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GENDER GAP IN PENSION INCOME: CROSS-COUNTRY ANALYSIS
AND ROLE OF GENDER ATTITUDES

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Gender Gap in Pension Income: Cross-Country Analysis And Role of Gender Attitudes

Anna Veremchuk[*]

Abstract

The aim of this paper is to study the gender pension gap in Europe based on the newest EU-SILC data from the 2018 wave. The contribution of the paper is twofold. First, it provides evidence on factors shaping the gender pension gap in a large number of EU countries. Second, it analyses the relationship between the pension gap and (1) the coverage of occupational (second pillar) pensions and (2) gender attitudes.

The main factor contributing to gender inequality in pension income is the number of years in employment. The influence of tertiary education is in the direction of increasing the gap, while the effect is the opposite when the hourly labour income gap is considered. The higher coverage of occupational pensions corresponds to a higher gender pension gap. This implies that the privatisation of pension plans can lead to the conversion of a wage gap into a pension income gap and reinforces women's disadvantage after retirement. In addition, a positive relationship is observed between unexplained portions of the pension income gap and the labour income gap. This could justify the hypothesis that unexplained portions are formed by the same factors persistent over time. One such factor could be gender norms; it has been found that countries with more gender equality support have lower unexplained portions of the labour income and pension gaps.

JEL Classification: D31, J16

Keywords: gender gap, pension, gender equality, gender attitudes

1. INTRODUCTION

In recent decades, the observed shift from industrial to post-industrial societies has been accompanied by significant changes in gender roles (Inglehart and Norris, 2003). These changes are reflected in higher rates of women obtaining tertiary education, participating in the labour force and being involved in politics. However, women's level of financial well-being is still lower compared to men's due to a large gender pay gap. The problem of gender discrepancy in wages has stimulated numerous studies (Blau and Kahn, 2017). Considerably less attention has been paid to the gender income gap after reaching retirement age, and only in recent years has the number of papers on this problem started to increase (Bonnet et al., 2016).

The growing popularity of the gender pension gap as a topic is related to changes in conjugal behaviour and greater labour market attachment among women (Bonnet and Geraci 2009). Previously, it was believed that gender equality in retirement is achieved because the majority of women were viewed as wives, who shared their husband's benefit and after the spouse's death received a survivor's benefit (Ponthieux and Meurs 2015, Bonnet and Geraci 2009). As mentioned in Ponthieux and Meurs (2015), the limitations of this approach became evident when the share of single women in retirement who cannot rely on a survivor's benefit started to increase due to higher divorce rates and the higher share of unmarried women. This was accompanied with the growth in women's labour market participation rates and declining fertility rates. Creating new challenges for pension systems, this brought the problem of the pension gap and the accrual of pension rights by women into focus for researchers (Ponthieux and Meurs 2015, Bonnet and Geraci 2009). Attention was reinforced when studies showed that older women have a greater risk of poverty and social exclusion compared to men in all EU states (Pension Adequacy Report, 2018). Another cause is that the process of reforming pension systems in response to demographic shifts has not yet concluded and requires research results to create fairer but financially sustainable pension schemes.

Due to the relative novelty of the topic, the range of literature devoted to gender discrepancies in pensions is not large (Ponthieux and Meurs 2015, Jefferson 2009). Moreover, the scope of studies is usually limited to one (e.g. Kuivalainen et al. 2018 considered the situation in Finland) or a few countries (e.g. Möhring 2018). To the best of the author's knowledge, there are only a few papers in which the situation across all EU countries is analysed (Bettio et al. 2013, Tinios et al. 2015, Burkevica et al. 2015, Chłoń-Domińczak 2017, Pension Adequacy Report, 2018). One of the obstacles to enlarging the set of countries in a study is that pension systems in the EU remain quite different. To simplify the discrepancies between pension schemes, researchers can use typologies such as the divisions into Beveridgean and Bismarckian pension systems. Belonging to one typological group does not mean that the economic outcomes of the different pension schemes belonging to the same group will be similar (Frericks et al. 2006). Consequently, when all EU countries are included for analysis, the peculiarities of pension systems receive less attention. However, this more superficial style of analysis, without delving into the details of the pension systems, does not devalue the research findings. Studies conducted in the EU have shown the gender pension gap is even larger than the gender pay gap (16%, Eurostat[1], EU-27, 2012), reaching the level of 38% in 2012 (Burkevica et al. 2015). Furthermore, while in the majority of countries access to pensions is almost equal for men and

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[1] Data from Eurostat table "Gender pay gap in unadjusted form": https://ec.europa.eu/eurostat/databrowser/view/tesem180/default/table?lang=en. As mentioned in Eurostatat database: "Gender pay gap in unadjusted form represents the difference between average gross hourly earnings of male paid employees and of female paid employees as a percentage of average gross hourly earnings of male paid employees".

women, the gender gap in pension coverage rates in Spain and Malta is 28 p.p. and 37 p.p. respectively (age 65 – 79, Tinios et al. 2015).

The aim of this paper is to study the gender pension gap in Europe based on the newest EU-SILC data from the 2018 wave. The contribution of the paper is twofold, first it provides comparative evidence on the gender pension gap in a large number of countries, and second, it studies the role of occupational pension coverage and gender attitudes. The main hypotheses in this study are as follows.

(1) The main variable contributing to the difference in pension income between men and women is number of years of employment.

(2) In countries with greater use of occupational pension, the gap is higher due to a tighter link between labour income and pensions.

(3) In societies with higher support for gender equality, the pension income gap will be lower.

As in Bettio et al. (2013) and the Pension Adequacy Report (2018), Oaxaca-Blinder decomposition is performed, but the scope of the analysis is enlarged to cover all EU countries (including the new EU Member States, and Central and Eastern Europe countries) and four non-EU states. The idea of analysing the relationship between gender pension and wage gap at "one time point", offered by Bettio et al. (2013), was also adopted in this paper. This relationship was considered in two groups: Central Eastern Europe and Western Europe, with a subgroup of Western countries that introduced a mandatory second pillar before 1990. As in Bonnet et al. (2016), the gender pension gap is analysed over the distribution of pensions using the unconditional quantile regression approach offered by Firpo et al. (2009) in addition to the traditional Oaxaca-Blinder decomposition. The difference between this paper and the work by Bonnet et al. (2016) is in scope, while Bonnet et al. (2016) only considered the situation in France, this paper considers all EU countries and four non-EU states (Iceland, Norway, Serbia and Switzerland). Another difference is in the data source, while Bonnet et al. (2016) based their research on administrative data, here the EU-SILC data set is used.

Furthermore, the relationship between the gender pension gap and occupational pension coverage is also investigated. The shift from PAYG to three-pillar pension systems primarily started in EU countries at the end of the 90s and beginning of the 2000s. One of the components of these shifts towards privatisation is the greater importance of the second pillar, related to occupational pensions (Frericks et al. 2007, Zanier and Crespi, 2015). As occupational pensions are related to the working income of a person, it could be expected that a tighter link between labour market outcomes and pension income could lead to greater gender inequality after retirement. This hypothesis is tested at the country level, calculating correlations between the coverage of occupational pensions for people 65+ and the gender pension gap.

In the final stage of the analysis, the relationship between the gender pension gap and attitudes towards gender equality is considered. To the best of the author's knowledge, there are no studies published in which such a relationship is analysed. The idea that gender attitudes can influence economic outcomes is relatively new in economics, at least in descriptive economic studies; for example, the gender identity concept was introduced by Akerlof and Kranton in 2000. In line with Akerlof and Kranton (2000), the main assumption in this paper is the following: the gender norms prevailing in society shape the gender identity of individuals, and, in turn, influence the desired wages and working hours, and subsequently, economic outcomes. This implies that in countries where gender equality is more supported, the gap in earnings and

pension incomes is smaller. The first aim in considering this relationship is to identify whether the data supports this assumption, at least after an initial glance (as no historical context or retrospective relationships are considered). Second, if the expected correlations are found between gaps in earnings and pension income and attitudes toward the role of women in family life and the labour market, this could support the importance of providing policies aimed at changing gender stereotypes. As Borgonovni and Frey (2017) mentioned, this could be expressed in creating initiatives for women to enter STEM specialisations or supporting men's parental leave that subsequently could influence the dominant attitudes in society. It also highlights the need to not limit the monitoring of the gender equality situation only to economic indicators (Schnepf 2006).

