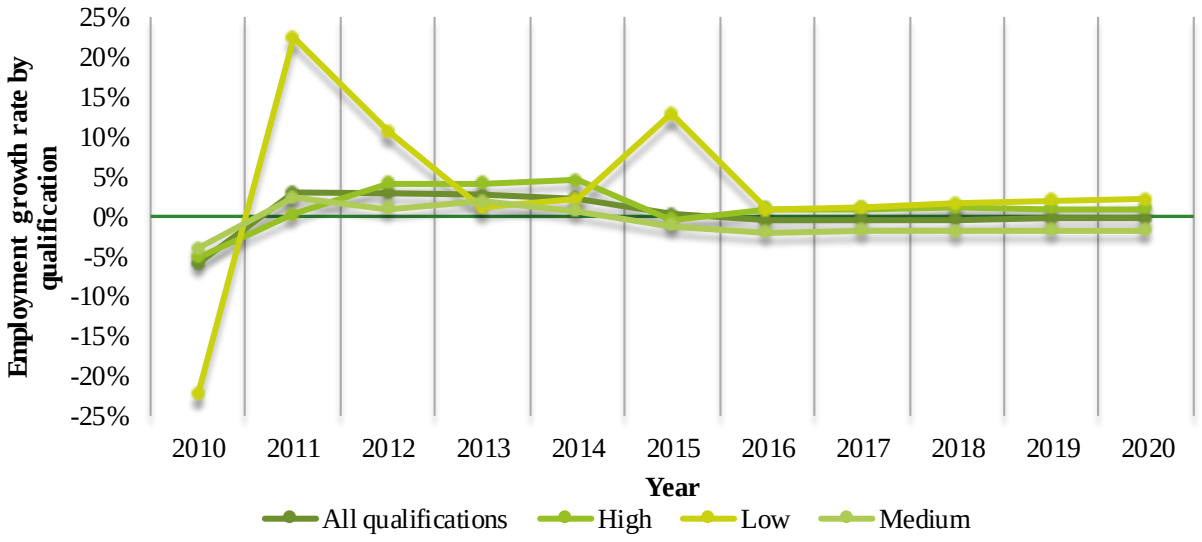

Figure 2.2 **Employment growth rate by qualification in Estonia**
Source: European Centre of the Development of Vocational Training[171]

[170] European Centre for the Development of Vocational Training. (2017). Employment trends: 2016 Skills forecast. Retrieved April 1, 2017, from http://www.cedefop.europa.eu/en/publications-and-resources/data-visualisations/employment-trends

[171] Ibid

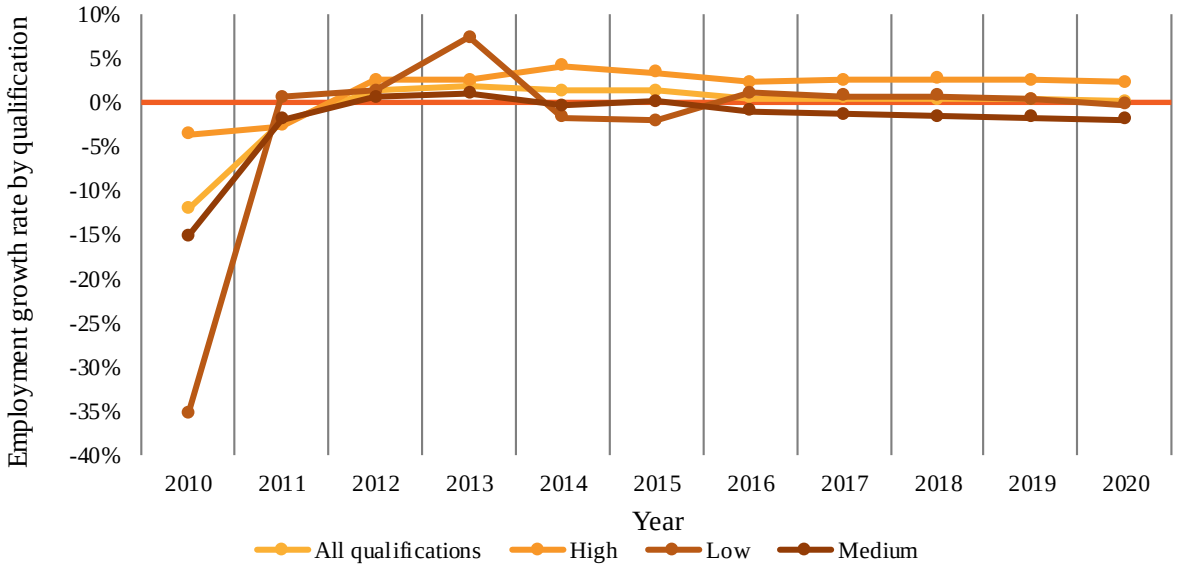

Figure 2.3 **Employment rate by qualification in Lithuania**
Source: European Centre of the Development of Vocational Training[172]

Another study showed a rather pessimistic outlook for target achievement due to divergences between different regions and member states, leaving an even bigger wedge in poverty and social inclusion[173].

The optimistic model methodology is based on stationary series average forecasting. The reason for having an optimistic scenario that depicts the achievement of the set employment rate target is, for instance, a study that shows that with improvements to structural reforms, the target of a 75% employment rate would be achieved[174]. CNN discusses that indeed, there are positive effects felt from the reforms that foster job creation and training, lowering youth unemployment and increasing employment[175]. Also a working paper from 2012, provides for a forecast that

[172] European Centre for the Development of Vocational Training. (2017). Employment trends: 2016 Skills forecast. Retrieved April 1, 2017, from http://www.cedefop.europa.eu/en/publications-and-resources/data-visualisations/employment-trends

[173] European Commission. (2012, April 18). Communication From the Commission to The European Parliament, The Council, The European Economic And Social Committee And The Committee of the Regions Towards a Job-Rich Recovery. Retrieved March 31, 2017, from http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52012DC0173

[174] Hobza, A., & Mourre, G. (2010, September). Macroeconomic effects of Europe 2020: stylised scenarios. *ECFIN Economic Brief, 11*. doi:10.2765/58542

[175] Kottasova, I. (2016, May 3). Is Europe's jobs crisis over? CNN. Retrieved March 28, 2017, from http://money.cnn.com/2016/05/03/news/economy/europe-jobs-unemployment-crisis-over/

shows that the EU will reach the employment target of 75%[176]. Also, it can be seen in the news that there is some evidence of economy recovery, for instance the fact that the Czech koruna is freely traded yet again, as it is a strong currency, will likely make exports less competitive whilst as the same time undercut import-driven prices[177]. Moreover, this is not only said in Europe even though the retail market is having some issues in the US, it is said that the economy is strong and bankruptcy filing in the US will do little harm to this growth[178]. In Europe an article by the Financial Times discusses how the UK has been doing in the first quarter of 2017, the result, with some decrease in the retail sector and some increased spending on automobiles, the economy seems to be growing in accordance with the predictions of the Bank of England, also showing that growth is expected to slow down[179]. Whilst Bloomberg shows that the market on average crashes every 5 years, it is said that there should not be fear of that, instead, people should let the money into the market and simply do it wisely – diversifying their portfolios, that way, if a part goes down, there is still something to hold on to[180].

As for the pessimistic scenario, there have been several aspects depicted in the news pointing to various issues that are worrisome and situations that may lead to another crisis soon, such as, Bloomberg pointed out an increase in student loans and car loans whilst credit card debt is leveling off; the message was that even though car loans are not viewed as the ones we should worry about, it is the car companies that we should worry about, as people give up their cars as they are unable to pay for them, the car companies and their investors will pay the price in

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[176] Medeiros, J., & Minty, P. (2012). *Analytical support in the setting of EU employment rate targets for 2020*. European Commission. Retrieved March 30, 2017, from http://ec.europa.eu/social/BlobServlet?docId=7758

[177] Laca, P., Chamonikolas, K., & Mortkowitz Bauerova, L. (2017, April 6). Czechs Trigger Long-Awaited Koruna Float Without Swiss Shock. Bloomberg. Retrieved April 1, 2017, from https://www.bloomberg.com/news/articles/2017-04-06/czech-central-bank-ends-currency-cap-to-let-koruna-float-again?cmpid=socialflow-facebook-business&utm_content=business&utm_campaign=socialflow-organic&utm_source=facebook&utm_medium=social

[178] Rupp, L., Coleman-Lochner, L., & Turner, N. (2017, April 7). America's Retailers Are Closing Stores Faster Than Ever. Bloomberg. Retrieved March 31, 2017, from https://www.bloomberg.com/news/articles/2017-04-07/stores-are-closing-at-a-record-pace-as-amazon-chews-up-retailers?cmpid=socialflow-facebook-business&utm_content=business&utm_campaign=socialflow-organic&utm_source=facebook&utm_medium=social

[179] Giles, C. (2017, April 7). What is happening to the British economy? Financial Times. Retrieved March 29, 2017, from https://www.ft.com/content/b00a2334-1b7b-11e7-bcac-6d03d067f81f

[180] Bloomberg. (2017, March 30). Tony Robbins Says Don't Fear a Stock Market Crash. Retrieved March 30, 2017, from https://www.bloomberg.com/news/videos/2017-03-30/tony-robbins-says-don-t-fear-a-stock-market-crash-video?cmpid=socialflow-facebook-business&utm_content=business&utm_campaign=socialflow-organic&utm_source=facebook&utm_medium=social

America[181]. What is more The Guardian disclosed that the Bank of England has said that "we are probably not going to forecast the next financial crisis" the article does, however, offer five potential sources of the new crisis - stock market, car loans and credit card debt, house prices, Chinese slowdown, federal reserves[182]; all in all this entails that no one can know what another crisis is coming and sleeping with one eye open is your own choice. Also the Financial Times discuss the difficult situation that China is in , with its growing debt and argues that this cannot go on for much longer[183]. Another journal indicates that with the uncertainties of Trump's reforms the crisis may come as soon as 2017 or 2018[184]. Another thing that the OECD employment outlook 2016 touches upon is that, first, the increase in employment has been extremely slow and uneven amongst countries and it is unknown if all countries will regain their employment rates before the next crisis hits; and second, it is mentioned that the desire to be employed is rapidly increasing, which in turn creates a pressure on the job creation front[185]. It is easy to see why this is a problem if we look at a simple labor market equilibrium graph, which depicts the relationship between: labor supply, labor demand and real wages[186]. If labour supply increases but labour demand stays the same then the real wages must go down, in turn, with less income, people spend less, which in turn has an effect on the country's GDP, this is, of course taking into account that the saving to spending ratio does not change[187]. Also experts on Bloomberg such as Carson Block has said that there is a chance that the US will default and that

[181] Stock, K. (2017, February 21). The Next Financial Crisis Might Be in Your Driveway. Bloomberg. Retrieved March 29, 2017, from https://www.bloomberg.com/news/articles/2017-02-21/the-next-financial-crisis-might-be-in-your-driveway

[182] Inman, P. (2017, February 25). The Bank of England fears it may not spot the next crisis. Here's where to look. The Guardian. Retrieved April 1, 2017, from https://www.theguardian.com/business/2017/feb/25/bank-of-england-fears-may-not-spot-next-crisis-five-places-to-look

[183] Wolf, M. (2017, April 11). China faces a tough fight to escape its debt trap. Financial Times. Retrieved April 1, 2017, from https://www.ft.com/content/1c096f7e-1ddc-11e7-b7d3-163f5a7f229c

[184] Bruno, A. (2017, March 22). "Economic Crash 2017" and How Next Financial Crisis Could Be Worse than 2008. Lombardi Letter. Retrieved April 4, 2017, from https://www.lombardiletter.com/economic-crash-2017-and-how-the-next-financial-crisis-could-be-worse-than-2008/6973/

[185] Organisation for Economic Co-operation and Development (OECD). (2016, July 7). *OECD Employment Outlook 2016*. Paris: OECD Publishing. doi:10.1787/empl_outlook-2016-en

[186] Cooper, R., & John, A. A. (2017). Microeconomics: Theory Through Applications. Retrieved April 3, 2017, from http://catalog.flatworldknowledge.com/bookhub/reader/2992?e=coopermicro-ch17_s03#coopermicro-ch17_s03_f01

[187] Angeles, L. (2008). GDP per capita or Real Wages? Making sense of. *Explorations in Economic History, 45*(2), 147-163. doi:10.1016/j.eeh.2007.09.002

he does not think that people are ready for this[188], it is important to note this, as it was seen in the previous financial crisis, what effect the problems in the US can have on Europe and the rest of the world. Due to all this, the pessimistic model follows a similar trend to that during the crisis.

[188] Bloomberg. (2017, April 17). Carson Block Says There's a Real Chance U.S. Will Default. Retrieved April 6, 2017, from https://www.bloomberg.com/news/videos/2017-04-17/carson-block-real-chance-u-s-will-default-video

3. METHODOLOGY

The methodology section is divided into two parts: pre-forecast methodology and forecast methodology. This is done to distinguish regressions (pre-forecast method) from the regression output application (forecast methodology).

3.1 Pre-forecast methodology

3.1.1 Research design

The main purpose of this research is to find out if the Europe 2020 target for all Baltic countries is attainable in both optimistic and pessimistic scenarios. The most appropriate research design to use in this situation is a quantitative longitudinal research design by using cross-country panel data over a period of time. Panel data sets are considered better than simple cross-sectional or time series data due to more variability and less of a collinearity. This leads to more efficient and reliable results[189].

Research questions

As previously stated this thesis attempts to answer the following research questions:

1. Will the Europe 2020 national level targets be reached in all three country cases in both scenarios (optimistic/pessimistic)?
2. What are the expected employment rates for men and women in the Baltic countries in both scenarios (optimistic/pessimistic)?

In order to answer the set research questions it is necessary to find variables that would have an influence on the employment rate. Then once the alpha and betas are calculated from existing data, we can apply them to the forecast to see the new level of employment based on the scenario assumptions.

[189] Kimino, S., Saal, D. S., & Driffield, N. (2007). Macro Determinants of FDI Inflows to Japan: An Analysis of Source Country Characteristics. *The World Economy, 30*(3), 446-469. doi:10.1111/j.1467-9701.2007.01001.x

Hypothesis

Table 3.1

Set hypothesis for Estonia

Variable	**Influence on the employment rate**	**Influence on the employment rate (males)**	**Influence on the employment rate (females)**
Education	Positive		
GDP per capita	Positive	Positive	Positive
Population	Negative	Negative	Negative
Minimum wage		Positive	
Gender pay gap			Negative

Table 3.2

Set hypothesis for Latvia

Variable	**Influence on the employment rate**	**Influence on the employment rate (males)**	**Influence on the employment rate (females)**
Education	Positive	Positive	Positive
GDP per capita	Positive	Positive	Positive
Population	Negative		
Minimum wage		Positive	
Gender pay gap			Negative

Table 3.3

Set hypothesis for Lithuania

Variable	**Influence on the employment rate**	**Influence on the employment rate (males)**	**Influence on the employment rate (females)**
Education		Positive	Positive
GDP per capita	Positive	Positive	Positive
Population	Negative		Negative
Minimum wage		Positive	
Gender pay gap	Negative		

All variables are discussed in different research both by the EU's institutions as well as others, as an example, a study named "Relationships between wages and employment indicators"[190]. The variables can be viewed as KPIs (key performance indicators)[191], meaning if they are constantly improving, then so should the employment rate.

3.1.2 The regression model of the study

The first part of the research is based on the model of Dumicic, K et al. (2015). The purpose of their research was to investigate the relationship between the unemployment rate and two selected development indicators. The analysis was based on cross-sectional data for 2013. For the regression, they chose an OLS estimator. Their model was as follows:

$$lny = \beta_0 + \beta_1 lnx_1 + \varepsilon$$

Where y is the dependent variable, in this case – unemployment and x the independent variable in the specific study – GDP per capita or the internet penetration rate[192].

To adjust the model to fit this research more variables are introduced into the equation as well as using the employment rate rather than unemployment rate considering the relationship between the two rates according to their definitions[193,194]:

$$employment\ rate = 100\% - unemployment\ rate$$

This research will apply the following regression model:

$$lnemplyr_{i,t} = \alpha + \beta_1 lnGDPpC_{i,t} + \beta_2 lneduc_{i,t} + \beta_3 lnpop_{i,t} + \varepsilon_{it}$$

[190] Bocean, C. G. (2015). Relationships Between Wages And Employment Indicators. *Revista Tinerior Economisti (The Young Economists Journal), 1* (24), 41-50.

[191] Bonfiglio, A., Delfino, F., Invernizzi, M., & Procopio, R. (2017). A Methodological Approach to Assess the Impact of Smarting Action on Electricity Transmission and Distribution Networks Related to Europe 2020 Targets. *Energies, 10*(2), 1-17. doi:10.3390/en10020155

[192] Dumičić, K., Bucevska, V., & Resic, E. (2015). Recent Impacts of Selected Development Indicators on Unemployment Rate: Focusing the SEE Countries. *Interdisciplinary Description of Complex Systems : INDECS, 13*(3), 420-433. doi:10.7906/indecs.13.3.7

[193] Eurostat. (2010). *Statistics explained: Glossary:Unemployment*. Retrieved April 4, 2017, from http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Unemployment

[194] Eurostat. (2014). *Statistics explained: Glossary:Employment rate*. Retrieved April 5, 2017, from http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Employment_rate

where $lnemplyr_{i,t}$ is the employment rate in country i at time t, $lnGDPpC_{i,t}$ is the GDP per capita in country i at time t, , $lneduc_{i,t}$ is the tertiary education attainment in country i at time t, $lnpop_{i,t}$ is the population in country i at time t, ε is the error term.

Moreover, the study provides for more regressions, separated for men and women in all three countries such that:

- For men:
    - Estonia, Latvia

$$lnemplyr_{i,t} = \alpha + \beta_1 lnGDPpC_{i,t} + \beta_2 lnpop_{i,t} + \beta_3 lnminwa_{i,t} + \varepsilon_{it}$$

where $lnemplyr_{i,t}$ is the employment rate for men in country i at time t, $lnGDPpC_{i,t}$ is the GDP per capita in country i at time t, $lnpop_{i,t}$ is the male population in country i at time t, $lnminwa_{i,t}$ is the minimum wage in country i at time t, ε is the error term.

