GLASS CEILING OR STICKY FLOOR? UNMASKING THE HETEROGENEITY OF THE LITHUANIAN GENDER PAY GAP

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Abstract

This thesis is aimed at unravelling the heterogeneity of the gender pay gap throughout the pay distribution in Lithuania. In order to do that, it applies the unconditional quantile regressions approach to the data collected by the Lithuanian Department of Statistics for the year 2014. The empirical analysis suggests that a glass ceiling effect can be observed in the Lithuanian labor market. The findings also demonstrate that the gender pay gap throughout the entire pay distribution can be attributed not to the observable pay determining characteristics of the employees but rather to the returns to these characteristics, which suggests that the gender inequality in pay in the Lithuanian labor market occurs because of the discriminatory factors. Further, in light of the Lithuanian context, the thesis highlights the potential determinants of the glass ceiling. They include gender stereotypes prevalent in the Lithuanian society, extensive maternity leave, lack of favorable conditions to reconcile between work and family, and not transparent hiring and promotion procedures within the organizations.

Key words: gender pay gap, glass ceiling, sticky floor

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It is not gender difference, but rather the difference that gender makes that explains why these barriers persist.

Meredith Ann Newman, 1993

Introduction

Although many would argue that the last century has been marked by unprecedented convergence of gender inequalities in both social and economic spheres of life (Goldin, 2014), women, overall, continue being in a much more disadvantageous position than their men counterparts, with little exceptions to the general rule. While these disadvantages affect almost each and every aspect of women's life, the labor market provides for the possibility to measure them in a tangible and quantifiable way. As a result, most of the Western world has begun implementing various policies designed to counteract gender inequalities in their labor markets, nonetheless, these issues are driven by a complex interplay of social, psychological, and structural factors that seem to be reluctant to change. A good illustration of that is differences in pay between women and men that still persist after years of being talked about and are strongly visible in most of the states (OECD, 2017).

There is a substantial number of academic pieces published on the gender pay gap and its nature, nonetheless, the research has been mostly focused on the mean of the pay distribution. Only less than twenty years ago the scholars have recognized that, in fact, the gender pay gap may not necessarily be uniform throughout the distribution. It is agreed now that the heterogeneity can mainly manifest itself in two forms: in some labor markets, the pay gap tends to be larger at the bottom part of the pay distribution – a phenomenon known as *sticky floor* (Booth, Francesconi & Frank, 2003) – whereas in others the gap widens at the upper part of the distribution – a phenomenon labeled as *glass ceiling* (Albrecht, Bjorklund & Vroman, 2003). Because of its importance when trying to choose the right policy approach in

order to tackle gender disparities in pay, this differentiation between the two has given a rise to a large strand of empirical works (Meurs & Ponthieux, 2015).

Despite the fact that there are numerous studies on the subject, they mostly focus on the Western labor market contexts and rarely go beyond the conventional scope. Though, it is made clear by now that different labor markets produce largely differing outcomes in terms of the patterns of heterogeneity, its extent, size, or sectors it affects. Also, a significant amount of research has been conducted aspiring to reveal the underlying causes behind the emergence and persistence of the glass ceiling or sticky floor effects, nevertheless, while many different social, cultural, structural, corporate or psychological factors have been confirmed to have an impact, the issue remains very much context and case specific. Therefore, the patterns of the gender pay gap heterogeneity and its determinants found in one market may not necessarily be applicable when drawing generalizable conclusions about other labor markets, and individual case studies are needed in order to produce reliable results.

Given the need for individual case studies, especially for those that would explore the labor markets outside of the Western world, this thesis looks at the specific case of Lithuania. With the estimated gender pay gap of 14.8% for the year 2017 (Eurostat, 2019), Lithuania falls behind the EU average not only in terms of gender inequality in pay but almost on any other indicator measuring gender inequality in the labor market (e.g. vertical segregation). In addition, it is the only country in the EU that has degraded with regard to gender disparities in the labor market in the last 15 years (EIGE, 2018). Even though addressing these issues in academic research would be essential for prescribing relevant policy tools to counter inequality in pay, the amount of research conducted on both the gender pay gap and its heterogeneity in Lithuania is very much limited. To the best of the author's knowledge, there is not even a single study addressing the glass ceiling or sticky floor effects in the Lithuanian labor market.

Therefore, this thesis attempts to fill in the existing gap in the literature, by asking the following question: *Is there a glass ceiling or a sticky floor in the Lithuanian labor market and, if yes, what is the discovered pattern determined by?*

To answer the research question, this thesis uses the data set provided by the Lithuanian Department of Statistics and employs unconditional quantile regressions to decompose the gender pay gap. The empirical analysis provides no evidence of the sticky floor in Lithuania, nonetheless, the findings indicate a mild glass ceiling effect. After revealing the pattern of the gender pay gap heterogeneity, the thesis turns to discussing the determinants of the glass ceiling specifically in the context of Lithuania and highlights a few of them, including prevalent gender stereotypes, extensive maternity leave, lack of favorable conditions to reconcile between work and family, and not transparent hiring and promotion procedures within the organizations.

The thesis is divided into four chapters. The first part introduces the reader to the literature on the gender pay gap and its determinants with a specific emphasis on vertical segregation and how it manifests in either glass ceiling or sticky floor effects. The second chapter is dedicated to discussing gender disparities in the Lithuanian labor market as well as presenting the limited amount of literature that exists on Lithuania. Further, the third part of the thesis introduces the empirical strategy, data, and variables used in the research. Finally, the fourth chapter presents the empirical findings as well as highlights the potential reasons behind the existing pattern of heterogeneity within the gender pay gap in Lithuania.

Chapter 1. Understanding the Gender Pay Gap

In this chapter, I define what a gender pay gap is and present its relevance from both moral and economic points of view. Then I turn to discussing the potential explanations for the emergence, persistence and magnitude of the gender pay gap and dive deeper into one of the key factors – vertical segregation - differentiating between the *glass ceiling* and *sticky floor* effects. I overview the literature that exists on the phenomena so far and demonstrate why further research is needed.

1.1. Why Does it Matter?

While pay equity has recently become a topic of debate that receives a lot of attention in various spheres of public life, academia included, some still wonder what it is exactly that constitutes to its importance. First and foremost, prevailing differences in wages for individuals of different genders matter from a moral point of view – considerations of social justice and fairness need to be mentioned here as pay equity would facilitate achieving fairer and more just societal outcomes where equal opportunities and renumeration would be ensured for everybody with no regard to their gender (Rubery, 2016). Today, unfortunately, that is not the case which, in turn, holds certain undesirable consequences for women. Intuitively, gender pay gap is the main cause of an overall income gap between women and men (Rubery, 2016) because of which women tend to be on average poorer and more overworked than men (Paulauskas, 2017). This becomes especially evident at later stages of women's life, because the main source of income at the time – retirement benefits – largely depends on the amount of individual's earnings throughout their life, and since women on average earn less, they also receive less in pension, putting them at much greater risk of poverty (Meurs & Ponthieux, 2015). More broadly, increasing levels of poverty among women in comparison to men are often referred to

as feminization of poverty, a phenomenon to which gender pay gap in conjunction with gender pension gap contribute significantly (European Commission, 1998).

Aside from normative concerns, wide gender pay gap might as well have several economic implications for society as a whole. Existing literature suggests that gender inequality in pay is negatively associated with economic growth (Schober & Winter-Ebmer, 2011). One of the main possible explanations behind this relationship implies that women might be discouraged to take place in the labor market if they feel they are discriminated against as the remuneration for the work done does not reach their reservation wage (Baldwin & Johnson, 1992). To express it in quantifiable terms, Cassels, McNamara, Miranti and Vidyattama (2009) have estimated that a complete closure of gender pay gap in Australia would result in an increase of GDP by around 93 billion Australian dollars. This effect would be seen mostly due to an increase in number of working hours and the exploitation of otherwise unused skills that women have (Cassels, McNamara, Miranti & Vidyattama, 2009). In addition to this, a significant amount of research has shown that the resources spent on the welfare of children within the household highly depend on whether these resources are handled by their mother (Morrison, Raju & Sinha, 2007). When income gained by women in the families increases, so does the proportion of the family budget spent on education and health care, in that way improving the living conditions of children (Thomas, 1997). As a result, depriving women from higher income can result in decreasing human capital endowments for future generations, in that way constraining future social and economic development (Schober & Winter-Ebmer, 2011).

Therefore, gender pay gap holds significant implications of both moral and economic nature and presents itself as an important area of study worthy extensive examination.

1.2. Definition, Causes, and Beyond

Gender pay gap is typically defined as the difference in average hourly gross wage between women and men (Meurs & Ponthieux, 2015). Commonly, a distinction is made between adjusted – factors that might have an effect on gender pay gap, such as differing levels of education, type of job, career interruptions, hours of work or experience in the labor market, are taken into account – and unadjusted gender pay gap (OECD, 2002).

The scholars have traditionally analyzed the determinants of gender pay gap in the light of human capital theory (i.e. Jun & Polacheck, 2014), discrimination (see Evans & Nelson, 1989 or O'Neill, 1985) or labor-force participation (Hunt, 2002). However, due to changing social and economic contexts, most of these explanations are not anymore particularly relevant for elucidating the situation that can be observed in current labor markets. Today the general agreement is that the gender pay inequality does not anymore originate from the unequal pay to comparable workers of different genders but rather stem from uneven concentration of women and men among different sectors, firms, occupations and grades (Blau & Kahn, 2012).

It is a stylized fact that most of the gender pay gap can be attributed to occupational segregation (see Figure 1 for a simplified breakdown scheme of occupational segregation) (Meurs & Ponthieux, 2015). It is commonly accepted to distinguish between horizontal and vertical segregation. Horizontal segregation refers to a differing level of concentration of women and men in given occupations or sectors (Bettio & Verashchagina, 2009). Basically, it means that a given group (in this case, either women, or men) is either under- or over-represented in a certain occupation or sector and that representation does not follow any criterion (Bettio & Verashchagina, 2009). Even if to varying extents, horizontal segregation is present in all industrialized societies (OECD, 2018). The existing empirical studies suggest that it might often have a negative effect on gender pay gap because jobs dominated by women employees

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tend to pay less (Bayard, Hellerstein, Neumark & Troske, 2003), however, that is not necessarily the case in all countries or in all occupations/sectors (Meurs & Ponthieux, 2015).

On the other hand, vertical segregation is understood as a difference in level of concentration of women and men in different positions of occupational hierarchy (European Commission, 1998). To put it simply, it implies that a certain group of employees (in this case, either women or men) are either under- or over-represented in "occupations or sectors at the top of an ordering based on 'desirable' attributes", such as salary, prestige, power of decision-making, job stability, etc. (Bettio & Verashchagina, 2009, p. 7). It is an established fact that women face obstacles imposed by vertical segregation and do not climb the occupational ladder at the same pace as men do (Meurs & Ponthieux, 2015). In fact, in all OECD countries with no exception, considerably less women can be found in managerial and top administrative positions (OECD, 2018). Further, in the current academic literature, vertical segregation is considered to be the most decisive factor in explaining gender pay inequality (Meurs & Ponthieux, 2015).