Gender pension gap decompositions have showed that the main factor shaping inequality between men and women is number of years in employment. It has also been found that higher occupational pension coverage corresponds to a larger pension gap. The positive correlation between unexplained portions of labour income and the pension income gap could justify the hypothesis that these unexplained shares are formed by the same factors. One such factor could be the acceptance of gender equality in society, as gender norms influence labour market behaviour in women. It has been found that in societies with a higher level of gender equality support, the unexplained portion of the gender pay gap is smaller. Additionally, a higher level of gender equality acceptance corresponds to a lower pension income gap.

This paper is organised as follows. In the next section a literature review and the context of the research is provided. Section 3 introduces the methodology. In Section 4 the description of the data is presented. Sections 5 and 6 are devoted to summarising the main results of the data analysis and the conclusions are presented in Section 7.

2. BACKGROUND TO THE STUDY AND RELATED LITERATURE

2.1. Recent reforms and current pension systems in the EU

Starting from 2000, the majority of EU Member States have been conducting pension reforms in response to increasing dependency ratio as a result of the ageing population and falling fertility rates (Carone et al. 2016). These reforms include increasing the retirement age and contribution years, decreasing possibilities for early retirement, the price-adjustment of pensions (instead of wage-adjustment) and the adjustment of the pension age / benefits to life expectancy (Carone et al. 2016, Frericks et al. 2007). The most important change has been the privatisation of pension schemes, with personal earnings and contributions playing a larger role, and consequently, a greater threat of reproducing the gender wage gap in retirement incomes (Ebbinghaus and Neugschwender 2011). Privatisation is reflected in the reduction of the importance of the first pillar (aimed at poverty reduction through providing a minimum income) and greater importance of the earnings-related second pillar (aimed at guaranteeing adequate replacement rate) and the third pillar (personal voluntary savings[2] aimed at supporting relatively high replacement rates) (Frericks et al. 2007, Zanier and Crespi, 2015).

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[2] As pointed out by Lannoo et al. (2014), the voluntary pension scheme (that contrary to ordinary savings could be subject to a tax rebate) could be an alternative to the pension provided under the second pillar for people with a short employment history (e.g. immigrants) or for self-employed; in Denmark, for example, both the second and the third pillar can merge, as voluntary contributions from workers can be transmitted to the second pillar.

Ongoing reforms are affecting women and men in a different way due to their distinct employment patterns. For example, raising the minimum number of years needed to receive the minimum pension puts women at risk of not being able to accumulate enough pension rights (if no child credits are provided) due to interruptions in their careers and generally shorter length of careers compared to men (Ponthieux and Meurs 2015). Today, we can argue that the introduction of the three-pillar system and the equalisation of the retirement age for men and women has not eliminated the gender pension gap. Additionally, the effect of the reforms depends on the institutional and cultural context, as well as on the pension systems active in the country.

Women's labour market behaviour is shaped by two interrelated factors: social policies and cultural factors. Social policies are reflected in public childcare services, length of parental leave and amount of social transfers. In Scandinavian countries, the dominant dual-earner gender policy model is aimed at creating opportunities for women to combine child rising with career through providing childcare services for the smallest children and earnings-related maternity leave (Korpi 2000, Orloff 2002). In Western/Central Europe the general family support model, or bread-winner model, prevails with tax benefits (deductions in taxable income/taxes) imposed for the non-working parent and a comparatively lower level of care services for small children (Korpi 2000).

The effect of social policies on economic outcomes is moderated by cultural factors (Budig et al. 2012). Cultural factors include the values, norms and gender attitudes accepted in a particular society in relation to working mothers. In recent decades, gender attitudes regarding women's and men's role at work and in the family shifted towards a higher level of egalitarianism (for US research, see Donnelly et al. 2015). As mentioned in the introduction, in this paper it is assumed that gender identity, reflected in the gender attitudes that a person supports, influence economic outcomes, including participation rates among men and women in the labour market, desired, and subsequently, received wages, and amount of working hours. As all these effects accumulate during the course of a life, this results in observable differences between lifetime earnings for men and women and, in turn, their pension income.

Historically, European pension systems can be divided into Beveridgean and Bismarckian. Beveridgean systems are aimed at preventing poverty, while Bismarckian systems are targeted at helping people to maintain the lifestyle and living standards they have become used to after retirement (Lannoo et al. 2014, Neugschwender 2016). In the Beveridgean system, the pension benefit is guaranteed for each citizen and is independent of profession or earnings (flat-rate pension); under the Bismarckian system, the pension is related to previous personal earnings and a minimum pension is provided for people with weak attachment to the labour market (Lannoo et al. 2014, Neugschwender 2016). The Beveridgean system has been followed in different versions in Denmark, Ireland, the Netherlands, the UK and Finland, while the Bismarckian system is widespread in Germany, Belgium, Sweden, France and southern European countries (Lannoo et al. 2014, Neugschwender 2016)[3].

Another typology divides pension schemes into defined-benefit, defined-contribution and a mixture of both. Under a defined-benefit scheme, the pension benefit is calculated based on a

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[3] It should be mentioned, that assignment of country to particular system depends on whether the author uses 2-classes typology or single out more groups. For example, according to Meyer (2017), who singles out two groups, Estonia belongs to Bismarckian pension system. Filgueira and Manzi (2017) assign Estonia to the mixed group (Individual capitalization and PAYG; other groups: Beveridge, Bismarck, Individual capitalization, Mixed (Beveridge and Bismarck, include the Netherlands, Norway and Finland), Notional or Point System (Sweden, Italy and Poland)).

fixed formula that includes work experience and salary (Ponthieux and Meurs 2015). In a defined-contribution scheme, the pension benefit depends on how much is invested on the individual account in a fund and, subsequently, risks of pension adequacy are related to the performance of the pension fund (Lannoo et al., 2014, Ponthieux and Meurs 2015). Due to tighter links between contributions size/years and pension benefits, defined-contribution schemes can be considered less favourable for women (Crepaldi 2011). The same logic makes Bismarkian systems less attractive for women than Beveridgean (Crepaldi 2011).

Sometimes these typologies can conceal differences in economic outcomes. For example, Denmark and the Netherlands use a Beveridgean system as the basic pensions are based on length of residency and are unrelated to earnings. However, in Denmark, older people experience a higher risk of poverty than younger generations, while in the Netherlands, the situation is vice versa (Frericks et al. 2006). Additionally, an important role is played by childcare services. The study by Frericks et al. (2006) provides evidence that the lack of childcare facilities in the Netherlands results in interrupted careers and part-time employment; consequently, making it harder for women to meet the requirements for occupational pension entitlements.

There are only a few studies on the gender pension gap in EU countries. The first pension gap study with a sample consisting of all EU countries was conducted by Bettio et al. (2013). The research was based on the EU-SILC 2010 survey. It was found that the situation in the EU-27 is quite heterogeneous: in the EU the gender pension gap was 39% on the average and the highest values were observed in Western European countries such as Luxembourg (47%), Germany (44%), the UK (43%) and the Netherlands (40%). The difference was less than 10% in three countries: Latvia (9%), Slovakia (8%) and Estonia (4%). Replication of the same study two years later (Burkevica et al. 2015, Tinios et al. 2015) showed quite similar results: the gender pension gap was 38% in the EU-27 (and in the EU-28), the top-four countries with the highest gender gap was the same and the smallest gap was still in Estonia.

As Ponthieux and Meurs (2015) argue, the simple mean in an analysis of the gender pension gap can be misleading. The current population of retirees includes different cohorts with quite varying employment patterns, and this results in unequal earnings and pensions. When different cohorts are compared at one point in time, the higher share of women in older cohorts will be recipients of the survivor's benefit (Bettio et al. 2013).

To summarise, the process of reforming pensions systems in the EU has not finished yet, but the direction of the reforms towards lifetime earnings playing a greater role and equalising gender requirements for receiving the pension benefit will persist in the future. These developments could result in the gender pension gap becoming a more important topic in the future, as women still have lower earnings and less attachment to the labour market. Today, the number of papers devoted to this topic is growing and they provide evidence of ambiguous relationships between the pension and earnings gap.