    - Lithuania

$$lnemplyr_{i,t} = \alpha + \beta_1 lnGDPpC_{i,t} + \beta_2 lnpop_{i,t} + \beta_3 lngap_{i,t} + \varepsilon_{it}$$

where $lnemplyr_{i,t}$ is the employment rate for men in country i at time t, $lnGDPpC_{i,t}$ is the GDP per capita in country i at time t, $lnpop_{i,t}$ is the male population in country i at time t, $lngap_{i,t}$ is the gender pay gap in country i at time t, ε is the error term.

- For women:
    - Estonia

$$lnemplyr_{i,t} = \alpha + \beta_1 lnGDPpC_{i,t} + \beta_2 lnpop_{i,t} + \beta_3 lngap_{i,t} + \varepsilon_{it}$$

where $lnemplyr_{i,t}$ is the employment rate for women in Estonia at time t, $lnGDPpC_{i,t}$ is the GDP per capita in Estonia at time t, $lnpop_{i,t}$ is the female population in Estonia at time t, $lngap_{i,t}$ is the female wage in Estonia at time t, ε is the error term.

    - Latvia

$$lnemplyr_{i,t} = \alpha + \beta_1 lnGDPpC_{i,t} + \beta_2 lneduc_{i,t} + \beta_3 lngap_{i,t} + \varepsilon_{it}$$

where $lnemplyr_{i,t}$ is the employment rate for women in Latvia at time t, $lnGDPpC_{i,t}$ is the GDP per capita in Latvia at time t, $lneduc_{i,t}$ is the tertiary education attainment of women in Latvia at time t, $lngap_{i,t}$ is the female wage in Latvia at time t, ε is the error term.

    - Lithuania

$$lnemplyr_{i,t} = \alpha + \beta_1 lnGDPpC_{i,t} + \beta_2 lneduc_{i,t} + \beta_3 lnpop_{i,t} + \varepsilon_{it}$$

where $lnemplyr_{i,t}$ is the employment rate of women in Lithuania at time t, $lnGDPpC_{i,t}$ is the GDP per capita in country i at time t, $lneduc_{i,t}$ is the tertiary education attainment for women in Lithuania at time t, $lnpop_{i,t}$ is the women population in Lithuania at time t, ε is the error term.

The different regressions are applied in order to reach the most reliable results, the selected variables in the regressions were taken considering, first, that they have been described in the literature as having an impact on employment rate, and second, that whilst running tests, the regressions depict the best adjusted R-squared and significant P values.

3.2 Forecast methodology

3.2.1 Description of the forecast model

As many studies suggest, it is necessary to update forecasts whenever new information is available, forecasts are a mixture of assumptions, facts and science[195]. The forecast depicts two scenarios – optimistic and pessimistic, in line with WEF discussion of two scenarios for Europe from 2016 to 2026[196].

The optimistic model methodology is based on stationary series average forecasting. The chosen time period is from 2010 till the latest available date. Once the average is generated for all the necessary variables, the regression coefficients are recalculated to the necessary percentages. This is done because the regression results depict a one percent increase effect on the employment rate. Then considering the increase effect (coefficient change due to different percentage increases/decreases) the employment rate is calculated.

As for the pessimistic scenario the approach is somewhat similar. The increase/decrease for each variable is calculated by calculating the specific variable's increase/decrease in the time period of: 2007 to 2008, 2008 to 2009, 2009 to 2010, 2010 to 2011. Once this is done, the coefficients are calculated for each separate change and according to this the employment rate is calculated.

[195] Bos, F., & Teulings, C. (2013, December 23). Short- and long-term forecasting by the Netherlands Bureau for Economic Policy Analysis (CPB). *OECD Journal on Budgeting, 13*(1), 45-56. doi:10.1787/budget-13-5k409g58z133

[196] Bildt, C. (2016, February 24). Europe in 2026: nightmare or utopia? World Economic Forum. Retrieved April 3, 2017, from https://www.weforum.org/agenda/2016/02/two-scenarios-for-europe-in-2026/

3.2.2 Assumptions for optimistic and pessimistic scenarios

Optimistic scenario:

- Continuous development based on the average increases/decreases in variables since 2010, as this is when the target was approved:
    - GDP per capita
    - Population structure
    - Minimum wage
    - Gender pay gap
    - Education level
- All reforms are stable and no new ones are introduced

Pessimistic scenario:

- Depicting growth in 2017, 2018, 2019, 2020, as it was 2007 to 2008, 2008 to 2009, 2009 to 2010, 2010 to 2011
    - GDP per capita
    - Population structure
    - Minimum wage
    - Gender pay gap
    - Education level
- All reforms stay stable, no new reforms introduced

3.3 Applied data and its sources

The dataset consists of employment rate data from 2000 to 2016 for Estonia, Latvia and Lithuania. The data is taken from Eurostat, as the latest available data for Estonia in the national database at the time of this paper was for the age group 15-74[197]. The sample period for independent variables is 2000-2015 or 2016, depending on the data availability. There is also some imbalance with the available data if comparing the countries, as not all three countries have all the necessary data for 2016. As for the starting period, this was chosen in order to lessen the

[197] Statistics Estonia. (2017, February 14). No major changes in the labour market. Retrieved April 3, 2017, from https://www.stat.ee/news-release-2017-019

effect of a completely new economy and putting all countries at an equal position after the Russian crisis. The forecast model is for 2017-2020 (a 3 year period).

There are different sources for the necessary data. The primary sources were the national statistic bureaus and others included OECD and Eurostat. Further, there is a description of each variable used in both the regression and the forecast. The description describes the source of data, the definition and gives a brief overview of the data development over the years in a graph.

Employment rate

The employment rate variable depicts the employed persons in comparison to the population. The data was collected from Eurostat database. By definition: the indicator depicts adult employment rate between the ages of 20 to 64. The indicator is provided as: total, men, women. The retrieved data is for 2000-2016 for all three Baltic countries.

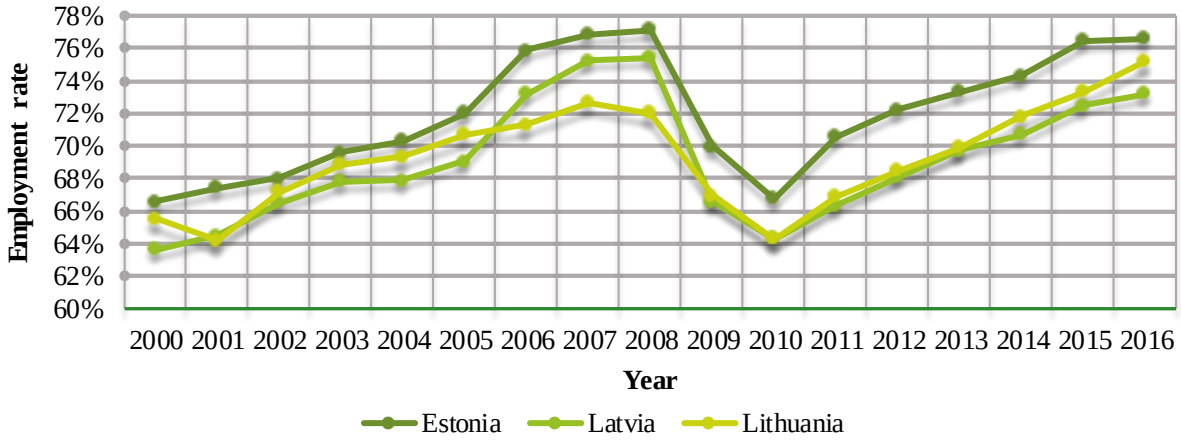

Figure 3.1 **Total employment rate (2000-2016)**
Source: European Commission and Eurostat online database[198]

[198] European Commission and Eurostat online database. (2017, April 24). Employment and activity by sex and age - annual data, code [lfsi_emp_a]. Retrieved April 4, 2017, from http://appsso.eurostat.ec.europa.eu/nui/show.do?query=BOOKMARK_DS-053312_QID_58DAC86_UID_-3F171EB0&layout=SEX,L,X,0;GEO,L,Y,0;AGE,L,Z,0;UNIT,L,Z,1;TIME,C,Z,2;INDIC_EM,L,Z,3;INDICATORS,C,Z,4;&zSelection=DS-053312INDIC_EM,EMP_LFS;DS-053312AGE,Y20-64;DS-0533

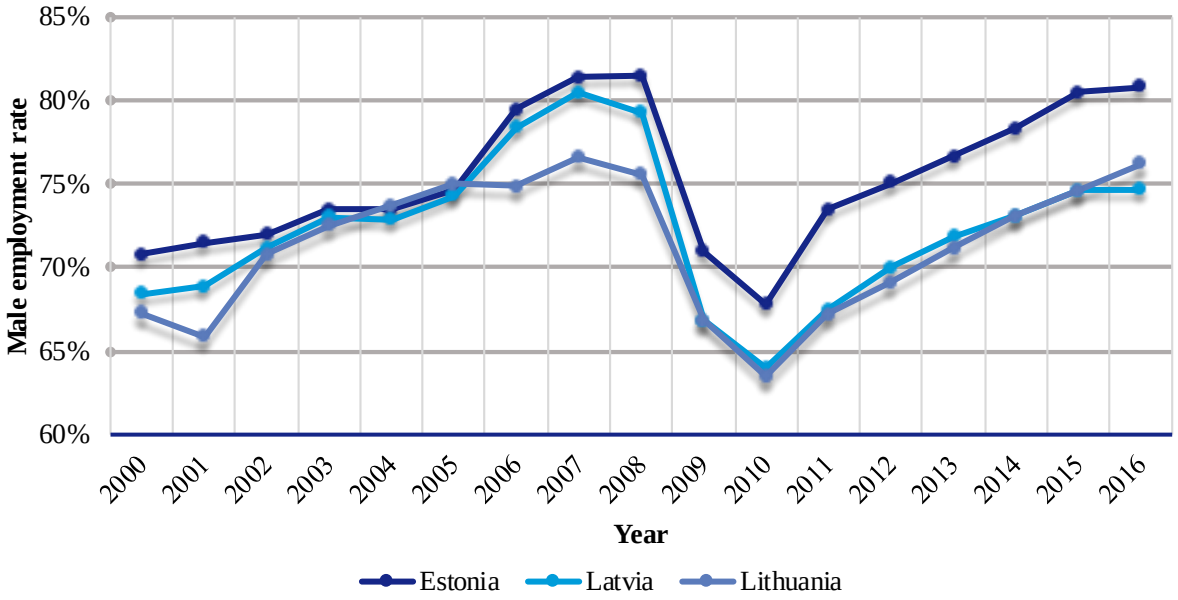

Figure 3.2 **Male employment rate (2000-2016)**
Source: European Commission and Eurostat online database[199]

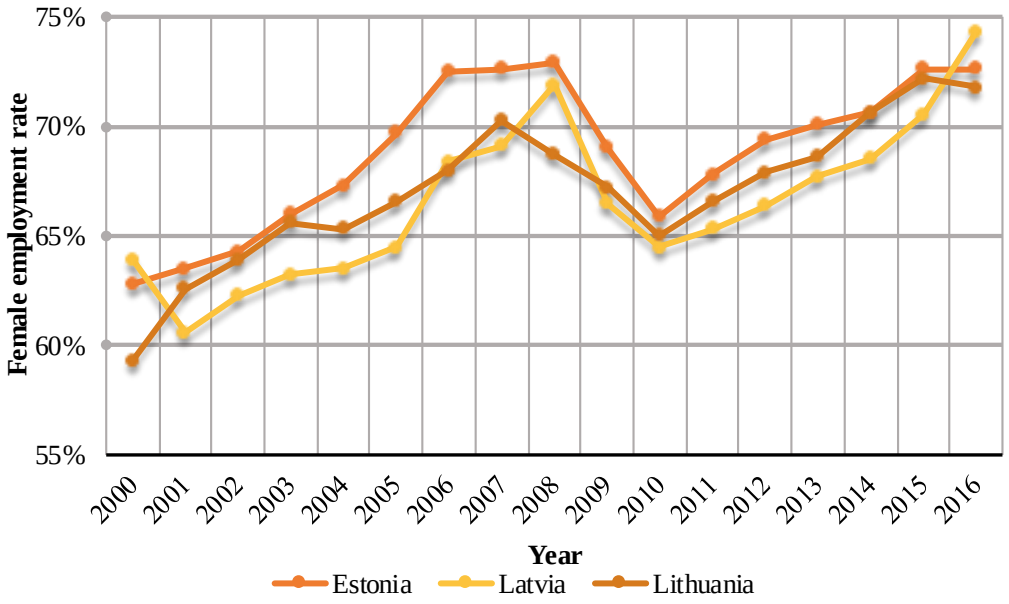

Figure 3.3 **Male employment rate (2000-2016)**
Source: European Commission and Eurostat online database[200]

[199] European Commission and Eurostat online database. (2017, April 24). Employment and activity by sex and age - annual data, code [lfsi_emp_a]. Retrieved April 4, 2017, from http://appsso.eurostat.ec.europa.eu/nui/show.do?query=BOOKMARK_DS-053312_QID_58DAC86_UID_-3F171EB0&layout=SEX,L,X,0;GEO,L,Y,0;AGE,L,Z,0;UNIT,L,Z,1;TIME,C,Z,2;INDIC_EM,L,Z,3;INDICATORS,C,Z,4;&zSelection=DS-053312INDIC_EM,EMP_LFS;DS-053312AGE,Y20-64;DS-0533
[200] Ibid

Education

The education variable depicts tertiary education attainment. The data was collected from the OECD database. By definition: the indicator depicts adult education completed between the ages of 25 to 64. The indicator is provided as: total, men, women. The retrieved data is for 2000-2015 for all three Baltic countries. However, it is noted that there is no data for Lithuania 2001-2004.

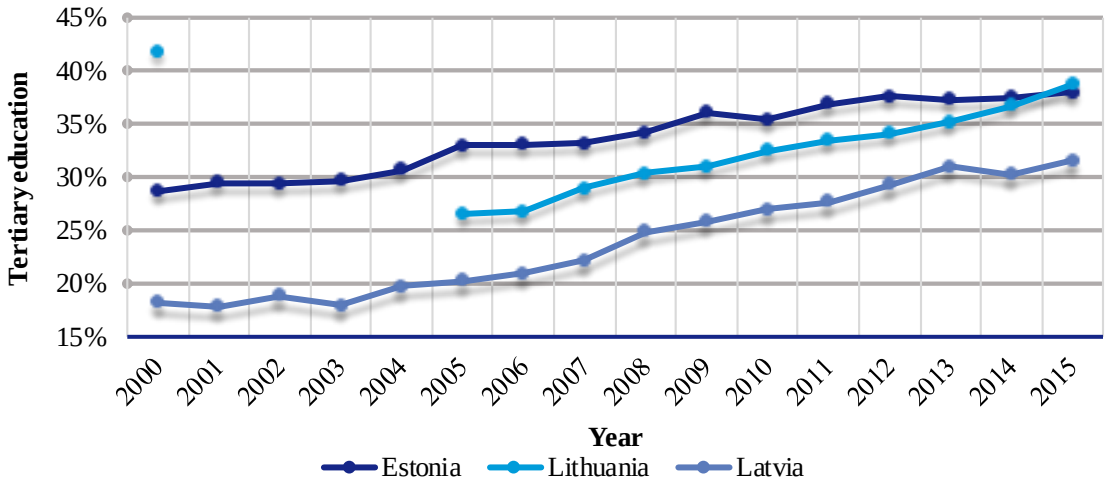

Figure 3.4 **Tertiary education 2000-2015 (total)**
Organisation for Economic Co-operation and Development[201]

[201] Organisation for Economic Co-operation and Development (OECD). (2017). Adult education level (indicator). Retrieved April 3, 2017, from https://data.oecd.org/eduatt/adult-education-level.htm#indicator-chart

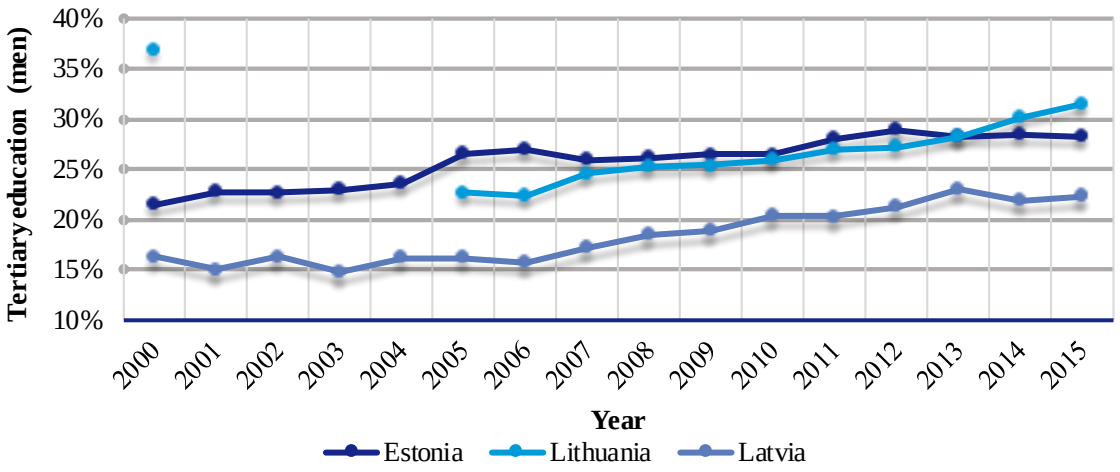

Figure 3.5 **Tertiary education 2000-2015 (men)**
Organisation for Economic Co-operation and Development[202]

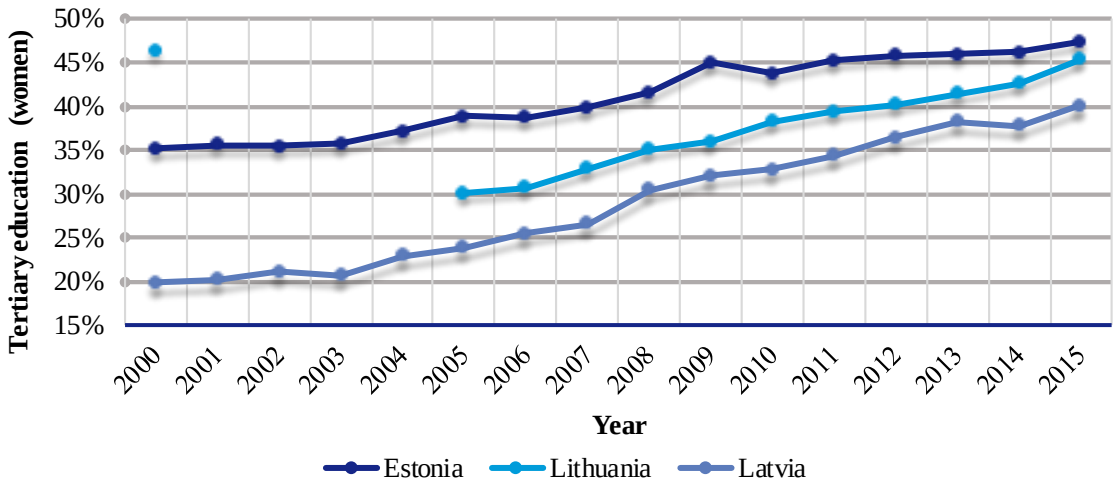

Figure 3.6 **Tertiary education 2000-2015 (women)**
Organisation for Economic Co-operation and Development[203]

GDP per capita

The GDP per capita variable depicts the economic output of each country taking into account the population. The data was collected from all three national statistic databases: Statistics Estonia, Statistics Lithuania and Central Statistical Bureau of Latvia. The indicator is

[202] Ibid

[203] Organisation for Economic Co-operation and Development (OECD). (2017). Adult education level (indicator). Retrieved April 3, 2017, from https://data.oecd.org/eduatt/adult-education-level.htm#indicator-chart

provided as: total. The retrieved data is for 2000-2016 for all three Baltic countries with no missing values.