The scholars distinguish two ways which vertical segregation might manifest in – glass ceiling effect and sticky floor effect (Meurs & Ponthieux, 2015). Both of them are further discussed in the following sections.
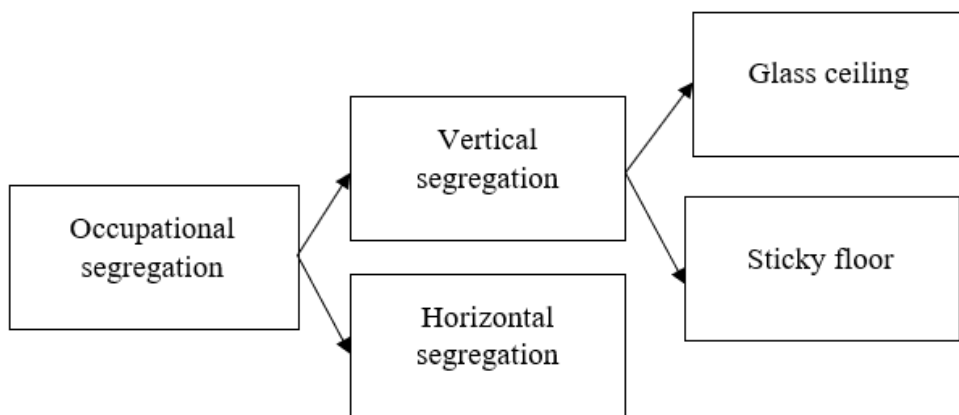

Figure 1. A simple breakdown scheme of occupational segregation

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1.2.1. Glass ceiling effect

In 1986, the term *glass ceiling* was mentioned in an article of a Wall Street Journal after which it became much more broadly used both in the public discourse and academia (Jackson & O'Callaghan, 2009). The expression was further popularized by Albrecht, Bjorklund and Vroman (2003) and their article decomposing gender pay gap in Sweden. Since then, the term *glass ceiling* has been extensively used in gender pay inequality research to refer to invisible barriers and artificial impediments that prevent women from climbing up the hierarchical ladder at work to top managerial or administrative positions (Meurs & Ponthieux, 2015), whereas *glass ceiling effect* is now used to describe the phenomenon itself where women, even if they do perform well in the labor market, cannot advance further in their careers due to the existence of the *glass ceiling* (Albrecht, Bjorklund & Vroman, 2003). These invisible barriers mostly refer to traditional norms and values that influence society's attitude towards women and hinder their equal participation in the labor market (European Commission, 1998). Empirically, the presence of *glass ceiling effect* is witnessed if the observed gender pay gap becomes wider at the top of women's and men's wage distribution but remains roughly constant at the middle or bottom part (Albrecht, Bjorklund & Vroman, 2003).

1.2.1.1. Conceptualization

To differentiate from other types of gender inequalities, Cotter, Hermsen, Ovadia and Vanneman (2001) provide a thorough conceptualization of the glass ceiling effect based on four criteria (note: the scholars discuss the glass ceiling effect in light of both race and gender, however, for the scope of this thesis I only refer to gender). These criteria help to better understand what the glass ceiling effect is and what it is not, what it entails and how to study it. The authors conceptualize the phenomenon with no regards to the final outcome, thus, this framework could be applied to study different labor market inequalities based on gender that

occur specifically because of the glass ceiling effect, e.g. gap in pay or gap in managerial positions. Therefore, in this thesis, it is to be used to reflect the occurrence of gender pay gap.

To begin with, the authors state that the glass ceiling effect is not simply a labor market inequality - it is a reflection of labor market discrimination by definition and it can be detected by examining the part of inequality that cannot be explained by other job-related characteristics that the employed person holds. Thus, the first principle is the following:

> *I. Inequality based on glass ceiling effect reflects a gender difference that cannot be attributed to other characteristics relevant for the job* (*p. 657*).

Further, Cotter et al. (2001) emphasize that the very fact that gender inequality is present among top-level executives in and of itself does not imply the existence of the glass ceiling effect. If women in senior positions experience gender inequality that is as intense as for women at lower levels of occupational ladder, that pattern cannot be defined as glass ceiling effect but rather as a general level of gender inequality. Therefore, according to Cotter et al. (2001), the phenomenon must not only involve inequality within the hierarchy, but that inequality should also increase when moving from lower grades to higher ones. As follows, the second principle reads:

> *II. A glass ceiling effect implies a gender difference that is bigger at higher levels of an outcome than at lower levels of an outcome (p. 658).*

Cotter et al. (2001) specify the third condition for the glass ceiling effect to be present in the following way:

> *III. A glass ceiling effect has an impact not only on the level of concentration of different genders in senior positions but also on chances of progressing to these positions (p. 659).*

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They assert that this criterion together with the second one specifies the glass ceiling effect to be detected only in situations where the inequality in promotions is more prevalent at higher rather than lower levels of occupational ladder. These two criteria also imply that inequality becomes more gender biased as we move up the hierarchical order of occupations.

Finally, the fourth criterion provided by Cotter et al. (2001) is greatly straightforward – disadvantages based on gender that an employee faces should become more severe over the course of a person's career. It reads the following:

> *IV. A glass ceiling effect can be regarded as a gender inequality that escalates throughout the career (p. 661).*

Nonetheless, while this thesis attempts to follow the aforementioned conceptualization of the glass ceiling effect, the final criterion is disregarded as the existing data does not provide for tracing women throughout their careers.

1.2.1.2. Causes

Multiple scholars have speculated about what it is exactly that leads or at least contributes to the emergence and persistence of the glass ceiling effect. The explanations include cultural biases and social attitudes, disproportionate amount of unpaid work that women do (e.g. child rearing, doing chores, taking care of elderly), dead-end jobs, extensive family-friendly policy schemes, organizational culture, or differences in human capital. Since these explanations are usually multilayered, intertwined and come from different academic disciplines, there have been several attempts made to systematize them into meaningful categories. For instance, the Federal Glass Ceiling Commission in the United States (1995) suggests that the determinants of the glass ceiling effect can be classified into societal (includes *supply* barriers that stem from women occupying dead-end positions, and *difference* barriers based on stereotyping), internal (factors that come from within the organizations) and

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governmental barriers. Another suggestion has been made by Oakley (2000) who asserts that these factors can be differentiated between corporate practices, behavioral and cultural causes, and structural and cultural feminist explanations. One of the most recent classifications was presented by Choi and Park (2014) who predicate that barriers that women face in career advancement can be divided into three categories – human capital, socio-psychological and systematic barriers. Following the aforementioned categorizations, the table below provides a systematized summary of the existing literature on the barriers preventing women from climbing the organizational ladder. It divides them into four categories: factors that stem from the theories of human capital; social and psychological factors; factors produced by corporate conditions; and policy environment. It is important to note that the categories are not designed to be mutually exclusive and might overlap.

Table 1. Overview of the literature

Human capital factors	Social and psychological factors	Corporate factors	Policy environment
- Lack of experience and education (Carli & Eagly, 2001) - Differences in leadership training (Lublin, 1996) - Personal and family responsibilities (Lloyd, 1975) - Division of labor at home (Lloyd, 1975)	- Gender based stereotypes (Block, Heilman & Martell, 1995; Heilman, 2002) - Social role theory (Eagly & Karau, 2002) - Different communication styles, personal qualities (Newman, 1993) - Behavioral double-blinds (Jamieson, 1995) - Pollution model (Goldin, 2015)	- Organizational culture (Connell, 2006; Nemoto, 2013) - Promotion policies and practice (Catalyst, 1990) - Exclusion from informal networks (Cabeza, Johnson & Tyner, 2011)	- Extensive maternity leave (Mandel & Semyonov, 2006; Lequien, 2012) - Work-family reconciliation policies (Paulauskas, 2017)

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To begin with, human capital theory is often named as one of the potential contributors to the pervasiveness of the glass ceiling. Following this model, low numbers of women in top management positions would be explained by differences in levels of education, skills, work experience, or other resources or competences that are required to climb up the organizational ladder (Choi & Park, 2014). Yet Edin and Richardson (2002) have demonstrated that only less than a half of the pay gap can be attributed to human capital related factors, like education. It is important to note at this point that if to follow the conceptualization of the glass ceiling effect that has been presented before, factors stemming purely from the human capital theory would not be considered as determinants of the glass ceiling effect because they do not reflect discrimination within the labor market but rather outline the differences between women and men that lead to different labor market outcomes.

Furthermore, the stereotypes of what women are like and the expectations of what women ought to be are seen as important factors contributing to the emergence and persistence of the glass ceiling (Heilman, 2002). Following the traditional understanding of gender roles, women are expected to take on supportive roles in the family, like taking care of their husband, children and home in a broader sense, which in turn reverberates in work environment where women are also awaited in supporting roles rather than leading ones (Newman, 1993). The same gender roles have created an image of a woman who is weak, emotional, less self-confident, or less committed – exactly the opposite of the qualities that traditionally a good leader is expected to have (Newman, 1993). An extensive amount of sociological research has demonstrated that these gender stereotypes and expectations produce significantly negative outcomes for women in a work setting: the results of the work that women do, even if they are identical to those of men, have a tendency to be devalued and underrated (Block, Heilman & Martell, 1995); a behavior of a woman might be interpreted in a very different manner than the exact same behavioral pattern of a man, e.g. a woman frequently talking on the phone in a work

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environment is usually perceived as slothful, whereas a man – as diligent and productive (Heilman, 2002). Consequently, it comes as no surprise that these biases create significant obstacles for women to advance further in their careers.

Some of the family-friendly policies, especially the maternity leave that most of the current welfare states have in place, can be included among the major determinants of the glass ceiling. These policies are designed to influence women's labor supply and help women who decide to have children to balance between family and work (e.g. maternity leave, public childcare, child benefits, etc.). However, there is a strand of literature which demonstrates that extensive family-friendly policies might have an adverse effect for gender equality in the labor market. One of the most prominent studies on the relationship of the welfare state policies and gender gap in managerial positions has been conducted by Mandel and Semyonov (2006). According to the authors, when extensive social benefits (such as generous maternity leave) are provided to working mothers, employers, knowing that female employees might leave the firm for an extended period of time upon their decision to have children, might be reluctant to promote or even hire women to elite positions in the first place, especially if these positions require high investments in the firm-specific skills (Mandel and Semyonov, 2006). Thus, women who are just as qualified for the same high-level positions as men are might find themselves in a difficult situation when it comes to being promoted in their current workplace or securing a well payed job to begin with (Mandel and Semyonov, 2006).

However, extensive welfare schemes do not necessarily need to be in place for an effective or expected motherhood to constrain women's opportunities to climb the organizational ladder. The employers might not choose to hire or promote women to positions of power and prestige because they assume that women either are or are to be mothers who would be more committed to their family than to work and would be more likely to be absent from work because of their

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family duties and less likely to be available to work late hours, overtime or travel for business (Meurs & Ponthieux, 2015).

In these contexts, scholars often evoke a term 'statistical discrimination' which refers to unequal treatment that occurs because of the assumptions that an employer holds about the labor supply and its behavior, which in this case is perceiving women as less competent or productive (Meurs & Ponthieux, 2015). This means that a woman does not need to have or even plan to have children for her to be discriminated on the basis of motherhood – in some countries, generous family friendly policies and attitudes towards working mothers lead to statistical discrimination of all women with no regard to how many children, if at all, they have (Datta Gupta & Smith, 2002).

In addition, organizational culture might be an important factor letting the glass ceiling to appear and persist within a given firm or organization. According to Connell (2006), some organizations establish masculine cultures, meaning that it promotes such norms, attitudes and values which limit women's access to opportunities, resources and power and supports unequal power relations between women and men. The presence of strong masculine organizational culture negatively affects women's opportunities of career advancement because, since the rules within an organization are designed by the individuals in top leadership positions, most of which are men, they make it hard for women to integrate and to become a part of both formal and informal networks that are essential for getting promoted (Cabeza, Johnson & Tyner, 2011). The importance of organizational culture illustrates the complexity of the phenomenon of glass ceiling as its existence might be attributed not only to individual or social but also to organization-level factors which are much more difficult both to identify and to combat.