2.2. Factors influencing the gender pension gap

Factors affecting the gender pension gap are related to women's career choices and career histories, as well as the institutional and cultural context. Due to the connection between pensions and earnings, the causes of the gender pension gap are quite similar to those that affect gender pay gap. Lower earnings among women is considered one of the possible causes of the gender pension gap (Bonnet and Geraci, 2009). However, as Bettio et al. (2013) showed, there is no simple interpretable connection between gender pension gap and gender pay gap. They found

that in countries with a gender pension gap lower than 27% in 2010,[4] the relationship is inverse (i.e. low level of pension gap corresponds to high level of pay gap), while in the remaining EU-27 countries and Norway the situation is vice versa (i.e. a higher pension gap corresponds to a higher pay gap). As the authors themselves mention, the problem of such a comparison is that both values are compared at one point in time, but they are related to different cohorts with dissimilar employment histories. Probably the most prominent case among EU-27 countries is Estonia, where the gender pay gap is the largest and the pension gap the smallest. This can be explained by the time lag and relatively recent introduction of the three-pillar system, in addition to low participation rates in private pensions even after the introduction of voluntary saving schemes (Bettio et al. 2013; Meriküll, Kukk and Rõõm, 2019). On the other hand, this "time lag" problem could not be considered as typical among Central and Eastern European countries as the pay gap is quite different across the countries in this region: for example, in Romania the pay gap was 3% in 2018, the lowest in the EU. The time lag means that we will observe the result of current changes in pension systems probably in 20 – 40 years, when the current young or middle-aged cohorts reach retirement age. This makes the analysis of the pension gap quite difficult, as historical data on the pay gap, gender attitudes or childcare provision can be unavailable.

Among other factors that could influence the gender pension gap, we can highlight women's employment pattern: lower participation rates, part-time employment, lower number of years in the labour market (Zanier and Crespi 2015, Ponthieux and Meurs 2015, Bonnet and Geraci, 2009, Burkevica et al. 2015). During the last several decades, the employment rate for women has increased substantially in Europe. This growth can be attributed to the higher educational level, higher remuneration offered to women, supply of care services for children and elderly people, the introduction of birth control pills, the rise of service jobs, shifts in attitudes towards working mothers accompanied by declining religiosity (Blau and Kahn, 2017, Becker, 1985). As time passes, some of these factors become less relevant in defining participation among women. For example, Vlasblom and Shippers (2004) showed that the effect of education is decreasing as differences in participation rates between low- and high-educated women shrinks. The relationship between labour force participation and cultural changes is not so obvious and, as mentioned by Blau and Kahn (2017), should not be considered as causal: it is not evident whether changes in gender attitudes lead to higher participation rates, or attitudes were transformed as a result of changes in women's employment patterns.

Although the employment rate has increased, the difference in employment rates for men and women who are 20 – 64 years old still exists. In 2018 in the EU-28, it was equal to 11.6 p.p., with the highest value in Greece (21 p.p.) and Malta (21.9 p.p.; Eurostat[5]). Generally, women opt for an adaptive strategy of entering and re-entering (after childbirth) the labour market (Lyberaki et al., 2011), creating breaks in their career path, which influences their future pension benefit. Tinios et al. (2015) compared pensions for women with different years in employment with men's mean pension and showed that the largest gap in the majority of EU states was observed in the group of women who were attached to the labour market for 0 – 14 years.

Giving birth to a child interrupts a women's career, sometimes leading to involuntary part-time employment or making women agree to lower paid full-time jobs when they return to the labour market. In labour economics, a negative relationship between children and women's wages is

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[4] These countries are CZ, DK, EE, FI, HU, LT, LV, MT, PL, SK (see Appendix 1 for country abbreviations list).
[5] Data from Eurostat table "Gender employment gap": https://ec.europa.eu/eurostat/data-browser/view/sdg_05_30/default/table?lang=en

usually referred to as the motherhood wage penalty (Blau and Kahn, 2017). As shown by Correll et al. (2007), the status of a mother per se can be the basis for discrimination. In their experimental study, participants were asked to evaluate the resumes of fictitious job candidates of the same qualification level with differences in parental status. They found that mothers were considered less competent and less committed than non-mothers and were offered a lower start salary. Bettio et al. (2013) showed that compared to the average pension for men in European countries,[6] there is a greater difference for women with children compared to childless women. According to the analysis conducted by Möhring (2018), having children reduces the retirement income of mothers, but the effect becomes insignificant after including variables related to employment. With the growth in those active on the labour market, the income of mother's increases to a lesser extent compared to childless women.

Another interruption to a woman's career may occur when taking care of elderly people. This is usually considered by the women themselves and their relatives as a "women's job" and their "obligation" (Begley and Cahill 2003, Ruiz and Nicolás 2018). When such an interruption to work happens at a pre-retirement age of 50+, this could become "a point of no return" (Zanier and Crespi, p.1193). Wakabayashi and Donato (2005) based on US longitudinal data showed that women taking care of relatives not living with them worked less hours and have a greater likelihood of leaving the labour force than non-caregivers. This problem is deepened by the fact that childcare credits[7] are offered in all EU countries[8], while credits for taking care of the elderly or ill household members are less widespread (Crepaldi et al. 2011). Credits are aimed at narrowing the gender pension gap, simultaneously creating an inactivity trap for women (Crepaldi et al. 2011). Möhring (2018) showed that generous care entitlements do not prevent a retirement income reduction for mothers, while a redistributive system (closer to universal basic pension provision) can balance the negative impact of having children.

When the provision of care should be combined with earning money and care services are not affordable, women have to work part-time (Fagan et al. 2014). Part-time employment is usually also mentioned as one of the factors related to the gender pension gap (Burkevica et al. 2015). Contrary to this, Lanninger and Sundström (2014) provided evidence from Nordic countries (Denmark, Finland, Iceland, Norway, Sweden) that working part-time for ten years for women with two children compared to uninterrupted full-time employment does not drastically reduce their pension. One important limitation of their analysis was that only two occupations (assistant nurse and elementary school teacher) were considered and the scope of the research was limited to Nordic countries. These results could be quite dependent on the particular pension system.

In order to explain the difference between outcomes on the labour market for men and women several theories have been developed. According to the Becker's human capital theory (1985), housework and taking care of children, which are usually women's responsibilities, reduce the amount of energy women can spend on working and make women choose less effort-intensive occupations that can be easily combined with household work. Lower productivity and lower investment in human capital results in lower hourly earnings. On the other hand, in his Nobel lecture in 1993, Becker claimed that changes in family life and labour market structure (higher divorce rates, growth of the service sector) have stimulated women to invest more in human

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[6] Countries considered: BE, CH, CZ, DE, DK, EL, ES, FR, IT, NL, SE.
[7] Definition from Crepaldi et al. (2011, p. 98): "Care credits are registered contributions based on periods spent out of employment taking care of children and other dependents (disabled or older persons)".
[8] For example, Denmark and the Netherlands do not provide care credits, as pensions are residency-based. So, it is considered that care credits are automatically covered.

capital, resulting in a declining gender pay gap (Becker, 1993). The theory of statistical discrimination (Phelps 1972) assumes that due to a scarcity of information about applicants and the high price of individual evaluation procedures, employers hire workers from the group that is expected to show more reliability, higher levels of qualification etc. Status-based discrimination theory is similar to the statistical discrimination approach, but includes the effect of cultural beliefs and a bias in favour of higher status groups (Correll et al. 2007). One such cultural belief is that mothers prioritise children rather than work duties. Consequently, employers will be less ready to offer them a job or promotions compared to having higher status non-mothers (Correll et al. 2007).