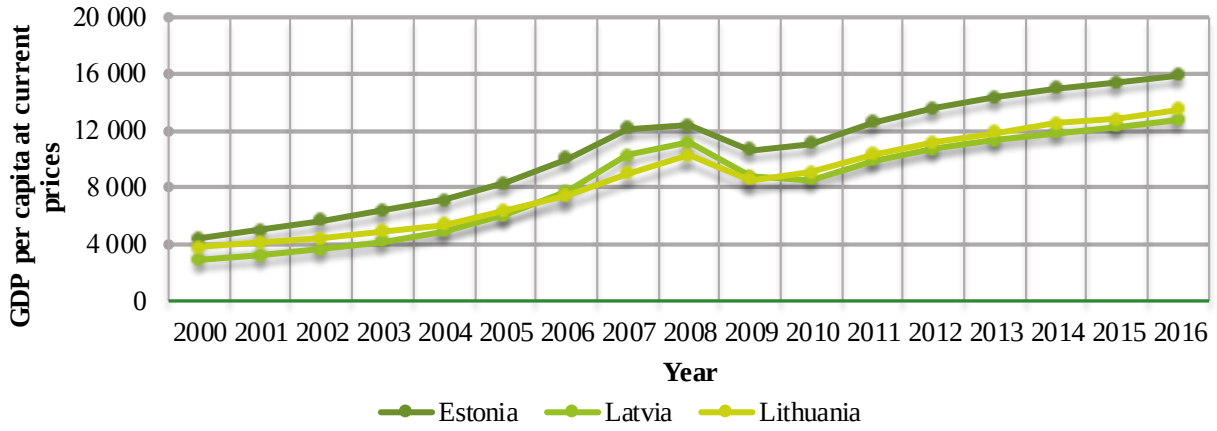

Figure 3.7 **GDP per capita at current prices (2000-2016)**
Source: Statistics Lithuania[204], Central Statistical Bureau of Latvia (CSB)[205], Statistics Estonia[206]

Population

The population variable depicts the resident population at the beginning of the year. The data was collected from all three national statistic databases: Statistics Estonia, Statistics Lithuania and Central Statistical Bureau of Latvia. The indicator is provided as: total, males and females. The retrieved data is for 2001-2016 for Lithuania; 2000-2016 for Estonia; 2000-2016 for Latvia.

[204] Statistics Lithuania. (2017). *National accounts: Database of Indicators*. Retrieved March 31, 2017, from http://osp.stat.gov.lt/en/rodikliai38

[205] Central Statistical Bureau of Latvia (CSB). (2017, March 24). Gross domestic product, code [IKG10_01]. Retrieved April 1, 2017, from http://data.csb.gov.lv/pxweb/en/ekfin/ekfin__ikgad__ikp/IK10_0010.px/?rxid=cdcb978c-22b0-416a-aacc-aa650d3e2ce0

[206] Statistics Estonia. (2017, March 27). Gross domestic product and gross national income per capita (ESA 2010), code [NAA0013]. Retrieved March 29, 2017, from http://pub.stat.ee/px-web.2001/Dialog/varval.asp?ma=NAA0013&ti=GROSS+DOMESTIC+PRODUCT+AND+GROSS+NATIONAL+INCOME+PER+CAPITA+%28ESA+2010%29&path=../I_Databas/Economy/23National_accounts/01Gross_domestic_product_%28GDP%29/12Main_national_accounts_indicators/

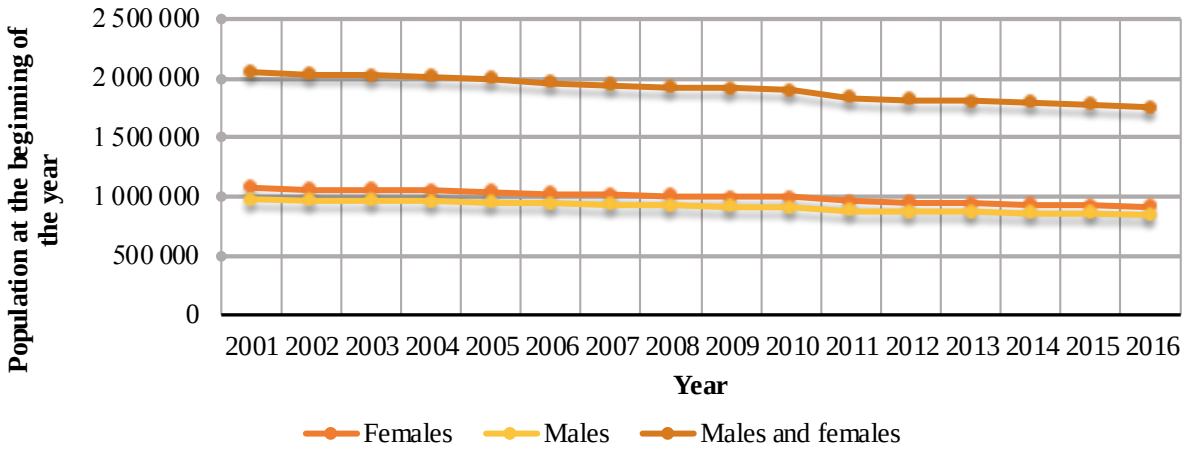

Figure 3.8 **Population at the beginning of the year in Lithuania ages 20-64**
Source: Statistics Lithuania[207]

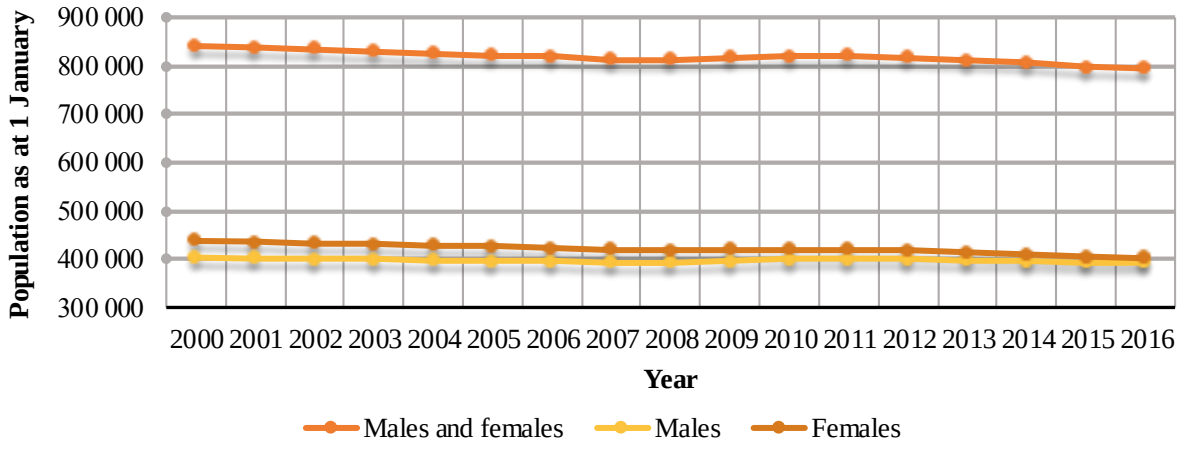

Figure 3.9 **Population as at 1 January ages 20-64 in Estonia**
Source: Statistics Estonia[208]

[207] Statistics Lithuania. (2017). *Population: Database of Indicators*. Retrieved April 3, 2017, from http://osp.stat.gov.lt/en/rodikliai5

[208] Statistics Estonia. (2017, April 5). Population by sex and age group, 1 january, code [PO021]. Retrieved March 28, 2017, from http://pub.stat.ee/px-web.2001/Dialog/varval.asp?ma=PO021&ti=POPULATION+BY+SEX+AND+AGE+GROUP%2C+1+JANUARY&path=../I_Databas/Population/01Population_indicators_and_composition/04Population_figure_and_composition/&lang=1

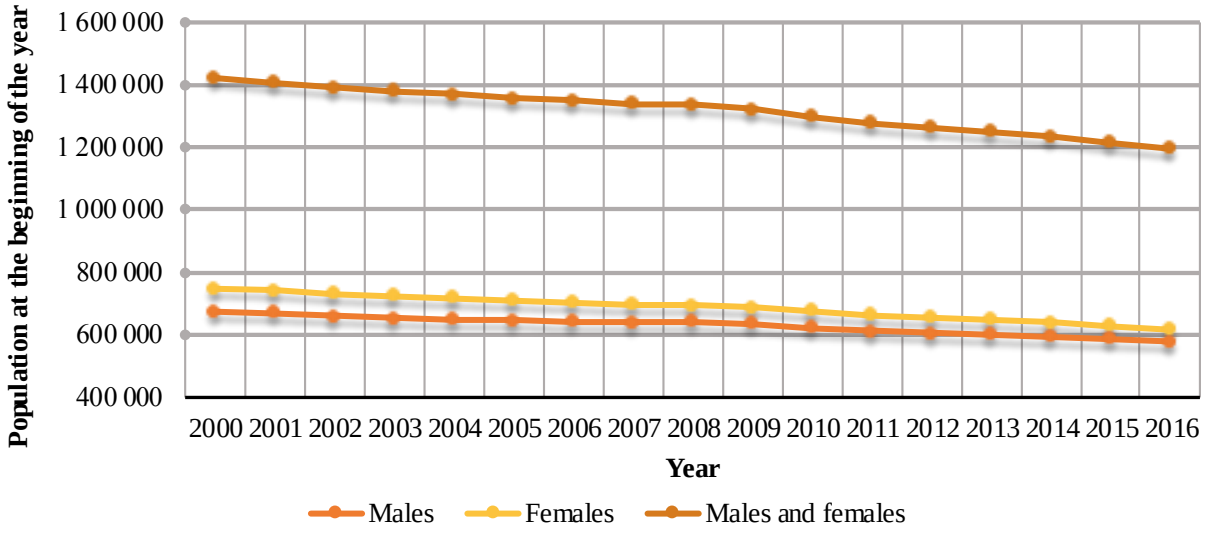

Figure 3.10 **Population at the beginning of the year ages 20-64 in Latvia**
Source: Central Statistical Bureau of Latvia (CSB)[209]

Minimum wage

The minimum variable depicts the minimum wage at the beginning of the year. The data was collected from the Eurostat database. The indicator is provided as: total. The retrieved data is for 2000-2016 for all three Baltic countries with no missing values.

[209] Central Statistical Bureau of Latvia (CSB). (2016, August 8). Population by sex and age at the beginning of year, code [ISG06]. Retrieved April 4, 2017, from http://data.csb.gov.lv/pxweb/en/Sociala/Sociala__ikgad__iedz__iedzskaits/IS0060.px/?rxid=a79839fe-11ba-4ecd-8cc3-4035692c5fc8

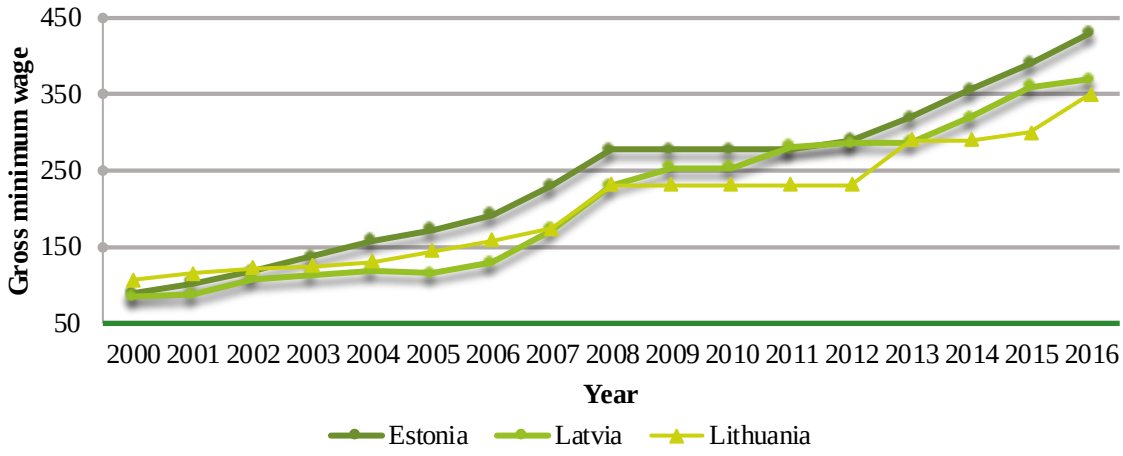

Figure 3.11 **Gross minimum wage by country**
Source: European Commission and Eurostat online database[210]

Gender pay gap

The gender pay gap variable depicts the difference between men and female average gross hourly earnings as a percentage of the male average gross hourly earnings. The data was collected from Eurostat database. The indicator is provided as a percentage. The retrieved data is for 2006-2015 for Latvia and Estonia; 2002;2006-2015 for Lithuania.

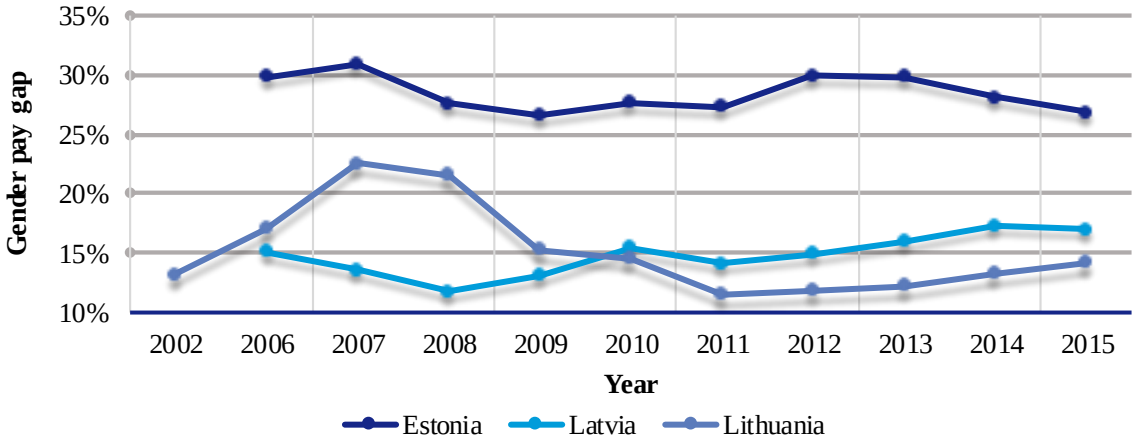

Figure 3.12 **Gender pay gap**
Source: European Commission and Eurostat online database[211]

[210] European Commission and Eurostat online database. (2017, February 6). Monthly minimum wages - bi-annual data, code [earn_mw_cur]. Retrieved March 29, 2017, from http://ec.europa.eu/eurostat/en/web/products-datasets/-/EARN_MW_CUR

[211] European Commission and Eurostat online database. (2016, April 3). Gender pay gap in unadjusted form, code [tsdsc340]. Retrieved April 5, 2017, from http://ec.europa.eu/eurostat/tgm/table.do?tab=table&plugin=1&language=en&pcode=tsdsc340

4. ANALYSIS AND DISCUSSION OF RESULTS

4.1 Regression results on total, male and female employment rates

With regards to the output of the first part of the methodology – OLS (ordinary least squares) regressions. The output was the following. Regarding the total employment rate regressions (not divided by gender). In Estonia all of the chosen variables were significant at a 95% confidence interval according to their P-values. Education and population have a negative effect on the employment, whilst GDP per capita has a positive one. Thus, the hypothesis regarding education was not accepted, whilst the other two regarding population and GDP per capita are accepted. Regarding the coefficient for education, the explanation may lie in that people often choose to just study and thus have not entered the labour market at a young age.