Besides the potential causes discussed above, there exist some other explanations that have not received that much attention within the academia but are still worth being mentioned. One of

them was presented by Butler and Johnson (2001) who suggest that men are not keen on being supervised by women and since most of the hiring decisions to top leadership positions are made by men, women have a comparably smaller chance to make it. On the other hand, a 'pollution model' proposed by Goldin (2015) supposes that, by entering positions traditionally held by men, women reduce the value and prestige associated with these positions, therefore, men would usually object the recruitment of women in order to preserve the status of their job. Some scholars also invoke a 'dead-end explanation' suggesting that women can be found in top level managerial positions less frequently simply because, as a result of horizontal segregation, they tend to be concentrated in occupations that offer less opportunities of career advancement (Bihagen & Ohls, 2007; OECD, 2002).

While discussing all possible contributors to the glass ceiling is far beyond the scope of this thesis, the variety of existing explanations as well as the possibility to look at its root causes from different disciplinary perspectives only go to show how complex and multidimensional the phenomenon is in its essence. There is little agreement among scholars upon which factors are the most decisive ones as they vary case by case and are context sensitive.

1.2.2. Sticky floor effect

As it was already noted before, the second mechanism within the broader concept of vertical segregation is the 'sticky floor effect'. The term 'sticky floor' was coined by Booth, Francesconi and Frank in 2003 to refer to the phenomenon which is observed when women have a similar probability to be promoted to high-level positions as men do but are likely to acquire less from that promotion than their counterparts who are men. To specify, this would imply that women and men are employed to the same pay scale or position, yet women are assigned pays or positions at the lower end of that scale, whereas men – at the higher end (Booth, Francesconi & Frank, 2003). Empirically, it can be identified if the gender pay gap

widens at the bottom part of the pay distribution (Meurs & Ponthieux, 2013). The introduction of the sticky floor concept to the debate on gender inequalities with no doubt broadened the understanding of the barriers that women face in the labor market.

1.2.2.1. Causes

Since the sticky floor as a concept was introduced to the scientific research on gender inequalities in the labor market relatively recently, the literature that would explore its nature and address factors that could give rise to the phenomenon is limited in both its scope and depth. A few explanations offered by the scholars so far include the effect of pay-bargaining institutions, limited family-friendly policy schemes, prejudice towards women stemming from traditional gender roles, candidate's negotiation skills, statutory minimum wage, and excess supply of women labor.

First, Booth and Francesconi (2003) aptly indicate that collective bargaining institutions, such as trade unions, might be less willing to represent the needs and interests of their members who are women, driven both by the existing gender stereotypes and the assumption that women are less attached to the labor market. As a consequence, the absence of strong support from the relevant pay-bargaining institutions might have a negative effect on women's wages, even if they occupy positions of the same hierarchical level as their colleagues who are men. Second, while one could argue that today promotion procedures are usually well established and precise, especially in larger corporations, the decision on what salary within the pay-scale of the specific position the employee will receive depends on many other factors similar to those already discussed in light of the glass ceiling effect, such as employee's negotiation skills, or manager's discretion or prejudice (Arulampalam, Booth & Bryan, 2007).

Third, the heterogeneity within the gender pay distribution might also be partially determined by the prevailing policy environment in a country of interest. To begin with, although extensive

maternity leave is often mentioned among the primary causes of the glass ceiling effect, the opposite relationship is expected with regard to sticky floor, as empirically proven by Arulampalam, Booth and Bryan (2007). The authors point out that this could be the case since women at the bottom of the pay distribution are assumed to be less secured in the labor market, therefore, policies allowing women to withdraw and then come back to the workforce are associated with having a positive effect on their wages (Arulampalam, Booth & Bryan, 2007). On the other hand, Arulampalam, Booth and Bryan (2007) suggest that childcare, that is financed (or at least subsidized) by the state, might catalyze the pay dispersion at the bottom, since it might attract to the labor market those women who are not particularly engaged in market production (Arulampalam, Booth & Bryan, 2007). The final explanation from the policy driven perspective is a minimum wage that is established and regulated by the state as it is expected to decrease the gender gap at the bottom part of the pay distribution (Dolado et al., 1996).

Forth, the emergence and pervasiveness of the sticky floor might as well be explained by the excess supply of women employees who, as a result of being driven out from high level positions, are 'crowded' into positions that offer lower wages (Gunderson & Xiu, 2012). On the other hand, Chi and Li (2008) also offer a reverse possibility – in some labor markets, such as the one of China, an excess supply of unqualified men workers might contribute to replacing women with men, in that way reducing the pay that women receive at the bottom part of the pay distribution. Fifth, some scholars assert that this sort of strategy might be employed with a purpose of bypassing some discrimination laws (Booth, Francesconi & Frank, 2003).

Though, any of the mentioned factors rarely go alone, thus, in order to determine what leads to the sticky floor, just as to the glass ceiling, one needs to look at the interaction between the determinants.

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1.2.3. Evidence from the literature

The literature on the pay gap which focuses on the mean of the wage distribution is substantial and significant, however, the standard approach does not account for the possibility that the gender pay gap may not be uniform throughout the distribution. Nonetheless, as indicated before in the last 20 years, the discovery of the glass ceiling and the sticky floor effects has led scholars to look deeper into the variation within the pay distribution, in an attempt to unmask and explain the patterns of its heterogeneity, which, in turn, has resulted in a large set of empirical work.

As mentioned before, one of the most influential pioneer studies on the glass ceiling effect was conducted by Albrecht, Bjorklund and Vroman (2003). Using quantile regressions, the scholars unraveled that there is a strong glass ceiling effect prevalent in the Swedish labor market. It was indeed a striking discovery worth attention, especially given that Sweden did not have a huge average gender pay gap as in comparison to other states. Besides that, they found that Sweden faced a much bigger issue in terms of the glass ceiling effect than the US did, which would seem counterintuitive from the first glance since the general average gender pay gap was much wider in the US than it was in Sweden. Another interesting discovery they made was that the glass ceiling effect was not becoming less relevant over time but exactly the opposite – it became even more prevalent in the 1990s than it was ever before. Finally, Albrecht, Bjorklund and Vroman have also examined the wage gap for native and immigrant employees and found out that there is no difference in the gap at the top of the wage distribution which, as they suggest, proves that glass ceiling effect is a gender specific phenomenon. Their work was an essential contribution to the field, as it clearly demonstrated that, even in the case of the relatively small overall gender pay gap, there might be significant variations over the distribution, that has a much stronger effect on one specific group of women than the other.

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On the other hand, as it was noted before, the sticky floor as a concept and, as follows, as an object of empirical examination emerged slightly later than the one of the glass ceiling, therefore, the amount of both conceptual and empirical research investigating the phenomenon is also somewhat limited. The first substantial study has been conducted by Booth, Francesconi & Frank (2003) whose analysis of British Household Panel Survey data revealed that, while women in the UK might be promoted at a similar rate as men are, they gain significantly less from their career advancements. This particular piece of work had important implications for the research of the upcoming years – first, it helped to uncover that the pay differential may become wider even if both women and men are promoted; second, it showed that the glass ceiling effect is not the only pattern that can explain the heterogeneity within the gender pay gap (Booth, Francesconi & Frank, 2003).

Multiple scholars have followed their example and investigated both the glass ceiling and the sticky floor effects in various developed labor market contexts. The empirical research confirms the existence of the glass ceiling effect in many European and other Western countries, including but not limited to the Netherlands (Albrecht, Van Vuuren & Vroman, 2009), Great Britain (Chzhen & Mumford, 2009), France (Jellal, Nordman & Wolff, 2008), Spain (De la Rica, Dolado & Llorens, 2008; Del Rio, Gradin, & Canto, 2011) and Australia (Kee, 2006), however, it varies greatly in degree and depends on the sector. For instance, Kee (2006) has shown that the glass ceiling effect is firmly prevalent only in private but not public sector in Australian case.

On the other side, the sticky floor effect has been proven to be prevailing in several other developed labor markets – it has been found in Spain (De la Rica, Dolado & Llorens, 2008; Del Rio, Gradin, & Canto, 2011), Italy (Arulampalam, Booth & Bryan, 2007) or the US (Kassenboehmer & Sinning, 2014; Miller, 2009). An interesting discovery has been made by

studying the case of Spain – the scholars have differentiated between women who either have achieved primary/ secondary or tertiary level of education and found out that the wages of highly educated women are affected by the glass ceiling effect, whereas women with low level of education are more susceptible to the sticky floor (De la Rica, Dolado & Llorens, 2008; Del Rio, Gradin, & Canto, 2011).

One of the most comprehensive studies done so far, that is worth a separate mention, was conducted by Christofides, Polycarpou and Vrachimis (2013). In order to check for the heterogeneity within the European labor markets, they examined 26 European countries and confirmed that the states vary to a great extent in terms of how the pay is distributed among genders as well as that in some countries the pay gap is more evident at the bottom part of the distribution and vice versa. While there tends to be a general agreement among scholars that the glass ceiling effect is a more common pattern to be found when decomposing the pay distribution, the article of Christofides, Polycarpou and Vrachimis (2013) is a clear illustration of the existence of large disparities even among European countries. It also shows that what is found in one cannot be easily thrown upon another market, even if upon a seemingly similar one.

As it could be noticed from the discussion so far, the research on the situation of gender inequalities in the labor market has been mostly carried out within the context of Western democracies and only recently studies outside of this scope started to appear. To mention a few of them, Xiu and Gunderson (2012) found out that that the sticky floor rather than glass ceiling effect is more strongly prevalent in case of China; a similar pattern has been observed in India (Deshpande, Goel, & Khanna, 2018) and Thailand (Fang & Sakellariou, 2011).

1.3. Conclusion

This chapter was meant to introduce the reader to the rich academic literature in the field of gender pay gap, with a specific focus on vertical segregation. It was mostly dedicated to defining, explaining, and presenting the empirical evidence of the two patterns in which vertical segregation manifests – glass ceiling and sticky floor effects. The review revealed that both phenomena are complex and multilayered in their nature and, while a substantial amount of academic literature analyzes how the wider gap at the bottom/top of the pay distribution originates and why it persists, there is little agreement among scholars on what the key contributing factors are.

Moreover, a limited number of researchers have looked beyond the conventional scope of developed labor markets. Finally, the outcomes observed in different labor markets, even if in seemingly similar ones, are largely divergent in terms of the extent, size, part of the distribution they appear at or sectors they affect. Therefore, this research is aimed at unraveling the heterogeneity of the gender pay disparities in a labor market that has not been extensively studied yet and addressing the potential causes that lead to the existence of either glass ceiling or sticky floor effect in that specific market.

Chapter 2. Gender Disparities in the Lithuanian Labor Market

The case of Lithuania is analyzed in this thesis, therefore, the following chapter discusses gender disparities – labor force participation, educational gap, occupational segregation, pay gap - within the Lithuanian labor market, as compared to regional trends. It also presents the existing academic literature on the gender pay gap in Lithuania and provides the justification for the case selection.

2.1. Gender gaps

Lithuanian society faces significant challenges in terms of overall gender inequality which in turn heavily manifests itself in its labor market. According to the Gender Equality Index constructed by the European Institute for Gender Equality (EIGE) (2019), Lithuania ranks 23rd among 28 countries in the European Union in terms of equal treatment of genders in different spheres of life. Also, while the average score of the EU has been increasing over the last 12 years, Lithuania is the only country within the EU to follow the opposite direction – the general gap between genders has been widening (EIGE, 2019).