Akerlof and Kranton (2000) introduced the concept of "gender identity": individuals act according to cultural models of typical male and female behaviour to increase their utility, and, vice versa, if they violate these norms it leads to lower utility. For example, as Akerlof and Kranton (2000) state, a woman employed in a man's job results in ambiguous feelings and her presence undermines male co-workers' sense of masculinity (both parties here experience a loss of utility). Authors also reject Becker's theory (1985), arguing that when women work more hours than their husbands, they also spend more hours doing housework and this could occur because men experience a loss of utility doing "women's work". The desire to adjust the behaviour to the gender identity can lower the participation rate of women on the labour market, create occupational segregation and decrease women's wages (Akerlof and Kranton, 2000). Considering the role of gender attitudes in the sample of OECD countries, Fortin (2005) found a positive relationship between the gender pay gap and the gender gap in terms of agreement with the statement "when jobs are scarce, men should have more right to a job than women". Similarly, Lalive and Stutzer (2009) showed that the gender wage gap in Switzerland was narrower in regions with a higher share of citizens that support equal pay for the same work.

The abovementioned theories are usually used in explanations of the gender pay gap. When it comes to the gender pension gap, it is rather viewed through the concept of cumulative advantage and disadvantage, introduced at the beginning of the 1990s (Crystal et al. 2016). According to this hypothesis, the economic effects of lower attachment to the labour market, motherhood and lower wages accumulate during the life-course, reducing women's pensions and increasing the gap (Crystal et al. 2016). These effects can intensify over the life-course, increasing initial inequalities between women and men.

It should be mentioned, however, that solving the abovementioned problems will not lead automatically to a narrowing of the gender pension gap. For example, even when the difference in the number of years working is small, the gender pension gap can remain quite wide, larger than 25% (Kuivalainen et al. 2018). In recent decades, the growth in the number of women with higher degrees has not remedied the gender income and pension gap either. As shown by Skogen et al. (2018) in Norway, where the pension system is based on earning pension points that reflect years of work and the income earned, to achieve the same level of pension points men need to have a lower level of education and occupational prestige than women. Bardasi and Jenkins (2010) presented results of Gomulka-Stern and Oaxaca-Blinder decompositions of the gender gap in private pension incomes (occupational, personal pensions and annuities). It provided evidence that the gender gap in the probability of receiving the pension remains quite wide (reduced from 43 p.p. to 25 – 29 p.p.) when men and women are ascribed the same characteristics, while in the case of private pension income, the reduction is even less: almost the whole gap is due to the difference in returns (82% – 92%).

In summary, there are many different factors that could contribute to the disadvantage women experience after reaching retirement age. The most obvious are related to labour market performance, such as years of labour market experience. Labour market activity and earnings are shaped, in turn, by institutional factors (such as the provision of childcare services or rules for receiving maternity benefits) and social norms (reflected in gender identity). In this way the institutional and cultural context affects the pension income for women.

3. METHODOLOGY

The most common technique used when studying the gender gap in wages or retirement income is the Oaxaca-Blinder decomposition (Oaxaca 1973, Blinder 1973). In pension studies it has been used by Bettio et al. (2013) and Bardasi and Jenkins (2010). To conduct the standard decomposition of the gender gap in the average income, first, Mincer-type regressions are run (using OLS estimation) for two groups (men and women) (Fortin et al., 2011)[9] as follows:

$$Y_g = \beta_{g0} + \sum_{k=1}^{K} X_k \beta_{gk} + v_g \tag{3.1}$$

where β_{g0} denotes the intercept, g refers to the two groups (men and women) and Y represents the logarithmically transformed pension / hourly labour income and X_k refers to independent (explanatory) variables. The difference in average outcomes between the two groups can be divided in the explained ($\widehat{\Delta_X^\mu}$) and unexplained ($\widehat{\Delta_S^\mu}$) component (Fortin et al., 2011) as follows:

$$\widehat{\Delta_O^\mu} = \bar{Y}_M - \bar{Y}_W = \widehat{\Delta_S^\mu} + \widehat{\Delta_X^\mu} = \left[(\hat{\beta}_{M0} - \hat{\beta}_{W0}) + \sum_{k=1}^{K} \bar{X}_{Wk} (\hat{\beta}_{Mk} - \hat{\beta}_{Wk}) \right] + \left[\sum_{k=1}^{K} (\bar{X}_{Mk} - \bar{X}_{Wk}) \hat{\beta}_{Mk} \right] \tag{3.2}$$

where $\bar{Y}_M$ and $\bar{Y}_W$ – are the mean value of the logarithmically transformed income for men and women respectively, $\hat{\beta}_{M0}$ and $\hat{\beta}_{W0}$ – are the estimated intercepts from the regression equations for men and women, $\hat{\beta}_{Mk}$ and $\hat{\beta}_{Wk}$ – are the vectors of the estimated slope coefficients from the regression equations for men and women, and $\bar{X}_{Mk}$ and $\bar{X}_{Wk}$ – are the vectors of the mean values of the independent variables for men and women. The unexplained component can also be called the "structure" effect and the explained component can also be called the "composition" effect.

The explained component shows how much of the overall gap is related to differences between men and women in observable characteristics (independent variables, for example, number of years in the labour market etc.). The unexplained component shows how much of the overall gap is related to differences in coefficients (betas) for specific characteristics. In the specification described above, the decomposition will show (1) the explained part, i.e. gender differences in pension income, provided that men and women differ in characteristics, but both are paid on the basis of coefficients derived from the regression equation for men; (2) the unexplained part, i.e. gender differences in pension income, provided that men have the same characteristics as women, but different returns on those characteristics. The results of the decomposition depend on the weighting scheme used in the analysis: coefficients from the equation for men/women, the average of these coefficients or coefficients from the pooled regression.

An interesting argument regarding interpretations of Oaxaca-Blinder decomposition for the gender pension gap is highlighted by Bonnet et al. (2016): discrimination could not take place

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[9]Here and later in this section equations and variable explanations are cited according to Fortin et al. (2011).

in pension calculations which is an automatic gender-neutral process, meaning that retirement income should be the same for men and women with the same characteristics and, as a result, if all variables that play role in pension calculation are included in the analysis, the unexplained part should be eliminated. However, when using cross-sectional survey data, which was used in this paper, the unexplained share of the gap can be a result of unobservable characteristics; that is, variables that are not presented in the dataset such as wages, part-time / full-time employment and career history.

The analysis of the gender gap on the level of mean pensions can be insufficient as the distribution of pensions can be asymmetrical just like the distribution of wages. The unconditional quantile regression is applied to study the effect of explanatory variables on pension income at different points in the distribution. It is important to note that in the case of running an OLS, we obtain consistent estimates (β coefficients) of X's effect on the population of the unconditional mean of dependent variable Y (due to the law of iterated expectations, the expected value of the conditional mean $E[Y|X]$ over the values of X is equal to the unconditional mean $E[Y]$, that in turn equals $\beta * E[X]$ in the linear model) (Firpo et al. 2009). This property is quite important for running Oaxaca-Blinder decompositions. However, for a quantile regression, this property does not hold: the conditional quantile expectation is not equal to the unconditional quantile expectation, meaning that estimates from the quantile regression do not show marginal effects of independent variables (Firpo et al. 2009). To solve this problem, Firpo et al. (2009) offered an approach to unconditional quantile regressions in which estimates correspond to the marginal effects of the independent variables on the unconditional quantile of Y.

Firpo et al. (2009, 2018) developed an approach to the Oaxaca-Blinder decomposition based on recentered influence function (RIF) regressions. The RIF regression equation is estimated for each quantile. The difference between the RIF regression and the standard regression is that the dependent variable is replaced by the re-centred influence function of the statistics (Firpo et al. (2018)). The recentered influence function of the τth quantile (Firpo et al. 2009, 2018) is the sum of the distributional statistics used in the analysis (quantile, q_τ) and the influence function, and can be written as follows:

$$RIF(Y; q_\tau) = q_\tau + \frac{\tau - \mathbb{1}\{Y \le q_\tau\}}{f_Y(q_\tau)} \tag{3.3}$$

where Y – is the continuous random variable, in our case logarithmically transformed pension income; q_τ – is the τth quantile of the unconditional distribution of variable Y; $\mathbb{1}$ – is the indicator function: it equals 1 when the argument is true (i.e. Y is less than or equal to quantile q_τ, and 0 otherwise); $f_Y(q_\tau)$ – is the density of the marginal distribution of Y evaluated at q_τ.