Table 4.1

Total employment rate: Estonia

lnemplyr	Coef	P>|t|	Numberof obs	Adj R-squared
lneduc	-0.60	0.001	16	0.68
lnpop	-2.86	0.032	16	0.68
lngdppc	0.13	0.037	16	0.68
_cons	36.72	0.045	16	0.68

For Latvia we can see a slightly different picture, as the statistically significant variables at 95% confidence interval are only two – education and GDP per capita. The population is not statistically significant in the case of Latvia. However, the coefficients are negative for education and population and positive for GDP per capita, just as it was in the case of Estonia. Thus, the hypothesis regarding education was not accepted, whilst the other two regarding population and GDP per capita are accepted. Regarding the coefficient for education, the explanation may lie in that people often choose to just study and thus have not entered the labour market at a young age.

Table 4.2

Total employment rate: Latvia

lnemplyr	Coef	P>|t|	Numberof obs	Adj R-squared
lneduc	-0.57	0.001	16	0.63
lnpop	-0.33	0.664	16	0.63
lngdppc	0.30	0	16	0.63
_cons	0.79	0.942	16	0.63

For Lithuania one can see that the variables are all significant at 95% confidence interval level, similarly to the case of Estonia, the P-values are not higher than 0.03. The coefficients for the variables are negative for population and GDP per capita, but are positive for gender pay gap. Thus, the hypothesis regarding the gender pay gap was not accepted, whilst the other two regarding population and GDP per capita are accepted. The gender gap variable coefficient can be explained by the fact that if the income level of males was higher, they would participate in the labour force.

Table 4.3

Total employment rate: Lithuania

lnemplyr	Coef	P>|t|	Numberof obs	Adj R-squared
lnpop	-2.02	0.01	11	0.52
lngdppc	-0.16	0.03	11	0.52
lngap	0.29	0.001	11	0.52
_cons	30.78	0.01	11	0.52

Further dividing the results by gender, we can see that for men in Estonia the P-values for all selected variables are significant at 95% confidence interval. The coefficients for population and minimum wage are negative, whilst the one for GDP per capita is positive. Thus, the hypothesis about GDP per capita and population are accepted whilst the one on minimum wage is rejected. And although the minimum wage coefficient might seem wrong at first, if we look at it from the perspective of an employer, we can see that from that perspective the labour cost would rise, and in order to have the same profit, the increase would have to be passed on the customer through a price increase, which, of course, no customer wants.

Table 4.4

Employment rate for men: Estonia

lnemplyr	Coef	P>|t|	Numberof obs	Adj R-squared
lnpop	-5.64	0.001	17	0.71
lngdppc	0.25	0.017	17	0.71
lnminwa	-0.22	0.013	17	0.71
_cons	71.28	0.001	17	0.71

For men in Latvia the results differ, as not all variables are statistically significant at 95% significance level. Significant are only GDP per capita and minimum wage, whilst education is not. The coefficients for education and minimum wage are negative, whilst the one for GDP per capita is positive. Thus, the two out of three hypothesis are rejected (for education and minimum wage), whilst the one for GDP per capita is accepted. Whilst having a negative coefficient might seem counterintuitive from an employee perspective, it is easily explainable from the perspective of an employer, as his labor costs would increase, the employer might not be able to employ as many people, thus decreasing the employment rate. As for the coefficient for education, the explanation may lie in that people often choose to just study and thus have not entered the labour market at a young age.

Table 4.5

Employment rate for men: Latvia

lnemplyr	Coef	P>|t|	Numberof obs	Adj R-squared
lneduc	-0.30	0.224	16	0.55
lngdppc	0.40	0.001	16	0.55
lnminwa	-0.24	0.035	16	0.55
_cons	-3.18	0.002	16	0.55

Regarding the men in Lithuania, it can be seen that here are two variables, which are statistically significant at 95% significance level – GDP per capita and minimum wage. The coefficients for education and GDP per capita are positive whilst the one for minimum wage is negative. As previously mentioned, this might be explained from an employer's perspective. With respect to the hypothesis, two are accepted (education and GDP per capita) whilst one is rejected (minimum wage).

Table 4.6

Employment rate for men: Lithuania

lnemplyr	Coef	P>|t|	Numberof obs	Adj R-squared
lneduc	0.14	0.322	12	0.48
lngdppc	0.31	0.016	12	0.48
lnminwa	-0.35	0.016	12	0.48
_cons	-1.05	0.001	12	0.48

Further, the regressions for women are as follows. For women in Estonia, two out of three variables are significant at a 90% significance level. The two being gender pay gap and population. The coefficient for gender pay gap is positive whilst the coefficients for GDP per capita and population are negative. The gender pay gap coefficient might be explained by a psychological behavior, as women would feel more of a competition if the gap increased, and would want to prove that they can earn just as much as men. Whilst perhaps GDP per capita might be explained by the ideology that if a man earns more, the woman does not need to work and thus, does not feel the urge to participate in the labour force. Regarding the hypotheses, two out of three are rejected (GDP per capita and gender pay gap), whilst the one for population is accepted.

Table 4.7

Employment rate for women: Estonia

lnemplyr	Coef	P>|t|	Numberof obs	Adj R-squared
lngap	0.36	0.097	10	0.32
lngdppc	-0.17	0.229	10	0.32
lnpop	-2.75	0.075	10	0.32
_cons	37.29	0.08	10	0.32

In Latvia we can see that again, two out of three variables are significant at a 90% significance level, the two being education and GDP per capita. The coefficients for education and gender pay gap are negative, whilst for GDP per capita it is positive. Regarding the coefficient for education, the explanation may lie in that people often choose to only study and thus have not entered the labour market at a young age. Which leads to two hypotheses being accepted (GDP per capita and gender pay gap) whilst one is rejected (education).

Table 4.8

Employment rate for women: Latvia

lnemplyr	Coef	P>|t|	Numberof obs	Adj R-squared

lneduc	-0.31	0.094	10	0.245
lngdppc	0.30	0.054	10	0.245
lngap	-0.03	0.787	10	0.245
_cons	-3.52	0.034	10	0.245

In Lithuania the situation regarding women is slightly different, there are two variables which can be considered statistically significant at an 85% significance level the two being education and GDP per capita. The coefficients for education and population are negative whilst the one for GDP per capita is positive. The negative coefficient for education can be explained by the life dedication to studies as opposed to career, as, perhaps, the women are more reliant on the mens salaries. Regarding the hypotheses, the one for education is rejected whilst those for GDP per capita and population are accepted.

Table 4.9

Employment rate for women: Lithuania

lnemplyr	Coef	P>|t|	Numberof obs	Adj R-squared
lneduc	-0.36	0.155	11	0.4308
lngdppc	0.13	0.059	11	0.4308
lnpop	-0.95	0.211	11	0.4308
_cons	11.18	0.271	11	0.4308

Regarding robustness, the model does not have huge outliers regarding the dataset, meaning that the mean and median does not differ much. This in turn, means that the model is robust.

4.2 Optimistic and pessimistic forecast scenario results

The output for the two scenarios can be summaries as follows. As previously mentioned, the optimistic scenario follows an average trend. The averages for the optimistic scenario (that considers the average increase/decrease since 2010) is 1.44% for education, -0.52% for population and 6.29% for GDP per capita in Estonia. The recalculated and applied coefficient values in Estonia for the total employment rate calculation are: -0.86% for education, 1.48% for population, 0.83% for GDP per capita.

Table 4.10

Total employment rate: Estonia (used data)

	Average change since 2010	Applied recalculated coefficient value

Education	1.44%	-0.86%
Population	-0.52%	1.48%
GDP per capita	6.29%	0.83%

For Latvia, regarding the total employment rate calculation, the average increase for education since 2010 is 3.28%, for population its -1.38%, for GDP per capita it is 6.97% and the respective recalculated coefficient values are -1.88% for education, 0.46% for population, 2.09% for GDP per capita.

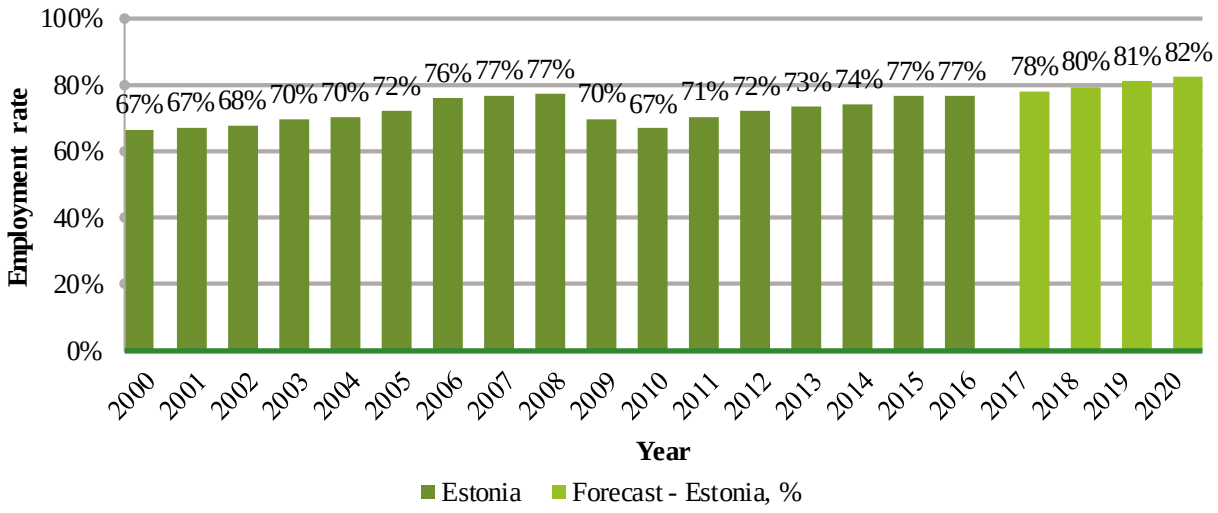

Figure 4.1 **Optimistic scenario: Employment rate in Estonia**
Source: Created by author

Table 4.11

Total employment rate: Latvia (used data)

	Average change since 2010	Applied recalculated coefficient value
Education	3.28%	-1.88%
Population	-1.38%	0.46%
GDP per capita	6.97%	2.09%

For Lithuania, the average increase/decrease for the variables regarding the total employment rate since 2010 is -1.30% for population, 6.97% for GDP per capita and 0.11% for gender pay gap. The recalculated and applied coefficient value is 2.62% for population, -1.10% for GDP per capita and 0.03% for gender pay gap.

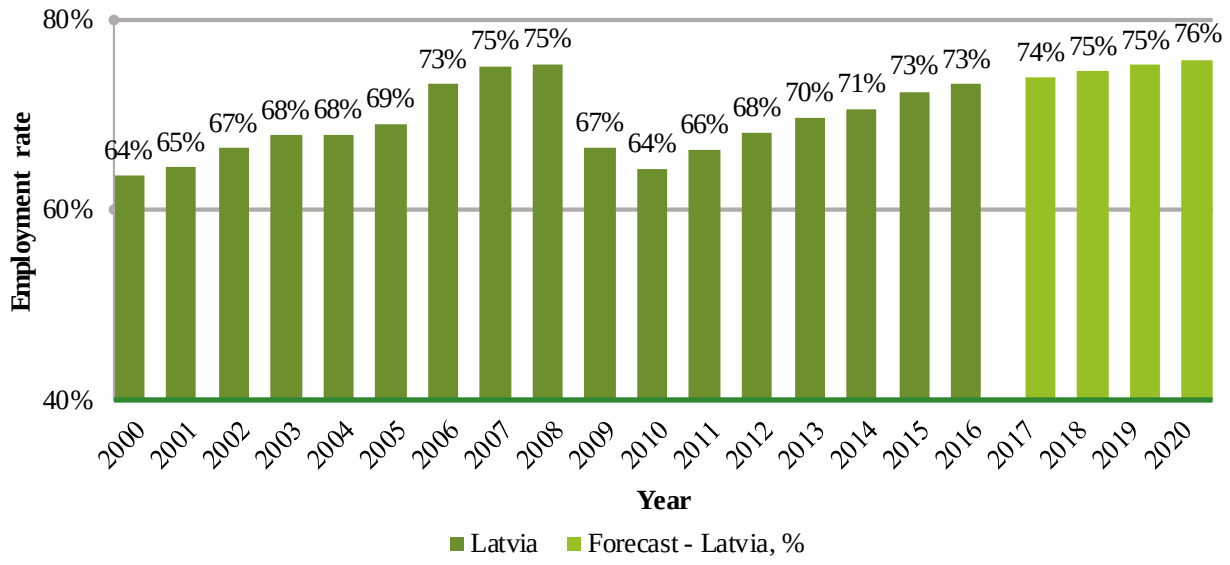

Figure 4.2 **Optimistic scenario: Employment rate in Latvia**
Source: Created by author

Table 4.12

Total employment rate: Lithuania (used data)

	Average change since 2010	Applied recalculated coefficient value
Population	-1.30%	2.62%
GDP per capita	6.97%	-1.10%
Gender pay gap	0.11%	0.03%

The outcome from these values is the following. For Estonia the employment rate continued to increase and by 2020 it reached 82%, exceeding the set target. For Latvia the employment rate would reach 76% by 2020, thus, also exceeding the set target. For Lithuania the expected employment rate for 2020 would be 81% and similar to the other two Baltic countries, it would exceed the set employment target.

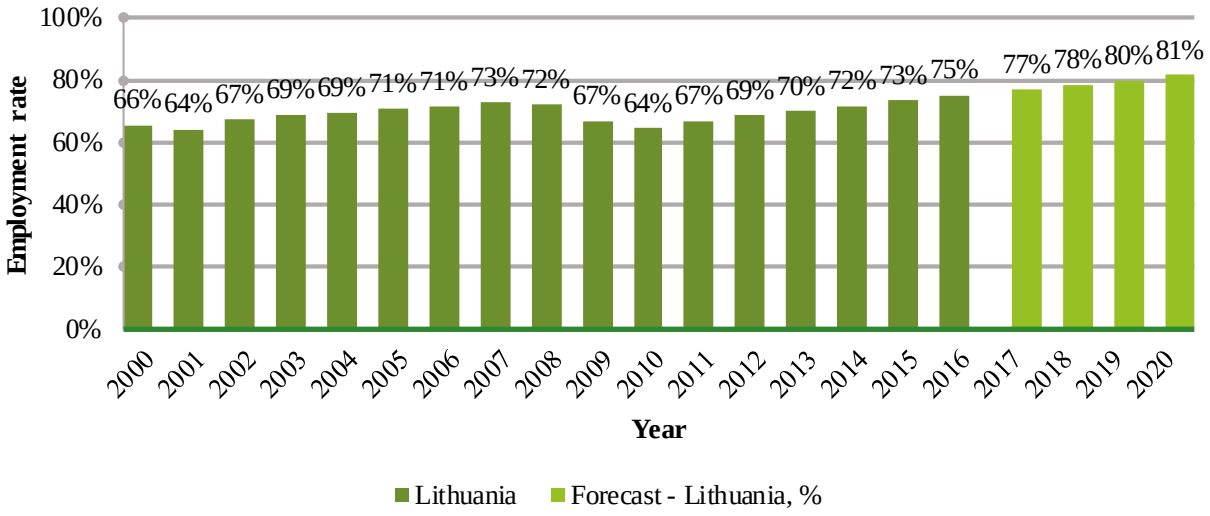

Figure 4.3 **Optimistic scenario: Employment rate in Lithuania**
Source: Created by author

Table 4.13

Optimistic scenario outcome: Total employment rate

Optimistic scenario outcome	2017	2018	2019	2020	Target
Total employment rate					
Estonia	78%	80%	81%	82%	76%
Latvia	74%	75%	75%	76%	73%
Lithuania	77%	78%	80%	81%	73%

The further division by gender gave the following results. For men in Estonia the average change in population since 2010 is -0.27%, for GDP per capita it is 6.29%, for the minimum wage it is 7.62%. The respective recalculated coefficient values are: population 1.54%, GDP per capita 1.57% and for the minimum wage it is -1.69%.

Table 4.14

Employment rate for men: Estonia (used data)

	Average change since 2010	Applied recalculated coefficient value
Population	-0.27%	1.54%
GDP per capita	6.29%	1.57%
Minimum wage	7.62%	-1.69%

For Latvia the averages for different variables are – education 1.85%, GDP per capita 6.91%, minimum wage 6.61%. The respective recalculated coefficient values are - education -0.55%, GDP per capita 2.79%, minimum wage -2.66%.

Table 4.15

Employment rate for men: Latvia (used data)

	Average change since 2010	Applied recalculated coefficient value
Education	1.85%	-0.55%
GDP per capita	6.91%	2.79%
Minimum wage	6.61%	-2.66%

For Lithuania the average change since 2010 is: education 3.94%, GDP per capita 6.97%, minimum wage it is 7.54%. According to these values, the coefficient values are recalculated and the output is: education 0.57%, GDP per capita 2.14%, minimum wage -2.66%.

Table 4.16

Employment rate for men: Lithuania (used data)

	Average change since 2010	Applied recalculated coefficient value
Education	3.94%	0.57%
GDP per capita	6.97%	2.14%
Minimum wage	7.54%	-2.66%

The optimistic scenario outcome regarding the employment rate for men is the following. In Estonia, it is predicted to be 86% by 2020, in Latvia it is expected to be 77% by 2020, in Lithuania it is expected to be 76% by 2020.

Table 4.17

Optimistic scenario outcome: Employment rate for men

Optimistic scenario outcome	2017	2018	2019	2020
Employment rate for men				
Estonia	82%	84%	85%	86%
Latvia	75%	76%	77%	77%
Lithuania	76%	76%	76%	76%

For women in Estonia the average change since 2010 for the gender pay gap is -0.45%, GDP per capita is 6.29%, population -1.41%. The recalculated coefficient values are: -0.16% gender pay gap, -1.09% GDP per capita, and 1.34% for population.