2.1.1. Labor force participation

As for the situation in the labor market, the rates of labor force participation for genders are close to equal - 77% of women and 79% of men in Lithuania are employed (EIGE, 2019). This is one of the very few indicators of gender disparities where Lithuania ranks above the EU average. A more significant difference between women and men can be observed if looking at full-time employment rates – 59.7% of men are working full-time, whereas 9.1% less women hold full-time positions (Eurostat, 2019). Lower full-time employment rates can be partially explained by alarmingly high gender inequality when it comes to care activities – women are

almost twice more likely to be taking care of their children, grandchildren, elderly or relatives with disabilities on a daily basis than men are (women – 41.3%, men - 24.2%) as well as more than 2.5 times more likely to spend at least an hour per day on cooking or housework activities (women – 79%, men – 28.8%) (EIGE, 2019). Though, relatively small differences between genders in the rates of participation in the labor market indicate that it cannot, at least fully, explain the persistence of the gender pay gap in the Lithuanian labor market.

2.1.2. Education

Interestingly enough, the gender gap exists in attainment of education as well – however, Lithuania is one these countries, like Finland or Germany, where it is for women's advantage – 34.8% of women have tertiary education as compared to 26.5% of men (Eurostat, 2019). This helps to rule out the possibility that women might be earning less purely because they possess less skills than men do. However, the concentration of women and men is very unevenly distributed among different study fields – for instance, 41% and 16% of women and men respectively choose to study education, humanities and arts, and health (Eurostat, 2017). This can at least partly explain the existence of horizontal segregation that is discussed in the following subsection.

2.1.3. Horizontal and vertical segregation

Lithuania is also an underachiever when it comes to occupational segregation. Horizontal segregation is clearly expressed by the uneven concentration of women and men in different sectors of economy – even 27% of women occupy positions in health, education and social work as in comparison to only 6% of men employees in these sectors, whereas only 8% of women work in science, technology, engineering or mathematical fields as opposed to 33% of men (EIGE, 2019).

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Important to note for the sake of the argument of this thesis that vertical segregation has always been a very prevalent and considerable issue in Lithuania, but its extent has only intensified in the past years. According to EIGE (2019), Lithuania is one of the three EU member states that have deteriorated in this regard over the past few years (see Figure 1) and currently ranks 20th out of 28 EU member states in terms of the proportion of women holding positions of power. For instance, in 2005, 25% of board members of the central bank were women, whilst in 2018 not even a single woman was included among the board members (EIGE, 2019). Current situation is also perfectly reflected by the share of women in political domain – only one out of thirteen ministers is a woman (Lietuvos Respublikos Vyriausybė, n.d.), women make up only 24.1% of parliament members (Lietuvos Respublikos Seimas, n.d.) and only 24.9 % of regional assembly members (EIGE, 2019).
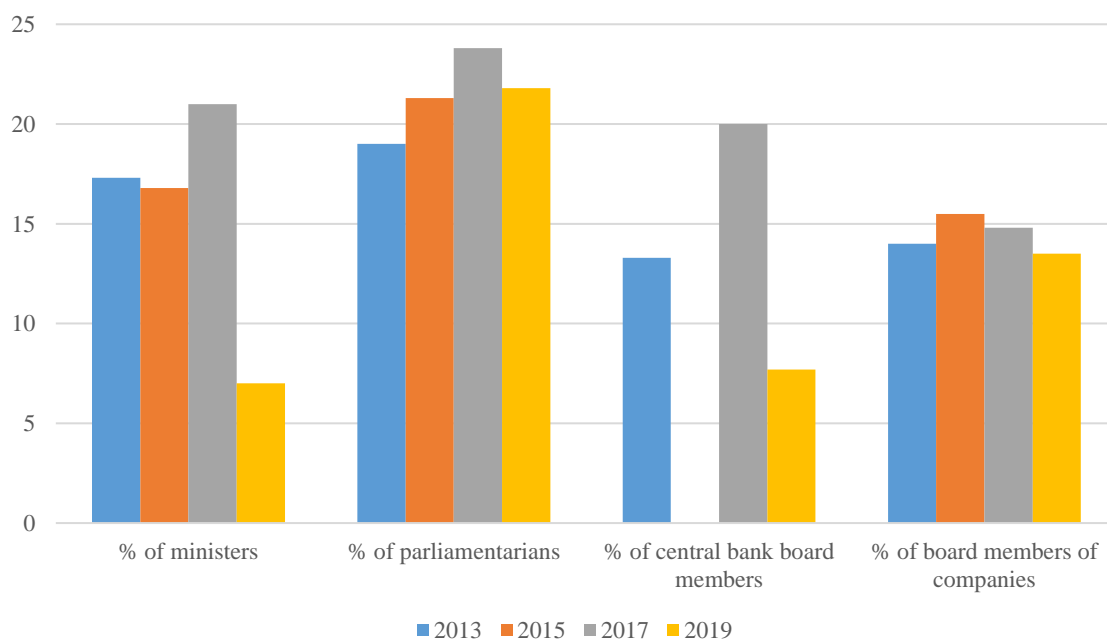
Figure 2. The percentage of women in positions of power from 2013 to 2019
Note: *From EIGE.*

These numbers are well depicted in the public rhetoric – in 2019, when faced with a possibility of all-men cabinet of ministers, the Prime Minister Saulius Skvernelis infamously said: "Women are very important, however, professionalism, personal characteristics matter a lot as

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well" (Delfi, 2019). The setting is no better in economic domain either – only 13.5% of women are board members in the largest companies in Lithuania (EIGE, 2019). As it is visible from the graph, in any given year the share of women in a given sphere was never below 25%. Also, in any given year and in any given sphere Lithuania was below the EU average (EIGE, 2019).

2.1.4. Gender pay gap

According to the calculations of EIGE (2019), in 2017, women in Lithuania earned 16% less than men did (on average, a woman earned 84 cents for every euro a man did). It falls behind the EU average, which stood at 14.8% for the year 2017 (Eurostat, 2019).

Nonetheless, the gender pay gap is not uniform among different sectors of the economy. According to the data of 2018 provided by the Lithuanian Department of Statistics, the highest gap can be witnessed in the fields of finance and insurance – 37.3%; health care and social work – 26%, information and communications – 27.8%; manufacturing – 24.8%; and retail – 20.8%. It is important to mention that while predominantly women employees are working in industries of health care and social work, the gender pay gap is large there mostly because women and men occupy different positions – women are concentrated in low-paid jobs within the sector, whereas men occupy high-paying positions (EIGE, 2019). On the other hand, the lowest inequality in pay towards women is observed in sectors of transportation (-10.1%), construction (-3.2%) and education (2%) (Statistics Lithuania, 2018). However, this could be at least partially explained by the concentration of women in the first two sectors being very low – 11% and 26%, respectively, whereas the sphere of education being dominated by women (79%) (Statistics Lithuania, 2016).

Furthermore, the preliminary calculations conducted by the Lithuanian Department of Statistics (2020) indicate that the inequality in pay between women and men also vary depending on the professional group the employee belongs to (see Figure 4). For example, a

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man in a managerial position earns 1637 euros per month on average as compared to 1505 euros a woman earns. The largest disparities can be seen for those occupying positions of specialists - a man on average earns 1406 euros a month, whereas a woman receives only 1087 euros (a specialist man on average earns 29% more than a woman), or of technicians and junior specialists, where a woman on average gets 806 euros for what a man receives 1033 euros (22% less). The lowest inequality can be seen among the salaries of unqualified workers – an average gross monthly salary for a man is 594 euros, whereas it stands at 516 euros for a woman. These disparities already illustrate that the gender pay gap may not be uniform throughout the pay distribution.
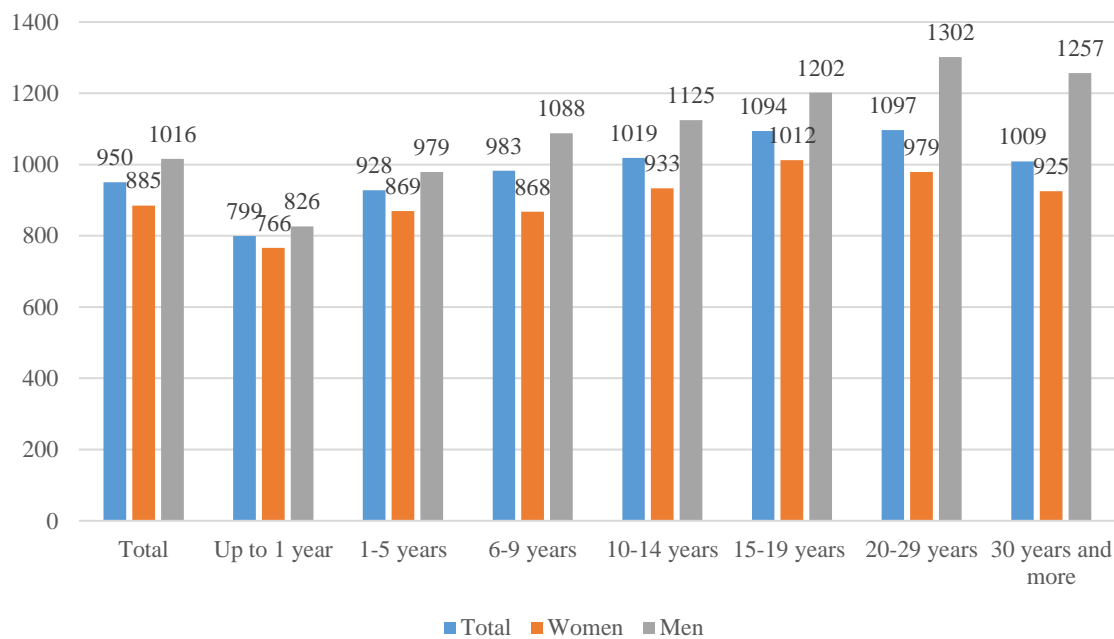
Figure 3. Gross monthly salary for women and men as per work experience
Note: From Lithuanian Department of Statistics (2020).

In addition to this, it is estimated that women who have children are disadvantaged even more as in comparison to both men and childless women – they earn 14% less than women without children and 27% less than men (EIGE, 2019). Further, while the previous sub-section has shown that women on average are more educated than men, the gross monthly salaries of

women who hold tertiary education are 21.8% lower than the salaries of men with the same level of education (Lithuanian Statistics, 2020). Finally, Figure 5 demonstrates that as both women and men gain relevant work experience, the gap in pay between gender widens. For instance, a woman having from 20 to 29 years of experience in the workplace earns on average 979 euros compared to 1302 euros earned by a man with the same amount of experience.
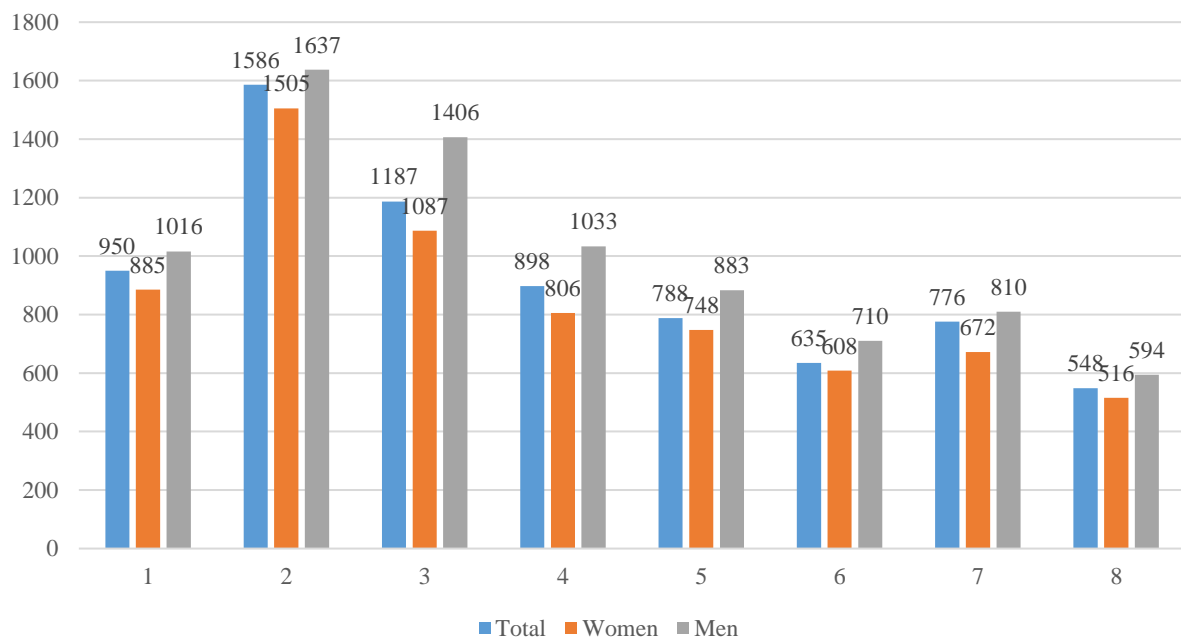
Figure 4. Average gross monthly salaries in euros for the main professional groups in 2018 Note: 1 – total for the economy; 2 – managers; 3 – specialists; 4 – technicians and junior specialists; 5 – public servants; 6 – service sector employees; 7 – qualified workers and artisans; 8 – unqualified workers. From the Lithuanian Department of Statistics (2020).