Firpo et al. (2009) showed that transforming the dependent variable with the recentered influence function and regressing the modified variable on the set of independent variables (running OLS), it is possible to derive marginal effects. The Oaxaca-Blinder decomposition technique can be applied to estimates from the regression with RIF-transformed dependent variables. This approach was also used by Bonnet et al. (2016) for studying the gender pension gap in France.

4. DATA

This paper employs mainly a European Union dataset from the Statistics for Income and Living Conditions (EU-SILC) research. The EU-SILC study covers all the EU countries and four non-EU countries (see Table 1). For the majority of the countries, the latest data available is for 2018. For the analysis of the situation in Ireland, Slovak Republic and the UK, data collected in 2017 was used. The latest available data for Iceland is for 2016. As UK ceased its membership of the EU on 31 January 2020, it was included in the analysis and considered as part of the EU. EU-SILC data has previously been used for analyses of the gender pension gap by Bettio et al. (2013), Burkevica et al. (2015) and Tinios et al. (2015).

Table 1. Countries included in the analysis

EU	Austria, Belgium*, Bulgaria, Croatia, Cyprus*, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece*, Hungary, Ireland*, Italy, Latvia*, Lithuania, Luxembourg*, Malta*, Netherlands, Poland, Portugal*, Romania, Slovak Republic, Slovenia, Spain, Sweden, United Kingdom
non-EU	Iceland, Norway, Serbia, Switzerland

Note: * – countries for which EVS data is not available

One of the advantages of the EU-SILC data is the availability of detailed information on incomes at the personal and household level. It is possible to calculate income separately for men and women and single out pension income from the total income. Similar to previous studies on pension income based on EU-SILC data (Bettio et al. 2013, Burkevica et al. 2015, Tinios et al. 2015), in this analysis pension income was calculated as the sum of (1) pensions from individual private plans, (2) old-age benefits and (3) survivor's benefits. To consider the role of inter-household transfers in the gender pension gap, the amount of transfers (variable from the household dataset) was divided on the number of household members; that is, assuming that each household member gets an equal share of the transfers. The gender pension gap was considered in the group of retirees[10] who are 65+. This age threshold was previously also used by Bettio et al. (2013), Burkevica et al. (2015) and Tinios et al. (2015; group considered: 65 – 79).

In the estimation of the explained and unexplained share of the gap, the following explanatory variables were used:
(1) education: secondary and tertiary with primary used as a reference category;
(2) marital status: married, separated (separated or divorced), widowed with never married used as a reference category;
(3) number of years spent in paid work as employee or self-employee and number of years spent in paid work squared (because of quadratic relationship between experience and earnings influences pension income);
(4) share of private pension income (pension from individual private plans) in total pension income;
(5) dummy variable that takes the value 1 if age of respondent is 80 or higher, 0 otherwise, because it is possible that for people who are 80+ the pension benefit was calculated using other formulas compared to the group of people who are 65 – 79. Additionally, this group of people can include victims of WWII, that in some countries (such as Poland) could receive additional benefit unrelated to their employment;
(6) dummy variable that takes the value 1 if the respondent is an immigrant (based on variable year of immigration), 0 otherwise;

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[10] According to self-defined status "In retirement or in early retirement or has given up business".

(7) dummy variable that takes the value 1 if the respondent has a chronic illnesses, 0 otherwise;
(8) occupation (current or last job): managers, professionals, technicians and associate professionals, clerical support workers, service and sales workers, skilled agricultural, forestry and fishery workers, craft and related trade workers, plant and machine operators and assemblers, elementary occupations, and never worked as a reference category.

The main logic behind including these variables in the regression equation was to single out factors that could influence the pension income. Variables (1) – (5) were used by Bettio (2013) in a decomposition of the pension income gap in Germany, the UK, the Netherlands, France, Greece, Austria, Italy, Poland and Estonia. The variables occupation, immigrant status and chronic illnesses were added as factors that can influence lifetime earnings, and subsequently, pension income. Contrary to administrative data, EU-SILC does not include data on career and earnings history.

The calculation of the gender gap in pension incomes was accompanied by estimating the gap in the hourly labour income (using the same methodology as for the pension income), and also based on EU-SILC data. To calculate the hourly gap in wages, the following sources of income were summed: employee cash or near cash income, non-cash employee income and cash benefits or losses from self-employment.[11] The total labour income was then divided by the monthly number of hours worked at the main job and at a second / third job multiplied by the number of months spent in full/part-time work as employee/self-employed. As in the case of the pension income, to decompose the gap in hourly wages, two separate OLS regressions were run for men and women. The sample was restricted to respondents who spent at least 1 year in the labour market. The independent variables in these regression equations represent factors that could influence the hourly labour income of the respondent:
(1) dummy variable that takes the value 1 if the respondent has children who are up to 3 years old, 0 otherwise;
(2) dummy variable that takes the value 1 if the respondent is married or lives in a consensual union (with a legal basis and without it);
(3) education: secondary and tertiary with primary used as a reference category;
(4) dummy variable that takes the value 1 if respondent is not a citizen of the country, 0 otherwise;
(5) number of years spent in paid work as an employee or self-employee and number of years spent in paid work squared (because of quadratic relationship between experience and earnings);
(6) occupation (current or last job): managers, professionals, technicians and associate professionals, clerical support workers, service and sales workers, skilled agricultural, forestry and fishery workers, craft and related trade workers, plant and machine operators and assemblers with elementary occupations as a reference category;
(7) sector of employment (based on NACE Rev. 2 classification to letter level) with agriculture, forestry and fishing as the reference category;
(8) dummy variable that takes the value 1 if the respondent has a chronic illnesses, 0 otherwise;
(9) dummy variable that takes the value 1 if the respondent has a permanent employment contract, 0 if contract is temporary;
(10) dummy variable that takes the value 1 if the respondent has a managerial position, 0 otherwise.

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[11] After this, the values that are less than the 1st percentile (specific value for each country) were dropped. Also, observations with hourly income less than 1 EUR were dropped.

The second dataset used in this research is from the European Values Study (EVS, wave 2017 – 2018). EVS covers the majority of the countries included in the EU-SILC sample (see Table 1). The data from this survey was used to investigate the relationship between gender attitudes and gender earnings and the pension gap. The assumption about the existence of this relationship is based on the idea that the gender pension gap is a reflection of the gap between men and women in labour market outcomes (earnings and labour market participation). This gap as well as the earnings gap is a result of different patterns of behaviour in men and women, influenced by the desire to act according to social norms (Bertrand 2010, Akerlof and Kranton 2000). Social norms are reflected in the level of support for gender equality in society.

From this survey the following statements were used to scale countries based on the acceptance of gender equality:
(1) When a mother works for pay, the children suffer (v72);
(2) A job is alright but what most women really want is a home and children (v73);
(3) All in all, family life suffers when the woman has a full-time job (v74);
(4) A man's job is to earn money; a woman's job is to look after the home and family (v75);
(5) On the whole, men make better political leaders than women do (v76);
(6) A university education is more important for a boy than for a girl (v77);
(7) On the whole, men make better business executives than women do (v78);
(8) When jobs are scarce, men have more right to a job than women (v81).

For variables v72 – v78 the scale is from 1 – "agree strongly" to 4 – "disagree strongly", for variable v81 the scale is from 1 – "agree strongly" to 5 – "disagree strongly". Therefore, higher values correspond to greater support for gender equality in society. To scale countries, two indexes were constructed based on abovementioned variables and using a factor analysis. These indexes reflect the general acceptance of gender equality when it comes to the role of women in the family and on the labour market. Means of these indexes as well as the means of each variable were used in calculating Spearman correlations with the pension and earnings gap size between men and women in order to identify whether a small gender pension/earnings gap corresponds to higher acceptance of gender equality in society. Previously, relationships between the gender pay gap and the gender gap in agreement with the statement "when jobs are scarce, men should have more right to a job than women" were analysed by Fortin (2005).