Table 4.18

Employment rate for women: Estonia (used data)

Employment rate for women: Estonia (used data)		
	Average change since 2010	Applied recalculated coefficient value
Gender pay gap	-0.45%	-0.16%
GDP per capita	6.29%	-1.09%
Population	-1.41%	1.34%

For Latvia the average change in education since 2010 is 4.18%, in GDP per capita it is 6.91%, gender pay gap is 2.08%. The corresponding recalculated coefficient values are – education -1.28%, GDP per capita 2.05%, for gender pay gap -0.06%.

Table 4.19

Employment rate for women: Latvia (used data)

	Average change since 2010	Applied recalculated coefficient value
Education	4.18%	-1.28%
GDP per capita	6.91%	2.05%
Gender pay gap	2.08%	-0.06%

For Lithuania the average change since 2010 for education for women is 3.46%, GDP per capita it is 6.97%, population it is -1.41% and the respective recalculated coefficient values are – education -1.24%, GDP per capita 0.88%, population 1.34%.

Table 4.20

Employment rate for women: Lithuania (used data)

	Average change since 2010	Applied recalculated coefficient value
Education	3.46%	-1.24%
GDP per capita	6.97%	0.88%
Population	-1.41%	1.34%

The optimistic scenario outcome regarding the employment rate for women is the following. In Estonia, it is predicted to be 76% by 2020, in Latvia it is expected to be 77% by 2020, in Lithuania it is expected to be 76% by 2020.

Table 4.21

Optimistic scenario outcome: Employment rate for women

Optimistic scenario outcome	2017	2018	2019	2020
Employment rate for women				
Estonia	73%	74%	75%	76%
Latvia	75%	76%	76%	77%
Lithuania	73%	74%	75%	76%

Regarding the pessimistic scenario, the results are the following. The average change between 2007 and 2011 is 2.75% in education, 0.24% in population, 1.41% in GDP per capita. The corresponding recalculated coefficient values are – education -1.64%, population – 0.69%, for GDP per capita 0.19%. It is important to note that in the calculation, the average values were not taken; instead, every separate change (2007 to 2008, 2008 to 2009, 2009 to 2010, 2010 to 2011) was used. The averages are described in order to have an idea of the calculation data.

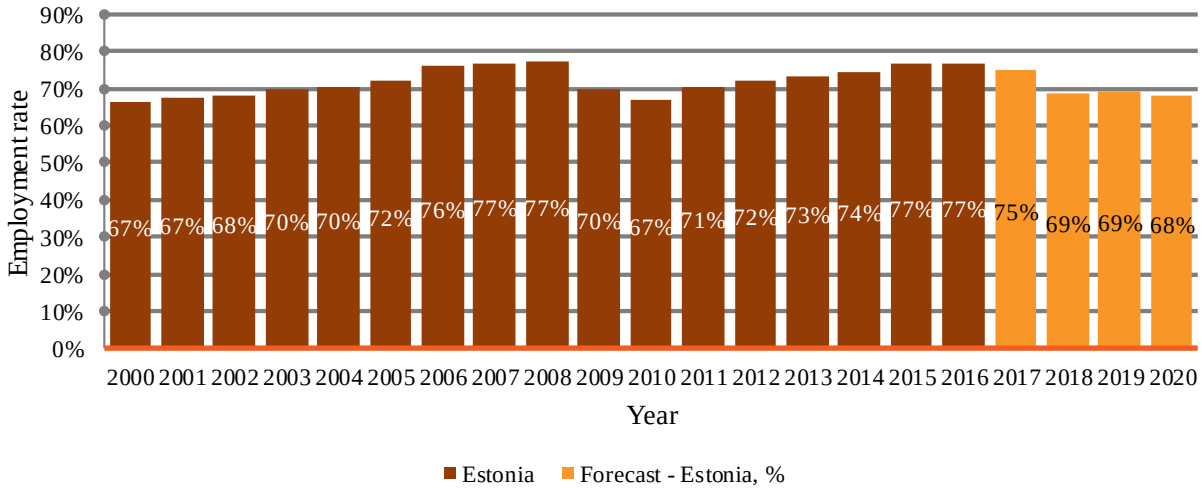

Figure 4.4 **Pessimistic scenario: employment rate in Estonia**
Source: Created by author

Table 4.22

Total employment rate: Estonia

	Average change 2007-2011	Average recalculated coefficient value
Education	2.75%	-1.64%
Population	0.24%	-0.69%
GDP per capita	1.41%	0.19%

For Latvia the average change from 2007 to 2011 in education was 5.76%, in population it was -1.20%, in GDP per capita it was 4.36%. The corresponding average recalculated coefficient values are – education -3.30%, population 0.40%, GDP per capita 1.32%. It is important to note that in the calculation, the average values were not taken; instead, every separate change (2007 to 2008, 2008 to 2009, 2009 to 2010, 2010 to 2011) was taken. The averages are described in order to have an idea of the calculation data.

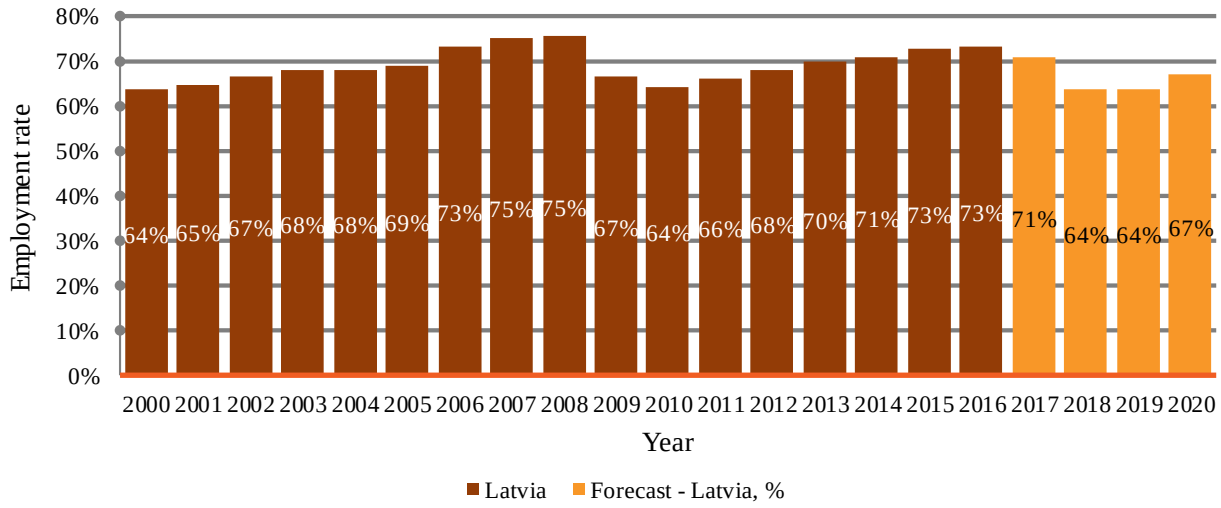

Figure 4.5
Source: Created by author

Table 4.23

Total employment rate: Latvia

	Average change 2007-2011	Average recalculated coefficient value
Education	5.76%	-3.30%
Population	-1.20%	0.40%
GDP per capita	4.36%	1.32%

For Lithuania the average change 2007-2011 in population was -1.39%, in GDP per capita it was -0.01%, in gender pay gap -14.85%. The respective average recalculated coefficient values are – population 2.80%, GDP per capita the average coefficient value is 0.00%, for gender pay gap it is -4.32%. It is important to note that in the calculation, the average values were not taken; instead, every separate change (2007 to 2008, 2008 to 2009, 2009 to 2010, 2010 to 2011) was taken. The averages are described in order to have an idea of the calculation data.

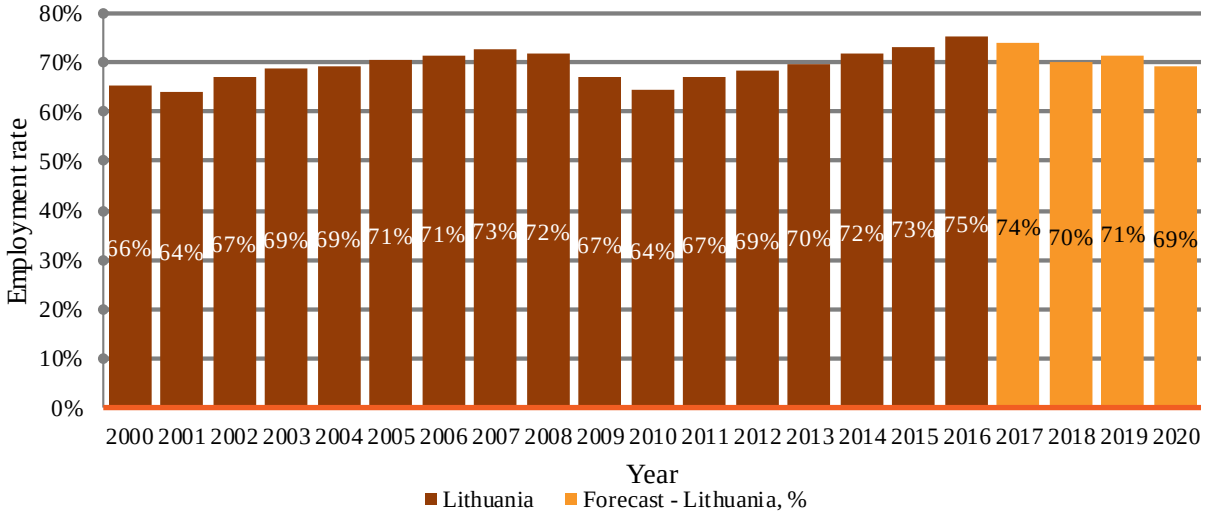

Figure 4.6 **Pessimistic scenario: employment rate in Lithuania**
Source: Created by author

Table 4.24

Total employment rate: Lithuania

	Average change 2007-2011	Average recalculated coefficient value
Population	-1.39%	2.80%
GDP per capita	-0.01%	0.00%
Gender pay gap	-14.85%	-4.32%

The outcomes for the pessimistic scenario regarding total employment rate, considering, the above mentioned, are, for Estonia the expected employment rate in 2020 is 68%, in Latvia 67%, in Lithuania 69%, meaning that none would reach the set target for 2020.

Table 4.25

Pessimistic scenario outcome: Total employment rate

Pessimistic scenario outcome	2017	2018	2019	2020	Target
Total employment rate					
Estonia	75%	69%	69%	68%	76%
Latvia	71%	64%	64%	67%	73%
Lithuania	74%	70%	71%	69%	73%

When looking at the situation by gender, we can see the following. The male employment rate in Estonia, for population the average change 2007 to 2011 is 0.44%, for GDP per capita it is

1.41%, for minimum wage it is 5.21%. With regards to average recalculated coefficient values, the result for population is -2.47%, for GDP per capita it is 0.35%, for minimum wage it is -2.94%. It is important to note that in the calculation, the average values were not taken; instead, every separate change (2007 to 2008, 2008 to 2009, 2009 to 2010, 2010 to 2011) was used. The averages are described in order to have an idea of the calculation data.

Table 4.26

Employment rate for men: Estonia

	Average change 2007-2011	Average recalculated coefficient value
Population	0.44%	-2.47%
GDP per capita	1.41%	0.35%
Minimum wage	5.21%	-2.94%

For Latvia the average change from 2007 to 2011 in education was 4.18%, in GDP per capita 4.36%, in minimum wage 13.76%. The average recalculated coefficient values for education is -1.24%, GDP per capita 1.76%, minimum wage -3.36%. It is important to note that in the calculation, the average values were not taken; instead, every separate change (2007 to 2008, 2008 to 2009, 2009 to 2010, 2010 to 2011) was used. The averages are described in order to have an idea of the calculation data.

Table 4.27

Employment rate for men: Latvia

	Average change 2007-2011	Average recalculated coefficient value
Education	4.18%	-1.24%
GDP per capita	4.36%	1.76%
Minimum wage	13.76%	-3.36%

For Lithuania the average change in education for men 2007 to 2011 is 2.45%, in GDP per capita it is -0.01%, in minimum wage 8.33%. The respective average recalculated coefficient values are 0.35% for education, 0.00% for GDP per capita and -2.94% for minimum wage. It is important to note that in the calculation, the average values were not taken; instead, every separate change (2007 to 2008, 2008 to 2009, 2009 to 2010, 2010 to 2011) was used. The averages are described in order to have an idea of the calculation data.

Table 4.28

Employment rate for men: Lithuania

	Average change 2007-2011	Average recalculated coefficient value
Education	2.45%	0.35%
GDP per capita	-0.01%	0.00%
Minimum wage	8.33%	-2.94%

The outcome for the pessimistic scenario for employment rate for men in Estonia by 2020 is 68%, in Latvia is 63% and in Lithuania is 66%.

Table 4.29

Pessimistic scenario outcome: Employment rate for men

Pessimistic scenario outcome	2017	2018	2019	2020
Employment rate for men				
Estonia	76%	69%	66%	68%
Latvia	70%	60%	60%	63%
Lithuania	68%	61%	61%	66%

For women the situation is slightly different. In Estonia the average change 2007-2011 gender pay gap is -2.90%, in GDP per capita 1.41%, in population 0.05%. The average recalculated coefficient values are -1.04% gender pay gap, -0.24% GDP per capita, -0.14% for population. It is important to note that in the calculation, the average values were not taken; instead, every separate change (2007 to 2008, 2008 to 2009, 2009 to 2010, 2010 to 2011) was used. The averages are described in order to have an idea of the calculation data.

Table 4.30

Employment rate for women: Estonia

	Average change 2007-2011	Average recalculated coefficient value
Gender pay gap	-2.90%	-1.04%
GDP per capita	1.41%	-0.24%
Population	0.05%	-0.14%

For Latvia, the average change in education 2007-2011 is 6.74%, in GDP per capita it is 4.36%, in gender pay gap it is 1.77%. The average recalculated coefficient value for education is -2.06% for GDP per capita it is 1.29%, for gender pay gap it is -0.05%. It is important to note that in the calculation, the average values were not taken; instead, every separate change (2007 to 2008, 2008 to 2009, 2009 to 2010, 2010 to 2011) was taken. The averages are described in order to have an idea of the calculation data.

Table 4.31

Employment rate for women: Latvia

	Average change 2007-2011	Average recalculated coefficient value
Education	6.74%	-2.06%
GDP per capita	4.36%	1.29%
Gender pay gap	1.77%	-0.05%

For Lithuania the average changes in variables from 2007 to 2011 are – in education 4.56%, in GDP per capita -0.01%, in population -1.39%. Regarding the average recalculated coefficients, the values are – for education -1.63%, for GDP per capita 0.00%, for population 1.32. It is important to note that in the calculation, the average values were not taken; instead, every separate change (2007 to 2008, 2008 to 2009, 2009 to 2010, 2010 to 2011) was taken. The averages are described in order to have an idea of the calculation data.

Table 4.32

Employment rate for women: Lithuania

	Average change 2007-2011	Average recalculated coefficient value
Education	4.56%	-1.63%
GDP per capita	-0.01%	0.00%
Population	-1.39%	1.32%

The output for the employment rate for women is the following. The expected employment rate for women by 2020 in Estonia is 67%, in Latvia is 71%, in Lithuania is 71%.

Table 4.33

Pessimistic scenario outcome: Employment rate for women

Pessimistic scenario outcome	2017	2018	2019	2020
Employment rate for women				
Estonia	69%	69%	70%	67%
Latvia	74%	67%	68%	71%
Lithuania	71%	68%	67%	71%

4.3 Result summary: answers to set hypothesis and research questions

Hypothesis summary. The Hypothesis is summarized in the following table. Green colored cells means that the hypothesis is accepted by all equations that had the variable. Red colour means that the hypothesis is rejected by all equations that had the variable. The orange colour depicts those hypothesis, that were accepted by some equations and rejected by others.

Table 4.34

Hypothesis result summary (red – rejected by all; green – accepted by all; orange – partly accepted)

Variable	**Influence on the employment rate**	**Influence on the employment rate (males)**	**Influence on the employment rate (females)**
Education	Positive (rejected EE; LV)	Positive (accepted LT; rejected LV)	Positive (rejected LV; LT)
GDP per capita	Positive (accepted EE; LV; LT)	Positive (accepted EE; LV; LT)	Positive (accepted LV; LT; rejected EE)

Population	Negative (accepted EE;LV;LT)	Negative (accepted EE)	Negative (accepted EE; LT)
Minimum wage		Positive (rejected EE; LV; LT)	
Gender pay gap	Negative (rejected LT)		Negative (accepted LV; rejected EE)

Following this, the summary for research questions is provided below. The research questions of this paper are the following:

1) Will the Europe 2020 national level targets be reached in all three country cases in both scenarios (optimistic/pessimistic)?

The answer to this would be no. The set targets are not only met but are even exceeded in the optimistic scenario; however, in the pessimistic one none of the three countries have managed to reach the employment target.

Table 4.35

Optimistic scenario outcome: Total employment rate

Optimistic scenario outcome	2017	2018	2019	2020	Target
Total employment rate					
Estonia	78%	80%	81%	82%	76%
Latvia	74%	75%	75%	76%	73%
Lithuania	77%	78%	80%	81%	73%

Table 4.36

Pessimistic scenario outcome: Total employment rate

Pessimistic scenario outcome	2017	2018	2019	2020	Target
Total employment rate					
Estonia	75%	69%	69%	68%	76%
Latvia	71%	64%	64%	67%	73%
Lithuania	74%	70%	71%	69%	73%

2) What are the expected employment rates for men and women in the Baltic countries in both scenarios (optimistic/pessimistic)?

The employment rates for men in 2020 are expected to be 86% in Estonia in an optimistic scenario and 68% in a pessimistic scenario; 77% in Latvia in an optimistic scenario and 63% in a pessimistic scenario; 76% in Lithuania in an optimistic scenario and 66% in a pessimistic scenario.