2.1.5. Social consequences

Gender pay inequality is a problem of significant importance in Lithuanian society as beyond the pay disparities themselves it also entails tangible negative social outcomes for women participating in the labor market. For instance, Lithuanian women on average are more likely to live in poverty, especially at elderly age (Paulauskas, 2017). The pensions that women receive are estimated to be one-fifth lower than those that men obtain (Deveikis, 2019). As a

result, women are more than twice more likely to end up living in poverty in their senior years - 14% of women over the age of 65 face absolute poverty in comparison to 6% of Lithuanian men (Statistics Lithuania, 2018). These numbers clearly illustrate the importance of studying the gender pay gap specifically for the case of Lithuania.

2.1.6. Academic research on Lithuania

The gender pay gap as a central object of academic research has not received much attention in the Lithuanian context. The most comprehensive overview of gender disparities in the Lithuanian labor market has been conducted by Paulauskas (2017). Nonetheless, the main contribution of the study is summarizing the information that is publicly available and bringing in valuable expert opinions, yet it provides little additional empirical insight, especially when it comes to glass ceiling or sticky floor effects.

To the best of the author's knowledge, the only existing academic study on the heterogeneity of the pay gap throughout the pay distribution which includes Lithuania in its scope is the one conducted by Christofides, Polycarpou and Vrachimis (2013). In their examination of 26 countries, the authors also looked at Lithuania and not surprisingly found out that the gender pay gap in Lithuania is stronger in private than public sector. Among other things, the findings did not capture the existence of either the glass ceiling or sticky floor effects in the Lithuanian labor market. Nevertheless, the authors themselves point out that the study only demonstrates the broad picture of the patterns prevailing in the European states, however, more comprehensive studies are needed on an individual country level (Christofides, Polycarpou & Vrachimis, 2013).

2.2. Conclusion

This chapter attempted to present the situation of gender disparities in the Lithuanian labor market. It demonstrated that huge gender differences are not only prevalent in most spheres of social and economic life but also that there has been little improvement happening in this regard – depending on the sphere, gender disparities either have become even more prevalent throughout the years, or were, at least, stagnating. As a matter of fact, Lithuania falls behind the EU average on almost all indicators and is the only EU member state that has degraded in terms of general gender equality.

This chapter has also shown that while gender disparities in the labor market have significant negative consequences for the society as a whole, the amount of research conducted on both general gender pay gap and its heterogeneity in Lithuania is very much limited. Therefore, given the persistence of the gender pay gap, the absence of studies digging deeper into the heterogeneity within it and their importance for being able to prescribe relevant policy tools to counter inequality in pay, this thesis attempts to figure out what the patterns within the Lithuanian labor market are, by asking the following question: *Is there a glass ceiling or a sticky floor in the Lithuanian labor market and, if yes, what is the discovered pattern determined by?*

Chapter 3. Research Design

There are several methodological approaches used to uncover the heterogeneity of the pay gap throughout the pay distribution. The following chapter is dedicated to discussing the most prominent of them and introducing the decomposition procedure that is used in this thesis. Further, it presents the data that is analyzed and the variables as well as their operationalization.

3.1. Methodology

The Blinder-Oaxaca decomposition procedure is among the most standard tools used to decompose the gap in wage means for two groups, usually women and men, into two segments – one that can be attributed to differences between the groups and another that cannot be explained by any observable characteristics (Blinder, 1973; Hlavac, 2018; Oxaca, 1973). It is arguably the most accepted method in gender pay discrimination research, nonetheless, the Blinder-Oaxaca method alone does not allow to account for and analyze the heterogeneity within the pay distribution. Hence, the introduction of quantile regressions into empirical studies of gender pay gap has brought about an entire strand of literature attempting to look beyond the conventional understanding of the phenomenon (Meurs & Ponthieux, 2015). Eventually, it has resulted in a large set of empirical work suggesting different methodological solutions within the quantile regressions approach.

One of the methods well accepted among the researchers, who focus on decomposing the assumed uniformity of the pay gap distribution, is DFL. It basically generates a counterfactual pay distribution by using a reweighting factor, however, it is not suited for "detailed sub-decompositions" and, as a result, has not been chosen for this particular study (DiNardo, Fortin & Lemieux, 1996; Gunderson & Xiu, 2012, p. 311). On the other hand, the MM method, one of the most prominent pay distribution decomposition procedures that exist today, also used by

Albrecht, Bjorklund and Vroman (2003) for the case of Sweden, involves a sophisticated simulation technique which is built upon quantile regressions, nonetheless, it is not applied in this study, due to its onerous nature when it comes to computing (Gunderson & Xiu, 2012; Machado & Mata, 2005). Moreover, a bunch of parametric models have been developed to address the phenomenon (Chernozhukow, Fernandez-Val & Melly, 2011; Fortin & Lemieux, 1998), yet they have been ruled out because of path-dependency (Gunderson & Xiu, 2012). Alongside with the reasons mentioned above, these models were not considered for this study mostly because of them being conditional, which basically means that they measure the effect of covariates on the conditional distribution (Autor, 2015; Firpo, Fortin & Lemieux, 2009).

This thesis, therefore, employs an unconditional quantile regression approach or, to be more specific, a method conventionally known as Recentered Influence Function (RIF) (Firpo, Fortin & Lemieux, 2009; Fortin, Lemieux, & Firpo, 2011). The method is constructed in a way that it substitutes the dependent variable with the analogous recentered influence function for the desired distributional statistics, which, in this case, is inter-quartile ranges (Fortin, Lemieux & Firpo, 2018). Not only does RIF provide for the possibility to account for unconditional distribution, but also is a method that is used frequently, therefore, it is not challenging when it comes to computing and interpreting, by nature similar to simple ordinary least squares (OLS) regressions (Fortin, Lemieux & Firpo, 2018).

The empirical strategy of this thesis is the following: first, the effects on the pay throughout its distribution are divided into explained (endowments) and unexplained (coefficients) parts. The explained component reflects the portion of the pay gap that can be explained by the observable characteristics of the employees, whereas the second component refers to the returns to these characteristics (more extensive explanation on both components is provided in the following

chapter). Then, after calculating the counterfactual pay, separate regressions are run for nine percentiles to detect the differences in pay throughout the pay distribution.

There are a few methodological issues that need to be addressed in empirical research on the gender pay gap. The first one is self-selection bias, in a sense that labor force participation for women and men might be influenced or determined by different factors that are not observable. However, there is little agreement in the literature on how to account for the potential self-selection bias in empirical studies employing quantile regressions (Fang & Sakellariou, 2011; Gunderson & Xiu, 2012). Moreover, while the statistical data provided in the second chapter indicates that the participation in the labor force between Lithuanian women and men is near to equal, there might still be differences in selection of the two groups into the labor market. For instance, having children might barely have an impact on men's employment, whereas it might be a decisive factor for women's involvement in the labor market. This could be corrected for with selection terms, nonetheless, due to the limitations of the data set used in this study, self-selection bias is not adressed.

Empirical studies of this nature are also prone to endogeneity issues. The regression estimates may be biased if any of the covariates, e.g. occupation, is correlated with the error term (Gunderson & Xiu, 2012). However, even though the failure to comply with the exogeneity assumption might lead to estimates being biased, Fortin, Lemieux & Firpo (2011) indicate that the results produced by aggregate decomposition might not necessarily be affected, even if the exogeneity assumption does not hold. As Gunderson and Xiu (2012) point out the most effective way to overcome this issue is by employing instrumental variables, however, it is a difficult task to be achieved with the data used in this study, therefore, this strategy is not followed.

3.2. Data

To analyze the heterogeneity within the pay distribution in the Lithuanian labor market, the data from the Statistical Study of Wage Structure 2014 provided by the Lithuanian Department of Statistics is used. According to the information provided by the Department of Statistics, the study should be reconducted every four years, however, since the most recent data set available covers year 2014, it is the one chosen for the purposes of this thesis. The sample consists of part-time and full-time employees, working in both public and private sectors in different regions of Lithuania, who, at the time of the survey, were between 14 and 69 years old.[1]

The data is collected using two-stage cluster sampling, where the first stage involves a selection of a number of firms, from which the respondents of the survey are again randomly selected to the final sample during the second stage of the sampling procedure (Statistics Lithuania, 2016). Since the Lithuanian Department of Statistics employs carefully scrutinized methodology, most of the issues that might be traditionally associated with the two-stage cluster sampling, such as difficulties in overcoming sampling errors or accounting for effective equality in size, do not appear to be a threat in this research (Imai, 2017). Also, the data set has a relatively large sample size - in total, it consists of 44 953 observations. Another major advantage of the data set is that it involves information on both hourly and yearly pay, allowing for more comprehensive insights into pay distribution. On the other hand, while a few of potentially important variables that could be used as controls are available, such as age, level of education or work experience within a firm, the data set lacks some others, like parental status or number of children, that would potentially allow for more in-depth inference.

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[1] The legal working age in Lithuania starts from 14 years old (jobs that are allowed for individuals below 18 are highly regulated). The official retirement age at the moment of data collection was 61 and 63 years old for women and men, respectively.

3.3. Variables

The response variable used in the analysis is gross hourly wage (h_pay)[2]. The variable is calculated by dividing the monthly wage for October 2014 by the number of hours the respondent has worked during that month. The main explanatory variable representing gender (gender) is binary – it was recoded from original 'F' (indicating a woman) and 'M' (indicating a man) to 0 and 1, respectively. It is important to note at this point that there is no distinction between sex and gender in the Lithuanian language, but the variable is called 'gender' since this thesis seeks to examine the differences that gender rather than sex make.

3.3.1. Control variables

Following the literature on the determinants of glass ceiling and sticky floor effects presented in the first section of the thesis, several variables that are available in the data set are included as controls in the study. The first one of them is a categorical variable for age (age) which consists of six categories – 14-19 (coded as 0), 20-29 (coded as 1), 30-39 (coded as 2), 40-49 (coded as 3), 50-59 (coded as 4), 60+ (coded as 5). Stemming from the human capital theory, the second variable stands for the highest level of education attained by the respondent (education) and is made of four categories – primary or lower secondary education (coded as 0), secondary education (coded as 1), bachelor's degree (coded as 2) and master's or doctor's degree (coded as 3). To account further for the human capital theory, the years of work experience (exp) in a given firm is also included.