5. DESCRIPTIVE AND DECOMPOSITION RESULTS

As the first step in the analysis, the average shares of pension income components in the total pension income were considered (Table A1.1). As expected, it was found that the largest share of pension income is formed by old-age benefits. For women, survivor's benefits are important in Croatia, Cyprus, Italy, Serbia and Slovenia, where they form approximately one fifth of the pension income for women. Inter-household transfers[12] do not significantly influence the economic situation for old-age retirees, as their share is almost negligible. It was decided to continue without including this variable in the pension income and to conduct the analysis in line with previous works on the gender pension gap in the EU.

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[12] Inter-household cash transfers refer to the amount of cash received regularly from other households or persons. They cover compulsory and voluntary alimony and child support, cash support from persons who are not members of the household and from households in other countries (Methodological Guidelines and Description of EU-SILC Target Variables, 2018 operation).

Before running the decomposition, the pension income as well as hourly labour income was transformed into a logarithmic form. To decompose the gender gap in the explained and unexplained part, the oaxaca8 package in Stata was used. This calculates the gap as a log difference in the mean predicted income of men and women. The largest pension gap was observed in Luxembourg (0.587 log points), Cyprus (0.533) and Germany (0.510; see Figure 1). In all countries where the gap is statistically significant, the difference favours men (the only country where an insignificant difference in pension income is observed is Estonia).[13] The largest gap in labour income is in Czechia (0.281), Cyprus (0.235), Austria and the UK (0.199 log points in both countries; see Figure 2). As it can be seen from the graph, there is no obvious relationship between the gap in hourly labour income and pension income: the Pearson correlation coefficient is low and insignificant (0.1535, p – value: 0.4017; see Figure 3). Here the problem of a time lag is definitely present because the gender and pension gap are considered at "one point in time". The best way to see whether the gender pay gap converges with the pension gap is to analyse the current pension gap and pay gap thirty years ago. On the other hand, (1) Eurostat data for the gender pay gap in unadjusted form is available starting from 2006[14] and (2) the gender gap is quite slow in changing if we consider correlations between values with a 12 year gap, for 2006 and 2018[15]. It was decided to split countries into three groups and consider the situation in more detail in these groups. It is clearly evident that countries with the longest history of a wage dependent second pillar have the strongest positive correlation between wage and pension income (see figures 3 and 4). This indicates that shifts towards a lifetime wage income dependent pension systems tightens the link between wage inequalities and inequality in pensions.

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[13] The unadjusted gender pension gap can also be measured as a percentage instead of the difference in means of logarithmically transformed pension income (Bettio et al., 2013):

$$\frac{mean\ of\ pension\ income\ of\ men - mean\ of\ pension\ income\ of\ women}{mean\ of\ pension\ income\ of\ men} * 100$$

Then after the decomposition, the shares of the unexplained and explained gap are calculated and multiplied by the unadjusted gender pension (in %). If the gap is measured in this way, the top countries with the largest gender pension gap are Cyprus, the UK and Austria (Figure A1.1).

[14] Data for 2002 is available only for half of the EU-28 member states: BG, CZ, IE, EL, ES, CY, LT, HU, NL, PL, RO, SI, SK, UK.

[15] The correlation in the pay gap in 2006 and 2018 in BE, BG, CZ, DK, DE, EE, ES, FR, CY, LT, LU, LV, HU, MT, NL, AT, PL, PT, RO, SI, SK, FI, SE, UK, NO is checked using Eurostat data (https://ec.europa.eu/eurostat/databrowser/view/sdg_05_20/default/table?lang=en): Pearson correlation is 0.8014, p-value is less than 0.0001, showing quite a strong relationship between the gap in 2006 and the gap in 2018.

Figure 1. Raw and unexplained gender gap in pension income, at the mean
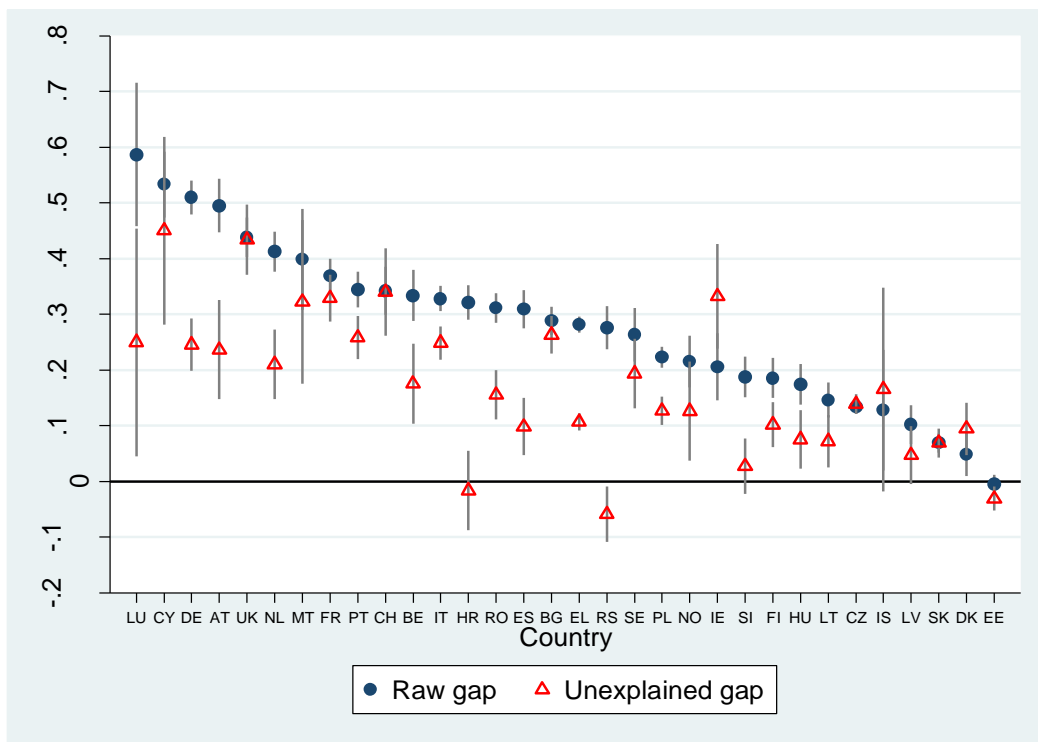
Source: EU-SILC 2018, 95% confidence intervals are shown

Figure 2. Raw and unexplained gap in hourly labour income, at the mean
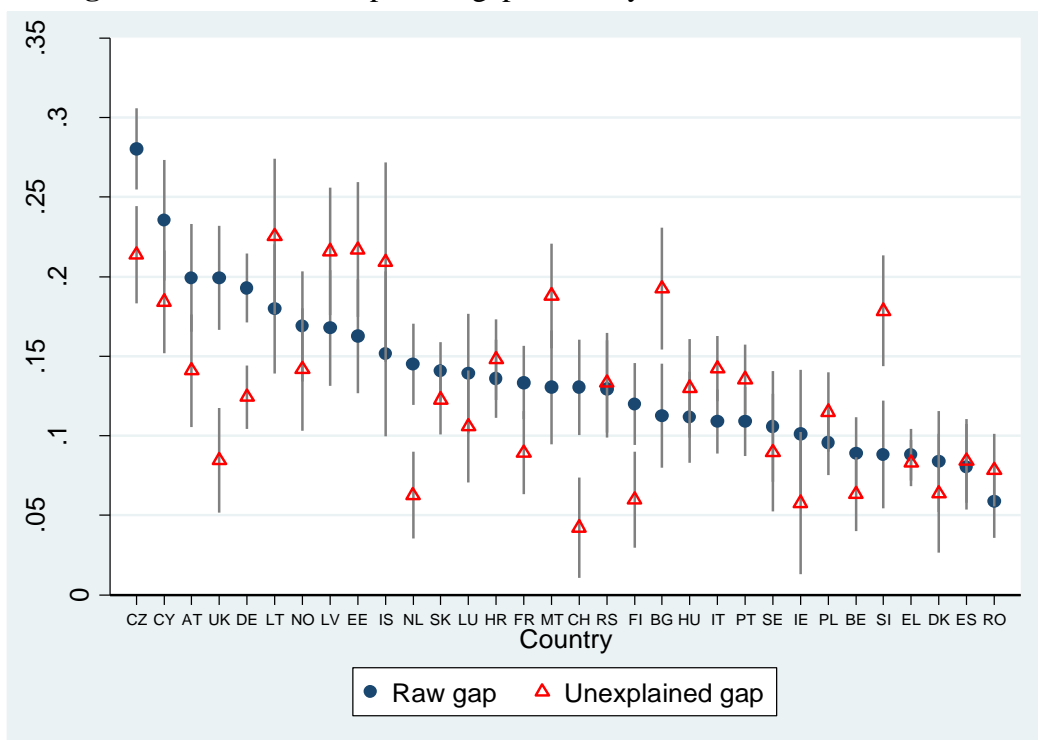
Source: EU-SILC 2018, 95% confidence intervals are shown