Table 4.37

Employment rate for men 2020

Employment rate for men 2020	Optimistic scenario	Pessimistic scenario
Estonia	86%	68%
Latvia	77%	63%
Lithuania	76%	66%

The employment rates for women in 2020 are expected to be 76% in Estonia in an optimistic scenario and 67% in a pessimistic scenario; 77% in Latvia in an optimistic scenario and 71% in a pessimistic scenario; 76% in Lithuania in an optimistic scenario and 71% in a pessimistic scenario.

Table 4.38

Employment rate for women 2020

Employment rate for women 2020	Optimistic scenario	Pessimistic scenario
Estonia	76%	67%
Latvia	77%	71%
Lithuania	76%	71%

5. LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

The purpose of this study was to provide a model that would mathematically show how different variables can have different effects on the employment rate and thus, depict in two scenarios whether the Europe 2020 employment target for the Baltic countries would be met. Although this research provides insights into the relationship between different factors (such as, education, GDP per capita, population, minimum wage and gender pay gap) and the employment rate in the Baltics, it is solely tested for the Baltic states and thus may lack generalizability with regards to other countries' employment rates and influential factors.

The reasons for limiting the variables and countries are as follows. First, the Baltic countries are neighboring countries with similar histories, which would allow the outcomes to be fairly comparable one to another. One of the main objectives of this study is to suggest a mathematical method for calculating the expected employment rate, whilst depicting how each variable has an effect on it. The literature suggests many variables have an effect on the employment rate, some of which are difficult to measure, like, the impact of a new fund activity or any social activity for that matter. This study not only limited the choice of selected variables but also applied different variables to different regressions. This was done in order to reach the most reliable result, considering the regression's P-values and R-squares. It is suggested to undertake a more thorough research study which would not only include a regression for the employment rate but would also include separate regressions for all of the independent variables in order to have a deeper understanding of the fundamental drivers. Also, it is suggested to consider different research methods, perhaps the introduction of an instrumental variable would make the study more reliable. In this thesis the instrumental variable introduction was considered but was not chosen as it had little impact on the result.

Another limitation to mention is the data. The study would definitely become more precise if more observations were available. This study applied as many reliable observations as it could, however, with time, more data will be available and this could possibly change the results. What is more, a rule of thumb in statistics is to have at least 5 to 10 observations per predictor[212] and whilst for some of the regression this is fulfilled (having three independent

[212] Kleinbaum, David G.; Kupper, Lawrence L.; Nizam, Azhar; Rosenberg, Eli S. (2013, August 30). *Applied Regression Analysis and Other Multivariable Methods*. Boston: Cengage Learning. Retrieved April 22, 2017, from

variables and 16 observations, for others it was not – having three independent variables and 10 observations), which is why more data would improve the results of this study.

The research could also be expanded to the whole EU in order to test the primary target that was set for the employment rate across the whole EU. With that data, it would be necessary to control for both time and country specific factors, which would make this model more difficult, but the findings would be very instructive for policy matters.

What is more, the research had several assumptions that a further study may consider changing, such as, calculating average increases/decreases in variables not only from 2010, but perhaps from the whole data set (in this case it would be 2000). This research, however, did not do so as, firstly, at that time none of the three countries were part of the EU; and second, the author did consider this measure and found that there were no major differences between the two, using either would have shown that the targets for all three countries would be met and exceeded in the optimistic scenario.

https://books.google.lv/books?id=v590AgAAQBAJ&printsec=frontcover#v=onepage&q=10%20observations&f=false

CONCLUSIONS

The basis of any economy is employment, through employment and wages countries generate their income/budget, as people pay taxes and consume different types of goods in the market. Of course, a country may also borrow money in order to expand its budget; however, any borrowing comes at a price, which is why it is important to have a high employment rate, so that people can put some money into the economy. Through the budget, the government leads the country to develop and prosper, the budget is an integral part of a countries economy, through it people can have health care benefits, schools, clean parks with playgrounds, prisons, and many other things.

All three of the Baltic countries – Latvia, Lithuania and Estonia became a part of the EU in 2004. Since then all have carefully and religiously applied the EU's mandates, from the rule of law, to external relationships, etc. Being part of the EU meant that when in 2010 when the Europe 2020 targets were approved, each of the three countries also received national employment rate targets to be fulfilled by 2020. For Estonia the employment target is 76%, for Latvia it is 73% and for Lithuania it is 72.8%.

This research provides a description of all the Baltic countries with regards to the employment rate and factors that may influence it. The description of Europe 2020 and its targets are provided as well as some background on the European Social Fund and some of the activities that are being carried out through it with regards to the improvement of employment and employability. A description of Latvia depicts that GDP, minimum wage before taxes, monthly gross wages (for both men and women) and total employment rate are all either at the level of where they were when the crisis hit in 2008 or have even exceeded the level they achieved at that time. With regards to Lithuania, GDP at current prices, gross minimum wage and total employment rate are all above their 2008 level. In Estonia GDP at current prices, gross minimum wage, average monthly gross wages and employment rate are also above their 2008 figures. All three countries showed a declining trend in education enrolments and all depicted an aging population problem, despite the fact that the population as a whole is shrinking.

Following this, the literature review is presented, describing all independent variables used (education, GDP per capita, population, minimum wage and gender pay gap) and the dependent variable (employment rate) for which, there is also a list provided of suggestions for improvements drawn based on the literature. Based on this there is also a hypothesis made for

each variable and its impact on the employment rate (whether it be positive or negative). Some of the hypotheses are accepted for all countries, such as, the impact from GDP per capita is positive, or that the population increase has a negative effect on the total employment rate. Others have been rejected, for instance education which was expected to have a positive effect on total employment rate was rejected for Estonia and Latvia and the gender pay gap, which was expected to have a negative effect on the total employment rate, was rejected by Lithuania. There were also individual hypotheses set out for employment rates for men and women, where the acceptance and rejection of the hypothesis was similar.

The author provides for two scenarios for the employment rate to follow, an optimistic one and a pessimistic one. The optimistic scenario essentially follows the average increase/decrease rate in independent variables that has been occurring since 2010, which is when the targets were approved for Europe 2020. The pessimistic scenario on the other hand considers the previously mentioned variable as a threat. Meaning, the pessimistic scenario considers another crisis and treats 2017, 2018, 2019, 2020 growth rates as they were for each variable from 2007 to 2008, 2008 to 2009, 2009 to 2010, 2010 to 2011 respectively. The model assumes no changes in reforms, but it is important to note that first, the impact of reforms that took place this year or years before will be felt this year and the following years and that even if a new reform or structural fund was introduced, it is unlikely to have a strong effect in the 3 years. Meaning, there is a sizable lag related to new reform and fund introduction.

Further, through a two stage methodology, two research questions were answered. First, will the Europe 2020 national level targets be reached in all three country cases in both scenarios (optimistic/pessimistic)? And second, what are the expected employment rates for men and women in the Baltic countries in both scenarios (optimistic/pessimistic)? With regards to the first research question the study shows that the target would be not only met in an optimistic scenario, but that all three countries would exceed their set employment rate targets by 2020. The pessimistic scenario, on the other hand, did not give the same results, it showed that the employment rates would be 68% in Estonia (target – 76%), 67% in Latvia (target – 73%), 69% in Lithuania (target – 72.8%). Meaning that none of the three countries would meet their employment rate targets if another crisis would happen in the coming years. As for the second research question, the employment rates for men in 2020 are expected to be 86% in Estonia in an optimistic scenario and 68% in a pessimistic scenario; 77% in Latvia in an optimistic scenario and 63% in a pessimistic scenario; 76% in Lithuania in an optimistic scenario and 66% in a

pessimistic scenario and the employment rates for women in 2020 are expected to be 76% in Estonia in an optimistic scenario and 67% in a pessimistic scenario; 77% in Latvia in an optimistic scenario and 71% in a pessimistic scenario; 76% in Lithuania in an optimistic scenario and 71% in a pessimistic scenario.

RECOMMENDATIONS

Recommendations focused on the European level:

1. It is suggested to set also gender employment rate targets. This would foster integration of women into the labour force.
2. Introduce a system that checks for fund usage and what benefits have they actually brought. Meaning a system of measurements should be introduced for every fund system. Through this, it would be possible to see, which funds need to be improved and perhaps, which are not generating as much as they are taking.
3. The EU should strongly consider what would happen if most of the people, who went to the UK for work opportunities came back due to Brexit. The funds should start addressing this issue.
4. As quantitative easing is ending, the employment rate will be more important than ever, extensive researches should be previously done in order to come up with a systematic plan for and affect to the employment rate.

Recommendations focused on the national level:

1. There should be more studies on data reliability, as it is important to have the best possible inputs in order to have the most reliable output. For instance, the employment rate should be viewed as a dubious measurement, as it includes people who are officially/legally employed and not those who are paid in an "envelope" (cash payments in order to avoid tax liabilities).
2. The countries should consider different ways of increasing the employment rate in the Baltic countries, for instance:
    a. by restricting publicly-funded early retirements;
    b. empowering occupational segmentation, such as, make kindergartens and schools more female friendly;
    c. have structural reforms in the labour market;
    d. increase part-time job opportunities, so that people can combine studies with work or nursing and work;
    e. decrease the tax burden on people on the minimum wage.

3. The countries could also consider having equal pay for equal work in the Baltics, so that the people do not leave for neighboring countries simply because there they would get paid more for the same job.
4. Consider introducing wage increase for employees who are 50 or older in order for them to have more savings for their retirement.
5. There is need to further exploit benefits from the funds provided by the EU. Also, the fund distribution should be more tailor-made for each country, as there exists areas for continued development, meaning that perhaps it is not the job seeking assistance that is needed, rather trainings and education systems could be adjusted.

BIBLIOGRAPHY

Ambrozaitienė, D., & Bankietienė, V. (2016, May 3). *Evaluation of the gender pay gap in Lithuania*. Economic Commission for Europe. Retrieved March 31, 2017, from https://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/ge.30/2016/WS/WP10_Lithuania_Ambrozaitiene.pdf

Angeles, L. (2008). GDP per capita or Real Wages? Making sense of. *Explorations in Economic History, 45*(2), 147-163. doi:10.1016/j.eeh.2007.09.002

Antràs, P. (2003, May). *Firms, Contracts, and Trade Structure*. Retrieved April 2, 2017, from http://www.nber.org/papers/w9740.pdf

Bakker, B. B. (2015, October). *Employment and the Great Recession: The Role of Real Wages*. Retrieved April 4, 2017, from https://www.imf.org/external/pubs/ft/wp/2015/wp15229.pdf

Baltic New Network. (2013, March). Latvia's gender pay gap is smaller than average in EU. Retrieved April 7, 2017, from http://bnn-news.com/latvias-gender-pay-gap-smaller-average-eu-90247

Baltic Yearbook of International Law (Vol. 3). (2003). Brill - Nijhoff.

Banerji, A., Saksonovs, S., Lin, H., & Blavy, R. (2014, December). *Youth Unemployment in Advanced Economies in Europe: Searching for Solutions*. International Monetary Fund. Retrieved March 27, 2017, from https://www.imf.org/external/pubs/ft/sdn/2014/sdn1411.pdf

Beerkens, M., Magi, E., & Lill, L. (2010, July 28). University studies as a side job: causes and consequences. *Higher Education, 61*(6), 679-692. doi:10.1007/s10734-010-9356-0

Bildt, C. (2016, February 24). Europe in 2026: nightmare or utopia? World Economic Forum. Retrieved April 3, 2017, from https://www.weforum.org/agenda/2016/02/two-scenarios-for-europe-in-2026/

Bitāns, M., & Purviņš, V. (2012). *The Development of Latvia's Economy (1990–2004)*. Riga: Latvijas Banka. Retrieved April 7, 2017, from https://www.bank.lv/images/stories/pielikumi/publikacijas/citaspublikacijas/Bitans_Purvins_EN.pdf

Blaziene, I. (2015, September 4). Lithuania: Unions protest at new draft social model law. Eurofound. Retrieved April 1, 2017, from

https://www.eurofound.europa.eu/observatories/eurwork/articles/industrial-relations-law-and-regulation/lithuania-unions-protest-at-new-draft-social-model-law

Bloomberg. (2017, April 17). Carson Block Says There's a Real Chance U.S. Will Default. Retrieved April 6, 2017, from https://www.bloomberg.com/news/videos/2017-04-17/carson-block-real-chance-u-s-will-default-video

Bloomberg. (2017, March 30). Tony Robbins Says Don't Fear a Stock Market Crash. Retrieved March 30, 2017, from https://www.bloomberg.com/news/videos/2017-03-30/tony-robbins-says-don-t-fear-a-stock-market-crash-video?cmpid=socialflow-facebook-business&utm_content=business&utm_campaign=socialflow-organic&utm_source=facebook&utm_medium=social

Bocean, C. G. (2015). Relationships Between Wages And Employment Indicators. *Revista Tinerior Economisti (The Young Economists Journal), 1*(24), 41-50.

Bonfiglio, A., Delfino, F., Invernizzi, M., & Procopio, R. (2017). A Methodological Approach to Assess the Impact of Smarting Action on Electricity Transmission and Distribution Networks Related to Europe 2020 Targets. *Energies, 10*(2), 1-17. doi:10.3390/en10020155

Bos, F., & Teulings, C. (2013, December 23). Short- and long-term forecasting by the Netherlands Bureau for Economic Policy Analysis (CPB). *OECD Journal on Budgeting, 13*(1), 45-56. doi:10.1787/budget-13-5k409g58z133

Boulhol, H. (2009). *The Effects of Population Structure on Employment and Productivity*. Paris: OECD Publishing. doi:10.1787/225644583654

Bruno, A. (2017, March 22). "Economic Crash 2017" and How Next Financial Crisis Could Be Worse than 2008. Lombardi Letter. Retrieved April 4, 2017, from https://www.lombardiletter.com/economic-crash-2017-and-how-the-next-financial-crisis-could-be-worse-than-2008/6973/

Carter, R. (2016). A Multiple Regression Analysis Fiscal Strategies and Unemployment Rates. *Insights to a Changing World Journal, 2016*(4), 95-142.

Carter, R. (2016). A Multiple Regression Analysis Fiscal Strategies and Unemployment Rates. *Insights To A Changing World Journal*(4), 95-142. Retrieved April 5, 2017

Central Intelligence Agency. (2017). *The World Factbook: Age Structure*. Retrieved April 4, 2017, from https://www.cia.gov/library/publications/the-world-factbook/fields/2010.html

Central Statistical Bureau of Latvia (CSB). (2016). *Demography 2016*. Retrieved April 4, 2017, from http://www.csb.gov.lv/sites/default/files/nr_11_demografija_2016_16_00_lv_en.pdf

Central Statistical Bureau of Latvia (CSB). (2016, August 8). Population by sex and age at the beginning of year, code [ISG06]. Retrieved April 4, 2017, from http://data.csb.gov.lv/pxweb/en/Sociala/Sociala__ikgad__iedz__iedzskaits/IS0060.px/?rxid=a79839fe-11ba-4ecd-8cc3-4035692c5fc8

Central Statistical Bureau of Latvia (CSB). (2016, June). Population by sex and age at the beginning of year, code [ISG06]. Retrieved March 28, 2017, from http://data.csb.gov.lv/pxweb/lv/Sociala/Sociala__ikgad__iedz__iedzskaits/IS0060.px/?rxid=cd

Central Statistical Bureau of Latvia (CSB). (2017, February 21). Activity rate, employment rate and unemployment rate (%), code [NBG02]. Retrieved April 1, 2017, from http://data.csb.gov.lv/pxweb/en/Sociala/Sociala__ikgad__nodarb/NB0020.px/?rxid=562c2205-ba57-4130-b63a-6991f49ab6fe

Central Statistical Bureau of Latvia (CSB). (2017, March 24). Gross domestic product, code [IKG10_01]. Retrieved April 1, 2017, from http://data.csb.gov.lv/pxweb/en/ekfin/ekfin__ikgad__ikp/IK10_0010.px/?rxid=cdcb978c-22b0-416a-aacc-aa650d3e2ce0

Central Statistical Bureau of Latvia (CSB). (2017). Gross domestic product, code [IKG10_01]. Retrieved March 30, 2017, from http://data.csb.gov.lv/pxweb/en/ekfin/ekfin__ikgad__ikp/IK10_0010.px/table/tableViewLayout2/?rxid=cdcb978c-22b0-416a-aacc-aa650d3e2ce0

Central Statistical Bureau of Latvia (CSB). (2017, February 27). Monthly gross wages and salaries by sex and kind of activity (in 1st quarter; in euro), code [DSG04]. Retrieved April 3, 2017, from http://data.csb.gov.lv/pxweb/lv/Sociala/Sociala__ikgad__dsamaksa/DS0040_euro.px/?rxid=562c2205-ba57-4130-b63a-6991f49ab6fe

Cooper, R., & John, A. A. (2017). Microeconomics: Theory Through Applications. Retrieved April 3, 2017, from http://catalog.flatworldknowledge.com/bookhub/reader/2992?e=coopermicro-ch17_s03#coopermicro-ch17_s03_f01

CountryEconomy.com. (2017). *The national minimum wage in Lithuania remained fixed*. Retrieved April 1, 2017, from http://countryeconomy.com/national-minimum-wage/lithuania

D'Agostino, A., Serafini, R., & Ward-Warmedinger, M. (2006, May). *Sectoral Explanations on Employment in Europe: The Role of Services*. Frankfurt: European Central Bank. Retrieved March 27, 2017, from https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp625.pdf?fd7ce5592d16df1774203cb46ad6d729

Denman, C., & Al-Mahrooqi, R. (2016). *Bridging Gap between Education and Employment: English Language Instruction in EFL Contexts*. Bruxelles: Peter Lang.