The study also considers the type of the place of employment (sector) being either a public sector (coded as 0) or a private enterprise (coded as 1). One more control variable is the industry an employee is working in (industry). It can take one of the fourteen values – supply

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[2] Hereinafter the brackets contain the variable names as in the data set.

of gas, electricity, water and steam (coded as 0), manufacturing (coded as 1), construction (coded as 2), retail and wholesale trade (coded as 3), transport (coded as 4), accommodation and catering services (coded as 5), information and communication (coded as 6), finance and insurance (coded as 7), real estate (coded as 8), professional, scientific and technical work (coded as 9), administrational work (coded as 10), public administration (coded as 11), education (coded as 12), health care and social work (coded as 13) and arts (coded as 14). The data set also includes a control variable for a form of employment (status) which varies from either part-time (coded as 0) or full-time (coded as 1). Finally, the occupation of the respondent is reflected in a variable (occupation) which is made of five categories – managers (coded as 0), specialists (coded as 1), junior specialists (coded as 2), qualified workers (coded as 3) and non-qualified workers (coded as 4).

Chapter 4. Empirical Analysis

The following chapter is dedicated to the empirical analysis that was conducted for the case of Lithuania, introduction of the findings and discussion of the potential determinants that led to the situation in the labor market as it is today.

4.1. Summary statistics

The summary statistics are provided in the Figure 4. To avoid biased estimations, the outliers have been omitted for the dependent variable (gross hourly pay). The mean changed from 14.2 to 12.4 after the removal of outlying values. The boxplots and the distribution of the values before and after the omission of outliers can be found in Appendix A.

As the table illustrates, women in the Lithuanian labor market are on average older and more educated than their men counterparts. They are also more likely to occupy part-time positions or work in the public sector. The biggest disparities in pay can be noticed between women and men in the age group of 40-49 and among women and men who have the same amount of experience in the range of 20 - 50+ years. While the largest gap can be witnessed among the individuals who have more than 50 years of work experience, this group is not particularly representative because of low number of respondents within it. Interesting to note that while significantly more women than men hold bachelor's, master's or PhD degrees, women who have bachelor's on average earn 80.29% of what men earn per hour, whereas women who hold either master's or PhD earn as little as 75.83% of what men receive per hour.

Table 2. Summary statistics for the main control variables

Variables	Women		Men		Hourly pay		Women/men hourly pay ratio
	Obs.	%	Obs.	%	Women	Men	
Education							
Primary/ lower secondary	594	2.66	1 122	4.97	8.43	10.03	84.05
Secondary	9 936	44.42	12 123	53.67	9.46	12.02	78.70
Bachelor's	6 492	29.03	5 856	25.93	13.69	17.05	80.29
Master's or PhD	5 344	24.74	3 655	16.18	19.33	25.49	75.83
Age category							
14 – 19	135	0.01	212	0.94	8.22	8.75	93.94
20 – 29	3 945	17.64	5 070	22.45	11.76	12.91	91.09
30 – 39	4 551	20.35	5 196	23.01	14.82	17.59	84.25
40 – 49	5 879	26.28	5 068	22.44	13.00	16.19	80.30
50 – 59	5 956	26.63	5 012	22.19	12.78	15.29	83.58
60 +	1 900	8.49	2 028	8.98	12.47	14.61	85.35
Sector							
Public	8 497	38	5 913	26.18	13.88	16.40	84.63
Private	13 869	62	16 673	73.82	12.49	15.00	83.27
Employment status							
Part-time	4 573	20.44	3 074	13.61	12.39	13.31	93.09
Full-time	17 793	79.56	19 512	86.39	13.18	15.69	84.00
Work experience[3]							
0 – 9	15 773	70.5	17 441	77.22	12.35	14.34	86.12
10 – 19	3 842	17.17	3 564	15.77	14.89	18.56	80.22
20 – 29	1 776	7.94	1 074	4.76	14.41	19.87	72.52
30 – 39	826	3.7	424	1.88	13.84	18.39	75.25
40 – 49	143	0.64	81	0.36	14.29	19.74	72.39
50 +	6	0.05	2	0.01	11.03	21	52.52
Occupation							
Non-qualified workers	2705	12.09	2084	9.22	7.57	8.82	85.82
Qualified workers	7 100	31.74	11 305	50.05	9.63	12.23	78.74
Junior specialists	3 037	13.57	2 263	10.01	11.74	14.57	80.57
Specialists	7 756	34.67	4 192	18.56	16.28	19.98	81.48
Managers	1 768	7.9	2 742	12.14	22.85	26.85	85.1

Note: the amounts of hourly pay are indicated in litas (former Lithuanian currency before the adoption of Euro in 2015 (exchange rate 1 euro for 3.45 litas))

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[3] In the data set, work experience is a continuous variable, however, it has been broken into categories in this table for the sake of more detailed illustration.

4.2. RIF regressions

The basic formula of the regression equations is depicted below.

$h\_pay_i = \beta_o + age_i\beta_1 + education_i\beta_2 + sector_i\beta_3 + exp_i\beta_4 + occupation_i\beta_5 + status_i\beta_6 + ind1_i\beta_7 + ind2_i\beta_8 + ind3_i\beta_9 + ind4_i\beta_{10} + ind5_i\beta_{11} + ind6_i\beta_{12} + ind6_i\beta_{13} + ind7_i\beta_{14} + ind8_i\beta_{15} + ind9_i\beta_{16} + ind10_i\beta_{17} + ind11_i\beta_{18} + ind12_i\beta_{19} + ind13_i\beta_{20} + ind14_i\beta_{21} + \varepsilon_i,$

where $i = 1, \ldots, n$, β_o = coefficient for the intercept, $\beta_{1,\ldots,21}$ = coefficients for the corresponding variables, ε_i = random error term. The names of variables were presented in the previous chapter.

The results of the RIF decomposition between women and men throughout the pay distribution are depicted in Figure 7. The second and third columns contain the the total pay for women and men, respectively, whereas the fourth column indicates the difference in pay between men and women. As done by Gunderson and Xiu (2012), the fifth column depicts the counterfactual distribution of earnings that women would receive, if they had the same pay structure as men do. The explained component (i.e. endowments) reflects the part of the gender pay gap that can be attributed to observable characteristics, such as age, employment status, sector, job experience, education, occupation, or industry. It is depicted in the sixth column. On the other hand, the unexplained component (coefficients) depicts that part of the gender pay gap that cannot be elucidated by the differences in individual work-related characteristics between women and men and is often interpreted as reflecting the discrimination in the labor market. Nonetheless, it is important to note that coefficients might as well simply reflect the differences that arise due to unobservable factors that could have an effect on wages. The results for the unexplained component are presented in the last column.

As it is evident from the Figure 7, in general the gender pay gap seems to be relatively small, nonetheless, it does grow significantly throughout the pay distribution. The difference in hourly wage between women and men equals to 0.162 litas at the lowest 10th percentile (a woman gets

6.85 litas per hour, while a man receives 7.012), whereas it reaches 0.728 litas at the highest 90th percentile (a woman is paid 23.288 per hour compared to 24.016 for men). Thus, the gender pay gap is considerably wider at the upper part of the pay distribution as compared to the bottom. Also, as the column with the counterfactual distribution demonstrates, if women had the same pay structure as men do, their earnings would exceed those of men at any given percentile. For instance, women at 8th percentile earn 21.284 litas per hour in comparison to 21.946 litas that men make, however, women would earn 22.104 litas per hour if their wage structure were the same as of men.

The explained part of the pay gap does not vary significantly throughout the pay distribution - the effect of endowments remains constantly negative, but slightly increases when moving up the pay distribution (the coefficients decrease in that way increasing the effect). The fact that the explained part is negative shows both that women in general have better observable job relevant characteristics and that in fact it contributes towards the closure of the gap. The size of the endowments decreasing at the top part of the pay distribution indicates that, as the gender pay gap widens at the top, the portion of the gap that can be explained by the personal characteristics also decreases at the upper part of the pay distribution. On the other hand, the unexplained component seems to account for the whole pay gap throughout the entire pay distribution. Essentially, the findings show that women receive less in pay at any given percentile not because they have less endowments that would determine their pay but rather because they receive lower returns for these endowments.

Table 3. Decomposition of the gender pay gap

Percentile (1)	Men (2)	Women (3)	Difference (4)	Counterfactual (5)	Explained (endowments) (6)	Unexplained (coefficients) (7)
10	7.012 * (0.00)	6.850 * (0.00)	0.162 * (0.00)	7.032	- 0.020 * (0.00)	0.142 * (0.00)
20	8.916 * (0.00)	8.585 * (0.00)	0.331 * (0.00)	8.957	- 0.041* (0.00)	0.290 * (0.00)

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30	10.291 * (0.00)	9.846 * (0.00)	0.445 * (0.001)	10.383	- 0.092 * (0.00)	0.352 * (0.00)
40	12.541 * (0.00)	11.987 * (0.00)	0.554 * (0.001)	12.651	- 0.110 * (0.00)	0.443 * (0.00)
50	14.980 * (0.00)	14.425 * (0.00)	0.555 * (0.001)	15.104	- 0.124 * (0.00)	0.431 * (0.00)
60	16.281 * (0.001)	15.681 * (0.001)	0.60 * (0.002)	16.431	- 0.150 * (0.001)	0.450 * (0.002)
70	19.752 * (0.001)	19.121 * (0.001)	0.631 * (0.002)	19.913	- 0.161 * (0.001)	0.469 * (0.002)
80	21.946 * (0.002)	21.284 * (0.001)	0.662 * (0.002)	22.104	- 0.158 * (0.001)	0.503 * (0.03)
90	24.016 * (0.002)	23.288 * (0.002)	0.728 * (0.003)	24.188	- 0.172 * (0.001)	0.556 * (0.003)

Note: * marks the statistical significance at 1 per cent level. The parentheses contain the bootstrapped standard errors with 100 replications.