Figure 3. Raw gender gap in pension income and labour income, at the mean
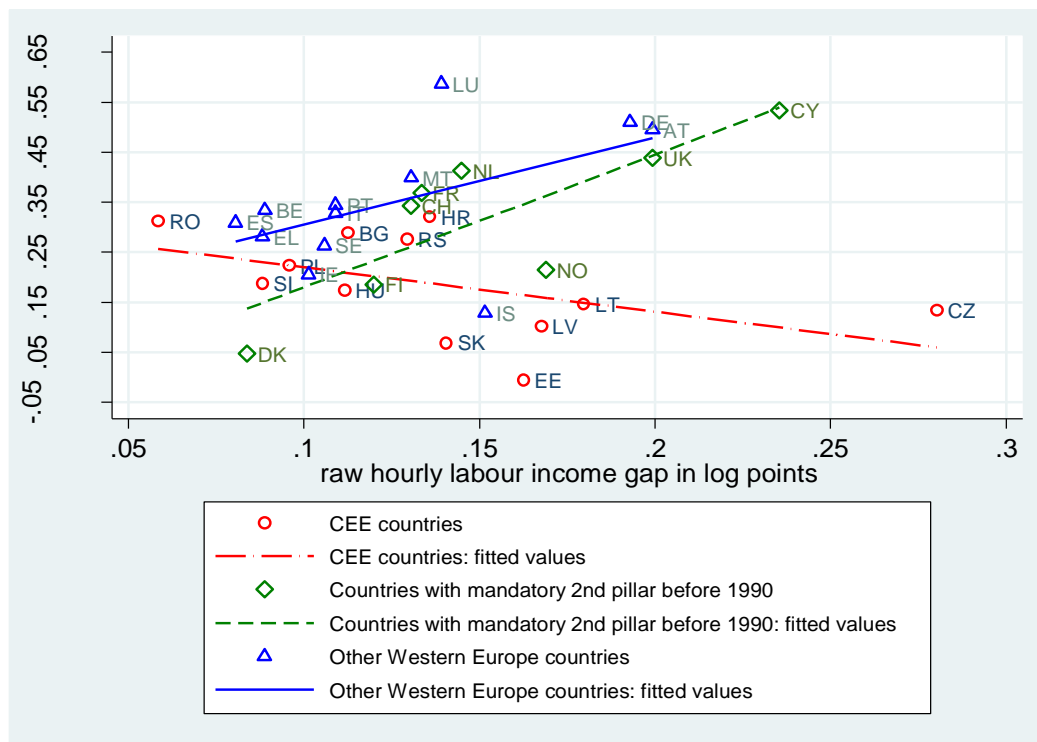
Source: EU-SILC 2018

Figure 4. Unexplained gender gap in pension income and labour income, at the mean
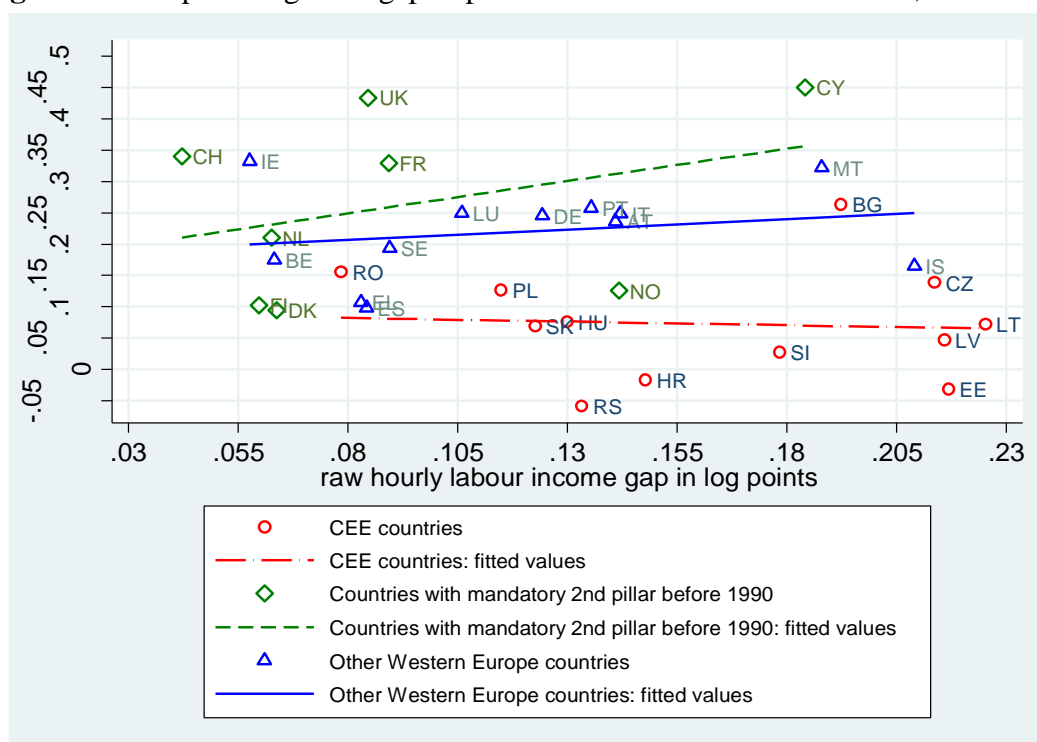
Source: EU-SILC 2018

5.1. CEE countries in which the private contributions were introduced after 1990

The first group is CEE countries: Bulgaria, Croatia, the Czech Republic, Hungary, Poland, Romania, the Slovak Republic, Estonia, Latvia and Lithuania, Slovenia, and Serbia. These countries are characterised by a similar past: all of them are former socialist states, where women's employment was stimulated by the communist party (will be discussed later in the section "Correlations between gender pension gap and gender attitudes"). The movement from PAYG to three-pillar system was implemented at the end of the 90s – beginning of the 00s (e.g. as mentioned in Poteraj (2008), Poland[16] introduced mandatory second pillar in 1999, Hungary in 1998). As Bielawska et al. (2017) highlight, mandatory contributions were made compulsory for new entrants to the labour market or for workers younger than a certain age (for instance, 42 in Bulgaria), while for older workers the contributions were voluntary (in Lithuania participation was voluntary for all workers). These countries are characterised by an inverse relationship between the gender pay gap and gender pension gap: the higher level of hourly earnings gap corresponds to the lower level of the pension gap (raw gap in means: Pearson coefficient is -0.4919, p-value: 0.1043, see Figure 3; unexplained gap in means: Pearson coefficient is -0.0626, p-value: 0.8468 [17] see Figure 4). This inverse relationship could be a result of the late introduction of second pillar occupational schemes that reduced the gap in pension income for current retirees. Thus, in the future, this gap in pension income could increase.

To analyse factors that form the gender gap in wages and in pension incomes, a decomposition analysis is performed (results are presented in Table A1.2, Table A1.3 and Table A1.4). When the gender pension gap is considered on the level of means, the main variable is the number of years in paid employment (an insignificant effect observed only in Czechia, Romania, Slovakia and Lithuania). Decomposition on the level of quantiles shows that the effect of years in employment disappears for high-income (sometimes even in middle income) groups. This could be ground for the assumption that increasing retirement age for women with the expectation that women will be employed on the labour market longer does not reduce gender inequality in middle and high-income groups. The effect of years in employment is generally in the direction of widening the gap. When it comes to considering the labour income gap in hourly earnings, the main drivers of the differences are years on the labour market, occupation, sector of employment and education. Only in Czechia and Slovakia has the explained share of the gap a positive sign; in the remaining countries assigning the returns for men to women results in a gap that favours women (i.e. with a negative sign).