Descy, P. (2014). *Projected labour market imbalances in Europe: Policy challenges in meeting the Europe 2020 employment targets*. Paris: OECD Publishing. doi:10.1787/9789264216501-12-en

Di Stasio, V., & van de Werfhorst, H. G. (2016, August 11). Why Does Education Matter to Employers in Different Institutional Contexts?: A Vignette Study in England and the Netherlands. *95*(1), 77-106. doi:10.1093/sf/sow027

Dumičić, K., Bucevska, V., & Resic, E. (2015). Recent Impacts of Selected Development Indicators on Unemployment Rate: Focusing the SEE Countries. *Interdisciplinary Description of Complex Systems : INDECS*, *13*(3), 420-433. doi:10.7906/indecs.13.3.7

Ebeke, C., & Everaert, G. (2014, August). *Unemployment and Structural Unemployment in the Baltics*. International Monetary Fund. Retrieved March 31, 2017, from https://www.imf.org/external/pubs/ft/wp/2014/wp14153.pdf

Eiropas Komisija. (2015). *ESF Latvijā*. Retrieved April 4, 2017, from http://ec.europa.eu/esf/main.jsp?catId=389&langId=lv

Eiropas Komisija. (2015, November 26). *Komisijas un padomes vienotā nodarbinātības ziņojuma projekts, kas pievienots Komisijas paziņojumam par 2016. gada izaugsmes pētījumu.* Retrieved April 7, 2017, from http://ec.europa.eu/europe2020/pdf/2016/ags2016_draft_joint_employment_report_lv.pdf

Eiropas Savienības Padome. (2016, December). *Garantija jauniešiem*. Retrieved April 6, 2017, from http://www.consilium.europa.eu/lv/policies/youth-employment/youth-guarantee/

European Central Bank. (2016). The employment-GDP relationship since the crisis. *ECB Economic Bulletin*(6), 53-71. Retrieved April 1, 2017, from https://www.ecb.europa.eu/pub/pdf/other/eb201606_article01.en.pdf

European Centre for the Development of Vocational Training. (2017). Employment trends: 2016 Skills forecast. Retrieved April 1, 2017, from

http://www.cedefop.europa.eu/en/publications-and-resources/data-visualisations/employment-trends

European Commission. (2007). The 2004 enlargement: the challenge of a 25-member EU. Retrieved April 5, 2017, from http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3Ae50017

European Commission. (2010, November 23). An Agenda for new skills and jobs: A European contribution towards full employment. Retrieved March 29, 2017, from http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0682:FIN:EN:PDF

European Commission. (2010, November 26). *An Agenda for new skills and jobs: A European contribution towards full employment*. Retrieved April 1, 2017, from http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52010DC0682R(01)&from=EN

European Commission. (2010). *Europe 2020: A strategy for smart, sustainable and inclusive growth*. Retrieved April 1, 2017, from http://ec.europa.eu/eu2020/pdf/COMPLET%20EN%20BARROSO%20%20%20007%20-%20Europe%202020%20-%20EN%20version.pdf

European Commission. (2011). *Europe 2020 targets*. Retrieved March 30, 2017, from http://ec.europa.eu/europe2020/targets/eu-targets/index_en.htm

European Commission. (2012, April 18). Communication From the Commission to The European Parliament, The Council, The European Economic And Social Committee And The Committee of the Regions Towards a Job-Rich Recovery. Retrieved March 31, 2017, from http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52012DC0173

European Commission. (2012). Estonia and the European Social Fund. Retrieved March 30, 2017, from ec.europa.eu/esf/BlobServlet?docId=94&langId=en

European Commission. (2012). Lithuania and the European Social Fund. Retrieved March 30, 2017, from ec.europa.eu/esf/BlobServlet?docId=103&langId=en

European Commission. (2012). *The current situation of gender equality in Lithuania – Country Profile*. Retrieved April 3, 2017, from http://ec.europa.eu/justice/gender-equality/files/epo_campaign/130911_country-profile_lithuania.pdf

European Commission. (2012). The situation in the EU. Retrieved March 29, 2017, from http://ec.europa.eu/justice/gender-equality/gender-pay-gap/situation-europe/index_en.htm

European Commission. (2013, March 5). Boosting Business. Retrieved April 1, 2017, from http://ec.europa.eu/esf/main.jsp?catId=457&langId=en

European Commission. (2013). *Caring for Careers*. Retrieved March 31, 2017, from http://ec.europa.eu/esf/main.jsp?catId=535&langId=en

European Commission. (2013). *Economic and Social Situation in The Baltic States: Estonia*. doi:10.2864/27303

European Commission. (2013). *Fighting Marginalisation*. Retrieved April 6, 2017, from http://ec.europa.eu/esf/main.jsp?catId=63&langId=ne

European Commission. (2013). *More Effective Institutions*. Retrieved March 29, 2017, from http://ec.europa.eu/esf/main.jsp?catId=526&langId=en

European Commission. (2013). *Opening Doors to Learning*. Retrieved April 6, 2017, from http://ec.europa.eu/esf/main.jsp?catId=528&langId=en

European Commission. (2013). *Opening Pathways to Work*. Retrieved April 5, 2017, from http://ec.europa.eu/esf/main.jsp?catId=533&langId=en

European Commission. (2013, June 25). Partnership for Progress. Retrieved April 1, 2017, from http://ec.europa.eu/esf/main.jsp?catId=527&langId=en

European Commission. (2013). *Tackling the gender pay gap in the European Union.* Luxembourg: Publications Office of the European Union. doi:10.2838/22962

European Commission. (2014). Overview of Europe 2020 Targets. Retrieved April 1, 2017, from http://ec.europa.eu/europe2020/pdf/targets_en.pdf

European Commission. (2014). *Taking stock of the Europe 2020 strategy for smart, sustainable and inclusive growth*. Retrieved March 31, 2017, from http://ec.europa.eu/europe2020/pdf/europe2020stocktaking_en.pdf

European Commission. (2014). The gender pay gap in Lithuania. Retrieved April 3, 2017, from http://ec.europa.eu/justice/gender-equality/files/gender_pay_gap/2016/gpg_country_factsheet_lt_2016_en.pdf

European Commission. (2015). *Creating Chances for Youth*. Retrieved April 2, 2017, from http://ec.europa.eu/esf/main.jsp?catId=534&langId=ne

European Commission. (2015). Education and Training Monitor 2015 Estonia. Publications Office of the European Union. Retrieved April 5, 2017, from http://ec.europa.eu/dgs/education_culture/repository/education/tools/docs/2015/monitor2015-estonia_en.pdf

European Commission. (2015, December). *Employment and Social Developments in Europe 2015*. Luxembourg: Publications Office of the European Union. Retrieved April 7, 2017, from http://ec.europa.eu/social/BlobServlet?docId=14951&langId=en

European Commission. (2015, December). *Employment and Social Developments in Europe 2015*. Retrieved April 4, 2017, from http://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=7859&furtherPubs=yes

European Commission. (2015). *EU Exports to the World: Effects on Employment and Income.* Retrieved March 28, 2017, from http://trade.ec.europa.eu/doclib/docs/2015/june/tradoc_153502.pdf

European Commission. (2015, February 4). Juncker Commission makes 1 billion euro available for the young unemployed. Retrieved April 7, 2017, from http://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=2173&furtherNews=yes

European Commission. (2015). *The ESF in Estonia*. Retrieved April 1, 2017, from http://ec.europa.eu/esf/main.jsp?catId=377

European Commission. (2015). *Youth on the Move*. Retrieved March 29, 2017, from http://ec.europa.eu/youthonthemove/

European Commission. (2016, November 16). Annual Growth Survey 2017. Brussels. Retrieved May 4, 2017, from https://ec.europa.eu/info/sites/info/files/2017-european-semester-annual-growth-survey_en_0.pdf

European Commission. (2016). *Europe 2020 in a nutshell*. Retrieved March 29, 2017, from http://ec.europa.eu/europe2020/europe-2020-in-a-nutshell/index_en.htm

European Commission. (2016). *European Neighbourhood Policy And Enlargement Negotiations - Conditions for membership*. Retrieved March 27, 2017, from https://ec.europa.eu/neighbourhood-enlargement/policy/conditions-membership_en

European Commission. (2016, December 7). *The Youth Guarantee country by country - Estonia*. Retrieved April 5, 2017, from http://ec.europa.eu/social/main.jsp?catId=1161&langId=en&intPageId=3331

European Commission. (2016, December 7). *The Youth Guarantee country by country - Latvia*. Retrieved April 5, 2017, from http://ec.europa.eu/social/main.jsp?catId=1161&langId=en&intPageId=3341

European Commission. (2016, December 7). *The Youth Guarantee country by country - Lithuania*. Retrieved April 5, 2017, from http://ec.europa.eu/social/main.jsp?catId=1161&langId=en&intPageId=3342

European Commission. (2016). *What is the ESF?* Retrieved March 30, 2017, from http://ec.europa.eu/esf/main.jsp?catId=35&langId=en

European Commission. (2017). *EU Countries and the euro*. Retrieved March 29, 2017, from https://ec.europa.eu/info/business-economy-euro/euro-area/euro/eu-countries-and-euro_en

European Commission. (2017). *EU member countries in brief: Estonia*. Retrieved March 27, 2017, from http://europa.eu/european-union/about-eu/countries/member-countries/estonia_en

European Commission. (2017). *European platform against poverty and social exclusion*. Retrieved March 29, 2017, from http://ec.europa.eu/social/main.jsp?catId=961

European Commission. (2017). European structural and investment funds. Retrieved April 4, 2017, from https://ec.europa.eu/info/funding-tenders/european-structural-and-investment-funds_en#thefunds

European Commission. (2017, May 4). *Growth and Employment: Latvia*. Retrieved May 4, 2017, from http://ec.europa.eu/regional_policy/EN/atlas/programmes/2014-2020/latvia/2014lv16maop001

European Commission. (2017). *Innovation Union*. Retrieved March 29, 2017, from http://ec.europa.eu/research/innovation-union/index_en.cfm?pg=home

European Commission. (2017). *Money and the EU: The euro*. Retrieved March 28, 2017, from https://europa.eu/european-union/about-eu/money/euro_en#euro

European Commission. (2017, May 4). *Operational Programme for Cohesion Policy Funding 2014-2020: Estonia*. Retrieved May 4, 2017, from http://ec.europa.eu/regional_policy/EN/atlas/programmes/2014-2020/estonia/2014ee16m3op001

European Commission. (2017, May 4). *Operational Programme for EU Structural Funds Investments for 2014-2020: Lithuania*. Retrieved May 4, 2017, from http://ec.europa.eu/regional_policy/EN/atlas/programmes/2014-2020/lithuania/2014lt16maop001

European Commission. (2017). *Priorities*. Retrieved March 29, 2017, from https://ec.europa.eu/commission/priorities_en

European Commission. (2017). Social Dimension of Europe. Bruxelles. Retrieved April 4, 2017, from https://ec.europa.eu/commission/sites/beta-political/files/reflection-paper-social-dimension-europe_en.pdf

European Commission. (2017). *The history of the European Union: Further expansion*. Retrieved April 7, 2017, from https://europa.eu/european-union/about-eu/history/2000-2009_en

European Commission. (2017, January 12). *Youth Guarantee*. Retrieved April 5, 2017, from http://ec.europa.eu/social/main.jsp?catId=1079&langId=en

European Commission and Eurostat online database. (2016, April 3). Employment rate by sex, age group 20-64, code [t2020_10]. Retrieved April 5, 2017, from http://ec.europa.eu/eurostat/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=t2020_10&language=en

European Commission and Eurostat online database. (2016, April 3). Gender pay gap in unadjusted form, code [tsdsc340]. Retrieved April 5, 2017, from http://ec.europa.eu/eurostat/tgm/table.do?tab=table&plugin=1&language=en&pcode=tsdsc340

European Commission and Eurostat online database. (2016, April 3). Minimum wages, code [tps00155]. Retrieved March 30, 2017, from http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00155

European Commission and Eurostat online database. (2017, April 28). "Pupils enrolled in lower-secondary education by programme orientation, sex, type of institution and intensity of participation, code [educ_uoe_enrs01]. Retrieved May 3, 2017, from http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ_uoe_enrs01&lang=en

European Commission and Eurostat online database. (2017, April 24). Employment and activity by sex and age - annual data, code [lfsi_emp_a]. Retrieved April 4, 2017, from http://appsso.eurostat.ec.europa.eu/nui/show.do?query=BOOKMARK_DS-053312_QID_58DAC86_UID_-3F171EB0&layout=SEX,L,X,0;GEO,L,Y,0;AGE,L,Z,0;UNIT,L,Z,1;TIME,C,Z,2;INDIC_EM,L,Z,3;INDICATORS,C,Z,4;&zSelection=DS-053312INDIC_EM,EMP_LFS;DS-053312AGE,Y20-64;DS-0533

European Commission and Eurostat online database. (2017, February 6). Monthly minimum wages - bi-annual data, code [earn_mw_cur]. Retrieved March 29, 2017, from http://ec.europa.eu/eurostat/en/web/products-datasets/-/EARN_MW_CUR

European Commission and Eurostat online database. (2017, April). Students enrolled in tertiary education by education level, programme orientation, sex, type of institution and intensity of participation, code [educ_uoe_enrt01]. Retrieved May 3, 2017, from http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ_uoe_enrt01&lang=en

European Committee of the Regions. (2013). *The EU's Assembly of Regional and Local Representatives: An agenda for new skills and jobs*. Retrieved April 5, 2017, from http://cor.europa.eu/en/policies/growth-and-jobs/Pages/agenda-new-skills-jobs.aspx

European Committee of the Regions. (2014). An integrated industrial policy for the globalisation era. Retrieved April 7, 2017, from http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV%3Aet0005

European Committee of the Regions. (2017). *Digital Single Market: Europe 2020 strategy*. Retrieved April 4, 2017, from https://ec.europa.eu/digital-single-market/en/europe-2020-strategy

European Committee of the Regions. (2017). *Environment: Resource Efficiency*. Retrieved April 5, 2017, from http://ec.europa.eu/environment/resource_efficiency/index_en.htm

European Economic and Social Committee. (2013). *Economic and Social Situation in The Baltic States: Latvia*. doi:10.2864/27766

European Stability Mechanism. (2017). *How We Work*. Retrieved April 3, 2017, from https://www.esm.europa.eu/about-us/how-we-work

European Trade Union Confederation. (2006, July). The European Social Model. Retrieved April 6, 2017, from https://www.etuc.org/european-social-model

Eurostat. (2010). *Statistics explained: Glossary:Unemployment*. Retrieved April 4, 2017, from http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Unemployment

Eurostat. (2014). *Statistics explained: Glossary:Employment rate*. Retrieved April 5, 2017, from http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Employment_rate

Eurostat. (2015, June 5). Statistics explained: Quality of life in Europe - facts and views - employment. Retrieved April 5, 2017, from http://ec.europa.eu/eurostat/statistics-explained/index.php/Quality_of_life_in_Europe_-_facts_and_views_-_employment

Eurostat. (2016). *Smarter, greener, more inclusive — indicators to support the Europe 2020 strategy*. doi:10.2785/101636

Eurostat. (2017, January 31). *Statistics explained: Employment statistics*. Retrieved March 29, 2017, from http://ec.europa.eu/eurostat/statistics-explained/index.php/Employment_statistics

Fabbris, L., & Martini, M. C. (2017, January). Beyond Employment Rate: A Multidimensional Indicator of Higher Education Effectiveness. *Social Indicators Research, 130*(1), 351-370. doi:10.1007/s11205-015-1179-z

Fic, T., & Saqib, O. F. (2006, December). Political Instability and the August 1998 Ruble Crisis. *Journal of Economic Integration, 21*(4), pp. 764-783. Retrieved March 30, 2017, from http://www.jstor.org/stable/23001136

Fischer, Reinis. (2015, December 23). Minimum Wage Set to Rise in All Baltic States in 2016. Retrieved April 2, 2017, from https://www.reinisfischer.com/minimum-wage-set-rise-all-baltic-states-2016

Geis, W., & Orth, A. (2016). *How are refugees faring on the labour market in Europe?* Luxembourg: Publications Office of the European Union. doi:10.2767/350756

Giles, C. (2017, April 7). What is happening to the British economy? Financial Times. Retrieved March 29, 2017, from https://www.ft.com/content/b00a2334-1b7b-11e7-bcac-6d03d067f81f

Graeme, W. (2016, December 8). Markets soar as ECB extends QE programme until December 2017 – as it happened. The Guardian. Retrieved April 4, 2017, from https://www.theguardian.com/business/live/2016/dec/08/ecb-stimulus-qe-draghi-italy-bank-rescue-business-live

Hanson, H., & Pierson, A. (2016). *Alaska students' pathways from.* Retrieved April 2, 2017, from http://files.eric.ed.gov/fulltext/ED565628.pdf

Hobza, A., & Mourre, G. (2010, September). Macroeconomic effects of Europe 2020: stylised scenarios. *ECFIN Economic Brief, 11*. doi:10.2765/58542

Hull, K. (2009). *Understanding the relationship between economic growth, employment and poverty reduction.* Paris: OECD Publishing. Retrieved April 6, 2017, from https://www.oecd.org/dac/povertyreduction/43280288.pdf

Immervoll, H. (2007). *Minimum Wages, Minimum Labour Costs and the Tax Treatment of Low-Wage Employment.* Paris: OECD Publishing. doi:10.1787/337686556262

Inman, P. (2017, February 25). The Bank of England fears it may not spot the next crisis. Here's where to look. The Guardian. Retrieved April 1, 2017, from https://www.theguardian.com/business/2017/feb/25/bank-of-england-fears-may-not-spot-next-crisis-five-places-to-look

Jobs for the Future. (2015, July). Supporting Second Chances: Education and Employment Strategies For People Returning from Correctional Facilities. Retrieved April 1, 2017, from http://files.eric.ed.gov/fulltext/ED560782.pdf

Kambayashi, R., & Kato, T. (2016, June 20). Long-Term Employment and Job Security over the Past 25 Years: A Comparative Study of Japan and the United States. *SAGE journals, 70*(2), 359-394. doi:10.1177/0019793916653956

Kay, A. (2017, March 8). Think you're not sexist? Here's why you might be wrong. World Economic Forum. Retrieved March 29, 2017, from https://www.weforum.org/agenda/2017/03/sexism-gender-bias-women-equality-employment?utm_content=buffer04cbf&utm_medium=social&utm_source=facebook.com&utm_campaign=buffer