The decomposition of the gender pay gap is visually depicted in Figure 8 – it envisages the total gender pay gap and its explained (endowments) and unexplained (coefficients) components. The explained (endowments) part is negative and, apart from starting from a higher point and slightly declining at the bottom part of the distribution, it stays almost constant throughout the pay distribution, whereas the unexplained (coefficients) component is significantly larger and seems to move alongside with the pattern of the gender pay gap. The general tendency is clear – all the gender pay gap in Lithuania can be attributed to the unexplained differences between women and men (coefficients). As it was mentioned earlier in the thesis, although coefficients, or returns to the same individual pay determining characteristics, might as well capture unobservable characteristics that potentially have an effect on wages, it is most frequently used as a measure of discrimination in the labor market. Therefore, it could be suggested that at any given percentile most of the difference in pay between women and men in Lithuania occurs based on discriminatory factors.
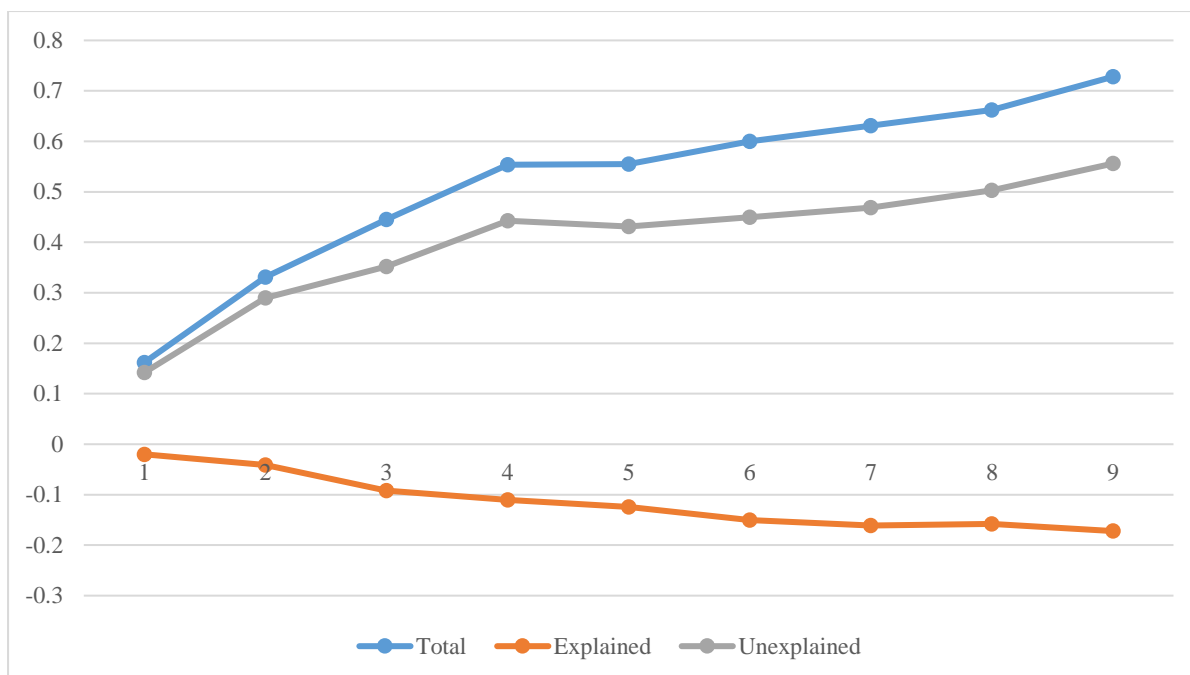
Figure 5. Decomposition of the gender pay gap.
Note: the horizontal axis indicates the percentile of interest; the vertical axis denotes the gender pay gap.

In general, these findings do not confirm the existence of the sticky floor effect in the Lithuanian labor market. Nevertheless, the unexplained (coefficients) component moving alongside the gender pay gap and being higher at the upper part of the pay distribution, as well as the total difference in pay between genders being more expressed at the top of the distribution (exceeding the reference point by two percentage points at the minimum) suggest the prevalence of the glass ceiling (Christofides, Polycarpou & Vrachimis, 2013).

Table 4 and Table 5 provide the regression results that include all explanatory variables for the 10th, 20th, 30th, 40th, 50th, 60th, 70th, 80th and 90th percentiles for women and men, respectively.[4] The tables illustrate that generally having higher level of education, holding higher ranking occupation and being employed in a bigger organization within the private sector increases the hourly wages for workers of both genders. However, the effect of these variables significantly

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[4] The regression coefficients are estimated using a new function in Stata, proposed by Rios-Avila (2019), which allows for factor variables.

increases at the upper part of the pay distribution. For instance, attaining one level higher education increases the hourly pay for women almost 20 times more than at 9th percentile. A very similar tendency is observed for men as well.

Table 4. Regression results for women at all percentiles of interest

	10	20	30	40	50	60	70	80	90
Age	- 0.109 *** (0.01)	- 0.198 *** (0.02)	- 0.280 *** (0.02)	- 0.364 *** (0.03)	- 0.306 *** (0.03)	- 0.137 ** (0.04)	- 0.037 (0.04)	0.263 *** (0.07)	0.824 *** (0.11)
Level of education	0.260 *** (0.02)	0.452 *** (0.02)	0.976 *** (0.04)	1.485 *** (0.05)	1.978 *** (0.06)	2.574 *** (0.07)	2.956 *** (0.09)	4.522 *** (0.12)	5.299 *** (0.21)
Sector	0.193 ** (0.06)	0.284 *** (0.07)	0.543 *** (0.11)	0.539 *** (0.14)	0.653 *** (0.16)	1.156 *** (0.19)	1.590 *** (0.21)	2.855 *** (0.30)	5.000 *** (0.53)
Size of the firm	0.858 *** (0.02)	1.233 *** (0.03)	1.655 *** (0.03)	1.966 *** (0.05)	1.930 *** (0.05)	2.036 *** (0.06)	1.898 *** (0.06)	2.149 *** (0.11)	2.572 *** (0.16)
Work experience	0.008 *** (0.00)	0.023 *** (0.00)	0.053 *** (0.00)	0.076 *** (0.00)	0.081 *** (0.00)	0.078 *** (0.00)	0.071 *** (0.00)	0.093 *** (0.01)	0.044 * (0.01)
Occupation	- 0.526 *** (0.02)	- 0.868 *** (0.02)	- 1.427 *** (0.03)	- 2.068 *** (0.04)	- 2.261 *** (0.04)	- 2.527 *** (0.05)	- 2.721 *** (0.06)	- 3.473 *** (0.08)	- 4.268 *** (0.14)
Employment status	0.235 *** (0.05)	0.752 *** (0.07)	1.007 *** (0.08)	0.969 *** (0.10)	0.820 *** (0.11)	0.755 *** (0.14)	0.311 * (0.13)	- 0.416 (0.21)	- 1.792 *** (0.33)
R-squared	0.36	0.25	0.14	0.09	0.12	0.13	0.12	0.13	0.10
N	22 366	22 366	22 366	22 366	22 366	22 366	22 366	22 366	22 366

Note: *, ** and *** mark the statistical significance at 10, 5 and 1 per cent level, respectively. The parentheses contain the bootstrapped standard errors with 100 replications. The regressions also include 15 dummy variables to control for industry.

Interestingly, even though the work experience has a statistically significant effect for both groups throughout the entire distribution, that effect is relatively small in substantive terms. Being older has a negative impact for women's hourly wages throughout the entire distribution apart from 9th and 10th percentile, whereas for men the effect of age is also negative but not at 10th and 90th percentiles. Working in a private sector also significantly increases wages for women throughout the entire pay distribution, while for men the effect is twofold – it does negatively affect their wages at 30th, 40th and 50th percentiles. Finally, for women at the upper

part of the distribution (80th and 90th percentiles) working part-time has a positive effect on their wages

While most of the variables follow a similar pattern of effect for both women and men, the coefficients of each and every variable at the upper part of the distribution for men are higher than those for women. That determines the existence of the glass ceiling effect – men receive more or are punished less for the same characteristics than women would be.

Table 5. Regression results for men at all percentiles of interest

	10	20	30	40	50	60	70	80	90
Age	0.026	- 0.090 ***	- 0.266 ***	- 0.488 ***	- 0.401 ***	- 0.324 ***	- 0.240 ***	- 0.102	0.399 **
	(0.01)	(0.02)	(0.03)	(0.03)	(0.05)	(0.04)	(0.05)	(0.07)	(0.13)
Level of education	0.287 ***	0.603 ***	1.057 ***	1.935 ***	2.365 ***	2.623 ***	3.188 ***	4.270 ***	6.088 ***
	(0.03)	(0.04)	(0.05)	(0.09)	(0.09)	(0.10)	(0.12)	(0.19)	(0.30)
Sector	0.271 ***	0.061	- 1.282 ***	- 2.050 ***	-1.257 ***	- 0.414	1.135 ***	2.928 ***	7.098 ***
	(0.06)	(0.08)	(0.13)	(0.16)	(0.21)	(0.22)	(0.25)	(0.31)	(0.57)
Size of the firm	1.350 ***	1.842 ***	2.496 ***	3.279 ***	3.454 ***	3.122 ***	3.112 ***	3.275 ***	4.226 ***
	(0.03)	(0.04)	(0.05)	(0.07)	(0.08)	(0.08)	(0.09)	(0.14)	(0.26)
Work experience	0.008 **	0.031 ***	0.083 ***	0.156 ***	0.181 ***	0.200 ***	0.210 ***	0.237 ***	0.176 ***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.03)
Occupation	- 0.311 ***	- 0.622 ***	-1.092 ***	-1.799 ***	-2.141 ***	- 2.279 ***	- 2.712 ***	- 3.757 ***	- 6.726 ***
	(0.02)	(0.03)	(0.04)	(0.06)	(0.05)	(0.06)	(0.07)	(0.13)	(0.21)
Employment status	1.407 ***	2.605 ***	2.357 ***	3.086 ***	2.589 ***	2.068 ***	1.901 ***	1.813 ***	1.837 ***
	(0.10)	(0.10)	(0.14)	(0.18)	(0.17)	(0.17)	(0.19)	(0.26)	(0.53)
R-squared	0.11	0.13	0.22	0.28	0.18	0.10	0.15	0.11	0.14
N	22 586	22 586	22 586	22 586	22 586	22 586	22 586	22 586	22 586

Note: *, ** and *** mark the statistical significance at 10, 5 and 1 per cent level, respectively. The parentheses contain the bootstrapped standard errors with 100 replications. The regressions also include 15 dummy variables to control for industry.

4.3. Discussing the potential determinants

As it was discussed in the first chapter of this thesis, the emergence of the glass ceiling cannot be easily attributed to one determinant – it is rather an interplay between many social,

psychological, cultural, and structural factors. The reasons behind the phenomenon seem to be complex in the Lithuanian labor market as well.

To begin with, a survey study conducted by Dromantaitė-Stancikienė and Gineitienė (2010) indicates that 10% of respondents believe that customs, traditions, stereotypes, and patriarchal structure are responsible for the general gender inequality in Lithuania. Indeed, the Lithuanian society is still structured in a way that largely follows patriarchal norms and traditional gender roles, which in turn produces gender stereotypes that manifest themselves in the labor market as well (Paulauskas, 2017). The studies show that Lithuanian employers tend to be prejudiced against women, believing that women are not suitable for leadership positions because they are too emotional, irresolute, and indecisive, might be too soft to be able to manage a team, or familial matters might prevent them from committing fully to work (Dromantaitė-Stancikienė & Gineitienė, 2010; Šidlauskienė & Pocevičienė, 2015; Šidlauskienė, 2005). These prejudices might make the employers less willing to hire or promote women to the positions of power, in that way contributing to the existence of the glass ceiling in Lithuania.