Kimino, S., Saal, D. S., & Driffield, N. (2007). Macro Determinants of FDI Inflows to Japan: An Analysis of Source Country Characteristics. *The World Economy, 30*(3), 446-469. doi:10.1111/j.1467-9701.2007.01001.x

Kleinbaum, David G.; Kupper, Lawrence L.; Nizam, Azhar ; Rosenberg, Eli S. (2013, August 30). *Applied Regression Analysis and Other Multivariable Methods*. Boston: Cengage Learning. Retrieved April 22, 2017, from https://books.google.lv/books?id=v590AgAAQBAJ&printsec=frontcover#v=onepage&q=10%20observations&f=false

Klesment, M. (2009, June). The Estonian Economy Under Soviet Rule: A Historiographic Overview. *40*(2), 245-264. doi:10.1080/01629770902884284

Kottasova, I. (2016, May 3). Is Europe's jobs crisis over? CNN. Retrieved March 28, 2017, from http://money.cnn.com/2016/05/03/news/economy/europe-jobs-unemployment-crisis-over/

Kratovits, A., & Punning, J.-M. (2001, November). Driving forces for the formation of environmental policy in the Baltic countries. *Ambio, 30*(7), pp. 443-449. Retrieved April 1, 2017, from http://www.jstor.org/stable/4315180

Kyi, G. (2001, June 29). Employment in the EU Regions 2000: Job creation is driven by the service sector – education is essential. Retrieved March 28, 2017, from http://ec.europa.eu/eurostat/documents/3433488/5395805/KS-NK-01-013-EN.PDF/ce51a626-1a71-47af-8bab-fd6b7c4b0c57

Laca, P., Chamonikolas, K., & Mortkowitz Bauerova, L. (2017, April 6). Czechs Trigger Long-Awaited Koruna Float Without Swiss Shock. Bloomberg. Retrieved April 1, 2017, from https://www.bloomberg.com/news/articles/2017-04-06/czech-central-bank-ends-currency-cap-to-let-koruna-float-again?cmpid=socialflow-facebook-business&utm_content=business&utm_campaign=socialflow-organic&utm_source=facebook&utm_medium=social

LETA. (2017, March 7). Latvia has smallest gender pay gap in Baltics - Paylab survey. Retrieved April 2, 2017, from http://www.leta.lv/eng/home/important/133C643D-5961-69B9-17D6-63FA565C0C87/

Lie, K. Y., Pang, V., & Mansur, F. (2008). *Employer Perceptions on Graduate Literacies in Higher Education in Relation to the Workplace*. Universiti Kebangsaan Malaysia, Universiti Malaysia Sabah. Retrieved March 28, 2017, from http://www.esp-world.info/Articles_20/DOC/Koo_vp_employer_Journal18Oct09.pdf

Majchrowska, A., Broniatowska, P., & Żółkiewski, Z. (2016, October). Minimum Wage in Poland and Youth Employment in Regional Labor Markets. *Emerging Markets Finance and Trade, 52*(9), 2178-2194. doi:10.1080/1540496X.2015.1068611

Marlier, E., & Natali, D. (2010). *Europe 2020: Towards A More Social EU?* Bruxelles: Peter Lang.

Martin, J. P. (2009). Jobs Crisis. OECD Observer. Retrieved March 30, 2017, from http://oecdobserver.org/news/archivestory.php/aid/3065/Jobs_crisis.html

Martus, B. (2015, February). Should We Increase Economic Growth or Boost Employment? *Public Finance Quarterly (0031-496X), 60*(2), 249-269. Retrieved April 1, 2017, from http://datubazes.lanet.lv:3536/ehost/detail/detail?vid=0&sid=04fef3c4-c582-467b-98e8-c69bce96c55a%40sessionmgr120&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#AN=108287427&db=bth

Medeiros, J., & Minty, P. (2012). *Analytical support in the setting of EU employment rate targets for 2020*. European Commission. Retrieved March 30, 2017, from http://ec.europa.eu/social/BlobServlet?docId=7758

Moreno-Enguix, M. D., Gómez-García, J., & GóMez-Gallego, J. C. (2012). An Impact Analysis of the European Structural Funds on the Variation of the Rate of Employment and Productivity in Objective 1 Regions. *European Planning Studies*, 321-340. doi:10.1080/09654313.2012.650907

New Europe Investor. (2015, October 16). Minimum Wage in Estonia to Rise in 2016 and 2017. Retrieved April 1, 2017, from http://www.neweuropeinvestor.com/news/minimum-wage-in-estonia-to-rise-in-2016-and-2017-10595/

Noback, I., Broersma, L., & Van Dijk, J. (2013). 'Gender-Specific Spatial Interactions on Dutch Regional Labour Markets and the Gender Employment Gap. *Regional Studies, 47*, 1299-1312. doi:10.1080/00343404.2011.629183

Organisation for Economic Co-operation and Development (OECD). (1998, October 6). *The Future of Female-dominated Occupations*. Paris: OECD Publishing. doi:10.1787/9789264163690-en

Organisation for Economic Co-operation and Development (OECD). (2000). *Policy insights from a decade of Baltic transition*. Paris: OECD Publishing. Retrieved April 3, 2017, from http://www.oecd.org/estonia/1864879.pdf

Organisation for Economic Co-operation and Development (OECD). (2003). Unemployment Risk Factors in Estonia, Latvia and Lithuania. Retrieved March 27, 2017, from http://www.oecd.org/social/soc/2493996.pdf

Organisation for Economic Co-operation and Development (OECD). (2005, September 30). *Ageing and Employment Policies/Vieillissement et politiques de l'emploi: France 2005*. Paris: OECD Publishing. doi:10.1787/9789264008878-en

Organisation for Economic Co-operation and Development (OECD). (2007). Full Employment Strategies for Cities: The Case of Glasgow. *OECD Papers, 6*(12), 1-18. doi:10.1787/oecd_papers-v6-art41-en

Organisation for Economic Co-operation and Development (OECD). (2008). *Employment and Social Policies: Making Formal Employment More Attractive*. Paris: OECD Publishing. doi:10.1787/9789264043770-6-en

Organisation for Economic Co-operation and Development (OECD). (2009). *The Jobs Crisis: What Are the Implications for Employment and Social Policy?* Paris: OECD Publishing. doi:10.1787/empl_outlook-2009-2-en

Organisation for Economic Co-operation and Development (OECD). (2010, March 25). *Accession of Estonia to the OECD: Review of international investment policies*. Paris: OECD Publishing. Retrieved March 31, 2017, from https://www.oecd.org/estonia/49864112.pdf

Organisation for Economic Co-operation and Development (OECD). (2011). *Estonia: Towards a Single Government Approach*. Paris: OECD Publishing. doi:10.1787/9789264104860-en

Organisation for Economic Co-operation and Development (OECD). (2012, September 11). Education at a Glance: OECD Indicators 2012 Estonia. Paris: OECD Publishing. doi:10.1787/eag-2012-44-en

Organisation for Economic Co-operation and Development (OECD). (2012). *Gender equality in employment*. Paris: OECD Publishing. doi:10.1787/9789264179370-5-en

Organisation for Economic Co-operation and Development (OECD). (2013). *Russia: Modernising the Economy*. Paris: OECD Publishing. doi:10.1787/9789264207998-en

Organisation for Economic Co-operation and Development (OECD). (2014). *Improving social cohesion through employment-friendly policies*. Paris: OECD Publishing. doi:10.1787/9789264196155-7-en

Organisation for Economic Co-operation and Development (OECD). (2015, February). *OECD Economic Surveys: Latvia 2015*. Paris: OECD Publishing. doi:10.1787/9789264228467-en

Organisation for Economic Co-operation and Development (OECD). (2015). *OECD Employment Outlook 2015*. Paris: OECD Publishing. doi:10.1787/empl_outlook-2015-en

Organisation for Economic Co-operation and Development (OECD). (2016, March). *OECD Economic Surveys: Lithuania 2016: Economic Assessment*. Paris: OECD Publishing. doi:10.1787/eco_surveys-ltu-2016-en

Organisation for Economic Co-operation and Development (OECD). (2016, July 7). *OECD Employment Outlook 2016*. Paris: OECD Publishing. doi:10.1787/empl_outlook-2016-en

Organisation for Economic Co-operation and Development (OECD). (2017). Adult education level (indicator). Retrieved April 3, 2017, from https://data.oecd.org/eduatt/adult-education-level.htm#indicator-chart

Organisation for Economic Co-operation and Development (OECD), EU. (2014, September 18). *Matching Economic Migration with Labour Market Needs*. Paris: OECD Publishing. doi:10.1787/9789264216501-en

Pastor, G., & Damjanovic, T. (2001, October). *The Russian Financial Crisis and its Consequences for Central Asia*. International Monetary Fund. Retrieved March 30, 2017, from https://www.imf.org/external/pubs/ft/wp/2001/wp01169.pdf

Pierīgas izglītības, kultūras un sporta pārvalde. (2009). ESF PROJEKTI. Eiropas Sociālais Fonds (ESF). Retrieved April 5, 2017, from http://www.ikspieriga.lv/index.php?menu=40801&page=4&lang=lv

Politics & Government. (2007). *Baltic States Country Profile*. Retrieved February 25, 2017

Rodriguez, R., & John Warmerdam, C. E. (2010, July). *The Lisbon Strategy 2000 – 2010: An analysis and evaluation of the methods used and results achieved.* Brussels: European Parliament. Retrieved March 29, 2017, from http://www.europarl.europa.eu/document/activities/cont/201107/20110718ATT24270/20110718ATT24270EN.pdf

Rupp, L., Coleman-Lochner, L., & Turner, N. (2017, April 7). America's Retailers Are Closing Stores Faster Than Ever. Bloomberg. Retrieved March 31, 2017, from https://www.bloomberg.com/news/articles/2017-04-07/stores-are-closing-at-a-record-pace-as-amazon-chews-up-retailers?cmpid=socialflow-facebook-business&utm_content=business&utm_campaign=socialflow-organic&utm_source=facebook&utm_medium=social

Sauter, R., Illés, A., & Nunez, J. (2014, February). *Financing Europe 2020: a consolidated view*. European Committee of the Regions. doi:10.2863/9554

Sawtelle, B. (2007, October). Analyzing the Link Between Real GDP and Employment: An Industry Sector Approach. *Business Economics, 42*(4), 46-54. doi:10.2145/20070405

Şerb, D. E., & Cicioc, N. (2015). Employment Rate Strategic Foresight Analysis and Its Implications in the Poverty Rate. *Revista Academiei Fortelor Terestre, 20*(1), 94-101.

Statistics Estonia. (2017, March 2). Average monthly gross wages (salaries) and hourly gross wages, quarters. Retrieved March 30, 2017, from http://www.stat.ee/36715?highlight=minimum,wage

Statistics Estonia. (2017). Employment has increased among elderly. Retrieved March 29, 2017, from https://statistikaamet.files.wordpress.com/2016/12/161202_h6ivatud_55_64_veeb.png

Statistics Estonia. (2017, April 28). Gender pay gap by economic activity (emtak 2008), october, code [WS5335]. Retrieved May 1, 2017, from http://pub.stat.ee/px-web.2001/Dialog/varval.asp?ma=WS5335&ti=GENDER+PAY+GAP+BY+ECONOMIC+ACTIVITY+%28EMTAK+2008%29%2C+OCTOBER&path=../I_Databas/Economy/36Wages_and_salaries_and_labour_costs/09Wages_and_salaries/02Annual_statistics/&lang=1

Statistics Estonia. (2017, March 27). Gross domestic product and gross national income per capita (ESA 2010), code [NAA0013]. Retrieved March 29, 2017, from http://pub.stat.ee/px-web.2001/Dialog/varval.asp?ma=NAA0013&ti=GROSS+DOMESTIC+PRODUCT+AND+GROSS+NATIONAL+INCOME+PER+CAPITA+%28ESA+2010%29&path=../I_Databas/Economy/23National_accounts/01Gross_domestic_product_%28GDP%29/12Main_national_accounts_indicators/

Statistics Estonia. (2017, February 28). Gross domestic product by income approach at current prices (quarters), code [NAA0024]. Retrieved March 27, 2017, from http://pub.stat.ee/px-

web.2001/I_Databas/Economy/23National_accounts/01Gross_domestic_product_(GDP)/08Gross_domestic_product_by_income_approach/08Gross_domestic_product_by_income_approach.asp

Statistics Estonia. (2017, February 14). No major changes in the labour market. Retrieved April 3, 2017, from https://www.stat.ee/news-release-2017-019

Statistics Estonia. (2017, April 5). Population by sex and age group, 1 january, code [PO021]. Retrieved March 28, 2017, from http://pub.stat.ee/px-web.2001/Dialog/varval.asp?ma=PO021&ti=POPULATION+BY+SEX+AND+AGE+GROUP%2C+1+JANUARY&path=../I_Databas/Population/01Population_indicators_and_composition/04Population_figure_and_composition/&lang=1

Statistics Lithuania. (2016, July 8). Gender pay gap. Retrieved March 31, 2017, from http://osp.stat.gov.lt/en/statistiniu-rodikliu-analize?id=1502&status=A

Statistics Lithuania. (2017, February 24). Employment rate. Retrieved April 2, 2017, from http://osp.stat.gov.lt/en/statistiniu-rodikliu-analize?id=1722&status=A

Statistics Lithuania. (2017, April 28). GDP, at current prices. Retrieved May 5, 2017, from http://osp.stat.gov.lt/statistiniu-rodikliu-analize?id=8443&status=A

Statistics Lithuania. (2017). *National accounts: Database of Indicators*. Retrieved March 31, 2017, from http://osp.stat.gov.lt/en/rodikliai38

Statistics Lithuania. (2017). *Population: Database of Indicators*. Retrieved April 3, 2017, from http://osp.stat.gov.lt/en/rodikliai5

Stock, K. (2017, February 21). The Next Financial Crisis Might Be in Your Driveway. Bloomberg. Retrieved March 29, 2017, from https://www.bloomberg.com/news/articles/2017-02-21/the-next-financial-crisis-might-be-in-your-driveway

Swati, S. (2016, June 29). Does Education Determine Employment: Peculiarities of the Indian Labour Market. *Studies in Business and Economics, 11*(1), pp. 164-180. doi:10.1515/sbe-2016-0014

The Economist. (2017, March 8). The best and worst places to be a working woman. Retrieved April 6, 2017, from http://www.economist.com/blogs/graphicdetail/2017/03/daily-chart-0?fsrc=scn/fb/te/bl/ed/

The World Bank Group. (2017). Latvia. Retrieved March 27, 2017, from http://data.worldbank.org/country/latvia

The World Factbook. (2017). *Lithuania*. Retrieved April 4, 2017, from http://www.ww2hc.org/CIA/geos/lh.html

Valsts izglītības attīstības aģentūra. (2017, March). *Projekts "Sākotnējās profesionālās izglītības programmu īstenošana Jauniešu garantijas ietvaros"*. Retrieved April 5, 2017, from http://viaa.gov.lv//lat/es_fondu_projekti/jauniesugarantija/par_jauniesu_garantiju/

Valsts izglītības attīstības aģentūra. (2017, March). *Vai Jauniešu garantija der man?* Retrieved March 28, 2017, from http://viaa.gov.lv/lat/es_fondu_projekti/jauniesugarantija/jg_uznemsanas_noteikumi/

Vaughan-Whitehead, D. e. (2017). *The European social model in crisis : is Europe losing its soul?* Geneva: International Labour Office. Retrieved April 1, 2017, from https://books.google.lv/books?id=JcPiBwAAQBAJ&pg=PA88&lpg=PA88&dq=european+social+model+in+lithuania&source=bl&ots=PUk5FTFdre&sig=tEt7v6lGadMvdW14HZOIQGa0baI&hl=lv&sa=X&ved=0ahUKEwjwk4_jtoHTAhWoKJoKHWDIDQIQ6AEIUjAF#v=onepage&q=european%20social%20model%20

Vienotie Internet Dati (VID). (2017). *Minimālās Algas Likmes*. Retrieved March 30, 2017, from http://www.vid.lv/minim257l257-alga.html

Vöörmann, R. (2009, November). Gender Segregated Labour Markets in the Baltics: What are Prevailing – Similarities or Differences? *Studies of Transition States and Societies*, *1*(1). Retrieved March 28, 2017, from https://www.etis.ee/File/DownloadPublic/a53ea47f-9163-411b-adb7-81af5dff460f?name=Fail_STSS_voormann.pdf&type=application%2Fpdf

WageIndicator.org. (2016). *Estonia's Minimum Wage set to rise - December 23, 2016*. Retrieved March 30, 2017, from http://www.wageindicator.org/main/salary/minimum-wage/minimum-wages-news/estonias-minimum-wage-set-to-rise-december-23-2017

Warrell, H., & Raptopoulos, L. (2016, October 28). EU citizens in UK fear for jobs ahead of Brexit talks. Financial Times. Retrieved April 5, 2017, from https://www.ft.com/content/84a8b21e-9c32-11e6-8324-be63473ce146

Wolf, M. (2017, April 11). China faces a tough fight to escape its debt trap. Financial Times. Retrieved April 1, 2017, from https://www.ft.com/content/1c096f7e-1ddc-11e7-b7d3-163f5a7f229c

World Trade Organization. (2017). *3 The WTO can ... stimulate economic growth and employment*. Retrieved April 7, 2017, from https://www.wto.org/english/thewto_e/whatis_e/10thi_e/10thi03_e.htm

Zasova, A., & Meĭihovs, A. (2005, March). *Latvijas darba tirgus elastības novērtējums.* Riga: Latvijas Banka. Retrieved April 5, 2017, from https://www.bank.lv/public_files/images/img_lb/izdevumi/latvian/citas/darba_tirgus_elastiba.pdf

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Herewith I confirm by putting my signature that the research has been conducted individually, as well as the fact that only the indicated sources of literature have been used in the paper and that the electronic copy of the paper corresponds to the printout.

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