From a perspective of the policy environment, Lithuania has a long history of generous maternity and childcare leave policies which, as suggested by Mandel and Semyonov (2006), might have a strong effect on the emergence of the glass ceiling. During the last thirty years of independent policy making, the policy on childcare leave has been amended various times, mostly due to the political sensitivity of the matter, nonetheless, the childcare leave in Lithuania has remained extensive, even in comparison to other more developed welfare states (Stankūnienė, 2018). The changes in compensation for and duration of childcare leave are depicted in *Figure 3*. Following the last amendment to the law enacted in 2019, the amount of compensation a parent receives reaches 77.58% and 54.31% of their previous earnings for the first and second year of the childcare leave, respectively (SoDra, 2019). A parent would also

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be allowed to take the third year off with the obligation from their official workplace to keep the job position secured till they come back to work, however, no financial compensation would be provided (SoDra, 2019). Thus, in total, a parent is allowed to withdraw from the labor market for up to 3 years upon the birth of the child, making Lithuania's maternity leave policy one of the most generous among other welfare states, especially in terms of duration.
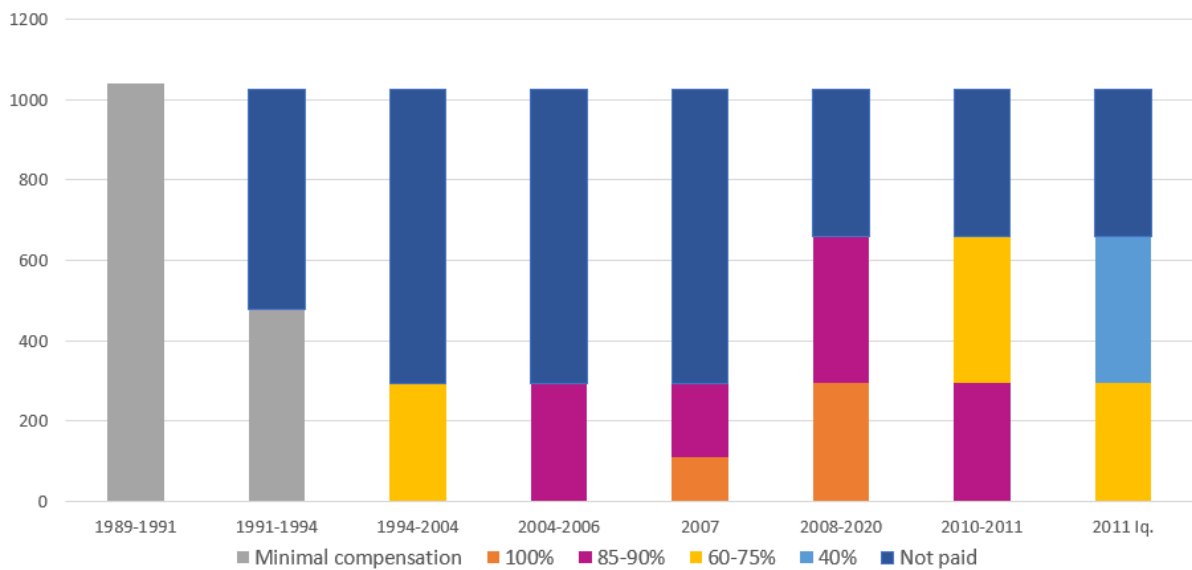

Figure 6. Variation in childcare leave policies 1989-2011
Note: the data is taken from Stankūnienė (2018), Lithuanian Labor Code and Lithuanian Laws. Vertical axis indicates the duration of childcare leave in days.

It is important to note that while either one of the parents are legally allowed to take the childcare leave, fathers rarely decide to do so. For instance, in 2014, only 17.6 % of all parents who took parental leave were men. This number increased to 20.5% in 2016, however, it is still mostly women who withdraw themselves from the labor market to take care of the newborn children (Brazienė & Vyšniauskienė, 2019). Given that this withdrawal may last up to 3 years, it is very likely that, just as Mandel and Semyonov (2006) suggested, the employers are reluctant to promote or hire women to elite positions. It might be especially true if these positions require learning firm specific skills and the process of acquiring these skills is costly for the firm in terms of time and resources - which holds for most of the desirable positions. In

addition, the employers might assume that every woman is likely to become a mother in the future and leave the labor market for up to three years, which might prevent hiring women to these positions in the first place. Therefore, extensive childcare leave might indeed be an important contributor to the glass ceiling in Lithuania.

Furthermore, since women in Lithuania are the primary caretakers of children and elderly (as mentioned in the second chapter, women are twice more likely than men to be taking care of their family members), the lack of favorable conditions to reconcile between work and family might as well disrupt their career advancement opportunities (Paulauskas, 2017). These favorable conditions that are missing in the Lithuanian labor market include scarcity of institutions that would provide day care for children, elderly or disabled individuals, or absence of possibility to work flexible working hours. Ironically, 19% of women in Lithuania are allowed to take an hour or two off during their working day to take care of personal or familial matters in comparison to 21% of men (EIGE, 2018). Thus, lack of policies that would provide for an easier balance between work and family responsibilities might as well be a factor preventing women from climbing the occupational ladder and contributing to the glass ceiling.

As for the corporate factors, there is very little research done in Lithuania on the determinants that might stem from within the organizations. One possibility that can be encountered in the existing literature suggests that lack of transparency in hiring and promotion procedures might exacerbate the glass ceiling effect in Lithuania as it allows the decision of who is going to be hired to be influenced by subjective factors, such as previously discussed gender stereotypes (Paulauskas, 2017; Šidlauskienė & Pocevičienė, 2015). Finally, from the perspective of human capital theory, it was mentioned in the second chapter that while more women than men in Lithuania hold tertiary education, women and men are concentrated in different study fields, which might have an effect on them ending up in sectors that are lower paid.

To conclude, it seems that the biggest contributors to the glass ceiling in the Lithuanian labor market stem either from the policy environment or from the gender stereotypes that are still largely prevailing in the society.

Concluding Remarks

A considerable amount of academic studies that have analyzed the gender pay gap, focused on the mean of the pay distribution. Recently a new stream of literature, investigating the heterogeneity within the gender pay gap throughout the distribution, emerged, however, the studies have been mostly centered around the Western periphery. Given the lack of research beyond the conventional scope, the fact that due to the complexity of the phenomenon different labor markets tend to produce divergent outcomes, thus, individual case studies are needed, and the importance of understanding the nature of the pay gap to be able to tackle it from the policy perspective, this thesis analyzed the Lithuanian labor market, which has never been extensively studied before. It raised the following question: *Is there a glass ceiling or a sticky floor in the Lithuanian labor market and, if yes, what is the discovered pattern determined by?*

In order to answer the research question, the thesis employed unconditional quantile regressions for the data set provided by the Lithuanian department of Statistics for the year 2014. The empirical analysis suggests no proof for the existence of the sticky floor effect in Lithuania, nonetheless, there is evidence of the glass ceiling. The findings also demonstrate that the gender pay gap throughout the entire pay distribution can be attributed not to the observable pay determining characteristics of the employees but rather to the returns to these characteristics. Since the size of the unexplained component is usually used to measure the discrimination in the labor market, the results suggest that it is the discriminatory factors that are mostly responsible for the gender pay gap in Lithuania. Finally, the discussion of the determinants of the glass ceiling specifically in the context of Lithuania revealed that gender stereotypes prevalent in the Lithuanian society, extensive maternity leave, lack of favorable conditions to reconcile between work and family, and not transparent hiring and promotion

procedures within the organizations might be among the factors contributing to the existence of the phenomenon.

A few shortcomings that might have affected this study should be kept in mind when interpreting the final results. First and foremost, while the newest available data was employed in this research, it comes from the year 2014, whereas the situation in the Lithuanian labor market could have changed during the last six years, given such economic circumstances as the implementation of euro, even if that change would not be too significant. According to the information received from the Lithuanian Department of Statistics, the new data set for the year 2018 is to be released in December 2020. The revision of this study is strongly recommended once the new data becomes publicly available.

Second, due to the limitations of the data, neither the self-selection bias nor the potential issues of endogeneity, both of which are considered to be the problems that commonly arise in empirical studies of the gender pay gap, are not corrected for in this thesis. While many researches do not account for endogeneity due to the complexity of the potential solutions, self-selection bias is frequently taken into account and attempted to correct for. In the case of Lithuania, even though the labor force participation between women and men are close to equal, the selection to the labor market might still be influenced by factors that affect women more than men (or vice versa), for instance having small kids. Therefore, if the newly available data allows, it is highly recommended to account for the self-selection bias in the future research. Third, the data set that has been used in this research does not contain any information on respondent's marital or parenthood status, yet these variables might have an influence on the gender pay gap. Finally, while the thesis highlights the potential determinants of the existence of the glass ceiling in the Lithuanian context, more in-depth analysis should be conducted in order to be able to determine the exact causes underlying the phenomenon.

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Appendices

Appendix A

Outlier Check

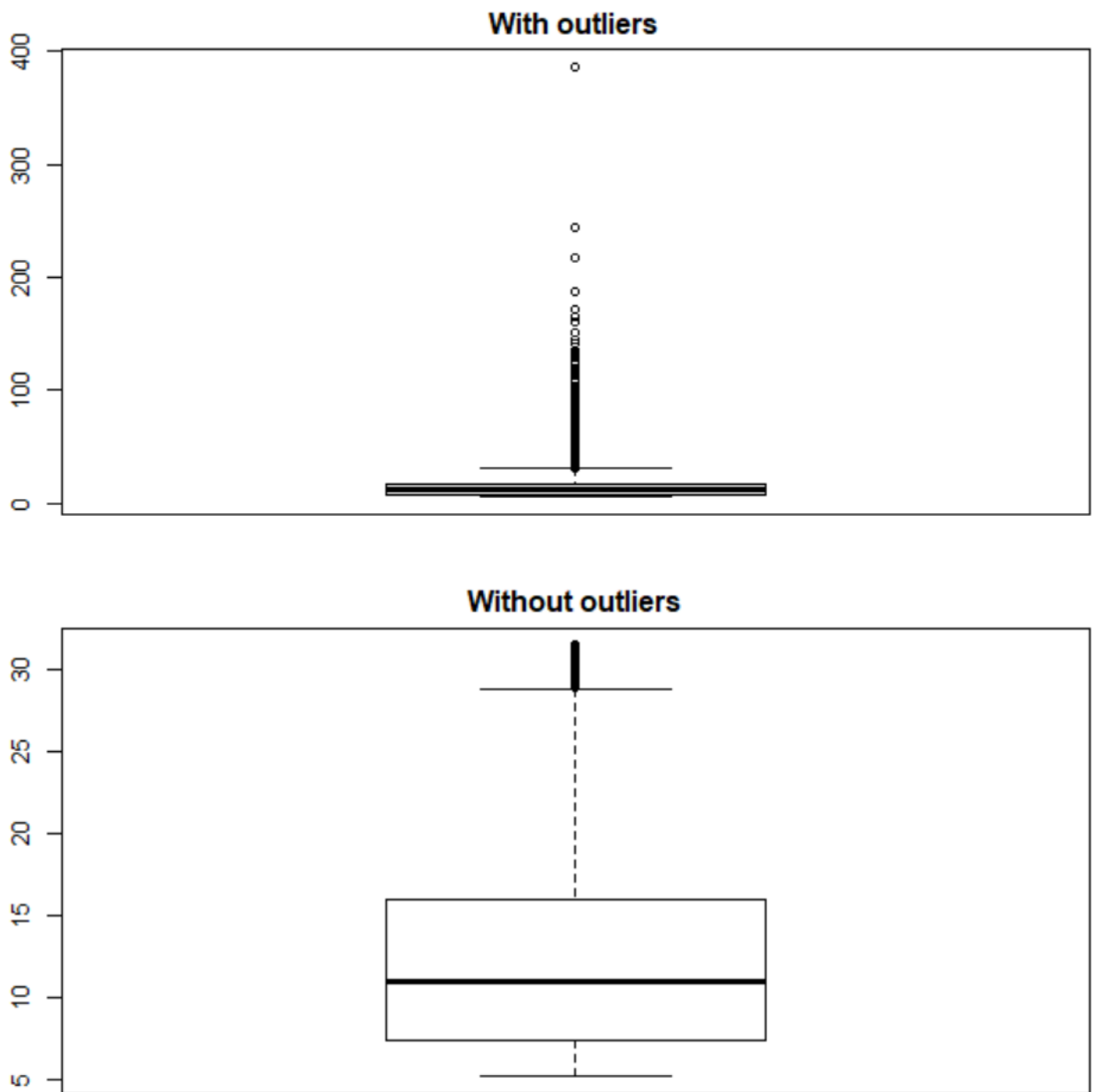*Figure A1*. The boxplots of the wage distribution before and after eliminating the outliers.

Figure A2. The wage distribution before and after eliminating the outliers.