In almost all countries, an important role is played by education in the gender pension gap: education widens the gap because the share of men with secondary / tertiary education is larger than the respective share of women in countries where the effect is significant. In all countries, except Bulgaria and the Baltic states, the effect persists even in high-income groups. When we consider the wage gap, the situation is different: while secondary education widens the gap (as the share of men with secondary education is larger than the respective share of women), tertiary education reduces the gap, as the percentage of women with tertiary education is larger (except in Czechia – the only country, where the effect of tertiary education is insignificant). This reduction in the gap due to tertiary education and significance of the effect of education

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[16] Later, Poland and Hungary withdrew from the second pillar (Altiparmakov and Matković, 2018).
[17] A similar result is obtained if the raw gap is calculated on the level of percentiles: Pearson correlation coefficient is -0.2272, p-value: 0.0180 (108 observations). For the unexplained gap Pearson correlation coefficient is 0.3310, p-value: 0.0005 (108 observations).

when we consider high pension income groups, highlights the importance of tertiary education for women in the EU.

As mentioned above, occupations play a more important role in the labour income gap than in the pension gap. The contribution of variables related to professional, clerical, service workers and technicians is negative due to the prevailing share of women in these jobs, while the contribution of variables related to craft and trade workers and plant machine operators is positive as mostly men are doing these jobs. Such a picture is not observed when we consider the pension gap: the overall effect of occupations is not large in explaining the gap and mostly in terms of widening it. For example, in Czechia and Poland the effect of "manager" occupation is towards increasing the gap because the coefficient for this occupation is positive and the share of men in this occupation is larger than that of women. When the gap is calculated after excluding people who never worked and elementary occupation is used as a reference category, the effect of the occupation variable changes. The variable "managers" widens the gap in all countries except Latvia, while the variable "professional" reduces the gap in the majority of states (as the share of women is larger than the respective share of men). In more than half of the countries, being widowed reduces the gap in pension income, while the effect of marriage (positive contribution) is significant only in three countries. When we consider the labour income gap, we see that in the majority of the countries the effect of being married or in a cohabitation is not significant. This could result in a lower impact of being married on the future pension gap. Taking into account the relatively late shift to the private pension system in CEE countries, the share of the private pension almost does not explain the gender pension gap (contribution is significant only in Czechia).

5.2. Countries in which the mandatory second pillar was introduced before 1990

Based on data provided in Poteraj (2008), OECD (2019), Holmøy and Stensnes (2008), the mandatory second pillar was introduced in the following countries before 1990: the Netherlands (1949), the United Kingdom (1961), France (1961), Finland (1962), Denmark (1964), Norway (1967), Cyprus (1980) and Switzerland (1985). The second pillar, also called occupational pensions, creates a tighter link between the pension income of the person and earnings because contributions are made based on labour income (Davies, 2013). These countries are characterised by a high correlation between the raw wage gap and the pension gap (when the gap is considered in means, the Pearson correlation coefficient is 0.8042, p-value: 0.0161) and a medium strength correlation of the unexplained share of the gaps (in means, Pearson correlation coefficient is 0.3379, p-value: 0.4129)[18]. This generally shows that the factors behind the unexplained share of the gap could be quite similar.

The only country in which years of employment does not influence the size of the pension gap is Denmark. In all other countries, the difference in average years of employment between men and women widens the gap (however, in Switzerland and Cyprus the overall contribution of years in employment and years in employment squared is negative). Similarly, the years in employment contribute positively to the hourly wage gap except for Denmark and Finland. As in CEE countries, tertiary and secondary education widens the pension income gap, but again we observe a reduction in the earnings gap, as tertiary education decreases the gap in hourly

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[18] When gap is considered on the level of percentiles (10th, 20th etc.), the correlation between raw gap becomes weaker (Pearson coefficient is 0.4694, p-value: < 0.0001, 72 observations), but the correlation between unexplained shares remains the same (Pearson coefficient is 0.2942, p-value: 0.0121, 72 observations).

earnings contributing to the earnings gap negatively. This negative contribution to the explained portion of the gap in earnings is a result of the higher share of women with tertiary education compared to the share of men. In the UK, the Netherlands, Switzerland and Finland, the widening effect of tertiary education on the size of the pension gap is significant over the whole distribution (on 20th/50th/90th percentile). In France, Finland, the Netherlands and the UK, occupation plays an important role in the pension income gap, with France being the only country in which the effect keeps its significance even in the high-income group. This does not correspond to the effect of occupations on the gap in earnings that is mostly insignificant (except for "managers"). It should also be mentioned that widowhood decreases the pension gap in all countries except Norway and Switzerland.

In sum, the number of years in employment and education play important roles in determining gender inequality in retirement in the countries in this group. While the positive (i.e. widening) effect of the number of years could remain in the future, it is quite possible that due to the higher representation of women in tertiary education, the effect of education will change in future in the direction of decreasing the pension gap.

5.3. Situation in the remaining countries

The next group includes the following Western European countries: Austria, Belgium, Germany, Greece, Spain, Ireland, Iceland, Italy, Luxembourg, Malta, Portugal and Sweden. These countries are characterised by a positive relationship between the wage gap and the pension gap, but the coefficient is lower than in the previously considered group (for the raw gap in means the Pearson correlation coefficient is 0.5228, p-value is 0.0811, for the unexplained share the Pearson correlation coefficient is 0.2118, p-value is 0.5087[19]).

As in other countries, the largest contribution to the gap is formed by years in employment. In Germany, Greece, Austria, Spain and Italy, the effect is significant on the 20th /50th /90th percentile of the distribution, showing that in all income groups the gap is related to labour market outcomes. In half of the countries, tertiary education widens the gap in the pension income (with the effect being significant over the distribution in Belgium, Greece, Italy and Luxembourg), while the effect on the gap in hourly earnings is towards a narrowing of the gap in the majority of the countries. This result is quite similar to the one previously obtained. Furthermore, in half of the countries, the inequality of men and women in terms of pension income is driven by occupations. When the gap in labour incomes is considered, the larger contribution to the gap in the majority of the countries is from the variable "sector of employment". In the majority of the countries, widowhood also decreases the gap in pension income, while matrimony widens it.

5.4. Correlations between occupational pension coverage 65+ and gender pension raw gap

In addition, the correlations between occupational pension coverage for people 65+ (in 18 countries from the sample) and the gender pension gap were also considered (see Table 2). The

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[19] This positive relationship keeps at the level of the quantiles: for the raw gap the Pearson correlation coefficient is 0.2744, p-value is 0.0041, 108 observations; for the unexplained gap the Pearson correlation coefficient is 0.2566, p-value is 0.0073, 108 observations. The Pearson correlation coefficient for the unexplained portion of the gap varies from 0.2566 to 0.3310. This definitely cannot be considered as a strong correlation but could be grounds for the hypothesis that some unobservable factors, persistent over time, shape the unexplained portion of the labour income and pension income gap.

hypothesis is that the privatisation of pension plans corresponds to the higher level of the gender gap in pension income because the gender earnings gap is converted into the gender pension gap. Data on occupation pension coverage rates is collected in the SHARE[20] survey. The calculated Spearman correlation coefficients showed that the higher gender gap in pension income corresponds to the higher share of people covered by occupational pensions (for the total gap in mean and gap on the 90th percentile the correlations are significant). Generally, this supports the idea that the introduction of mandatory second pillar contributions leads to higher inequality in the retirement income (Piirits and Võrk 2019), tightening the link between labour income and pensions especially at the top of the distribution, among high pension income recipients.

Table 2. Correlations between the gender pension gap and pension design

	Share of people covered by occupational pensions
Gender pension raw gap (total mean)	0.419*
Gender pension raw gap (20th percentile)	0.311
Gender pension raw gap (50th percentile)	0.340
Gender pension raw gap (90th percentile)	0.419*
N	18

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

6. CORRELATIONS BETWEEN GENDER INCOME GAPS AND GENDER ATTITUDES

6.1. Correlations between the gender gap in pension incomes and gender attitudes

As mentioned in the data section, to consider the relationship between gender attitudes and the gender pension gap, the EVS survey was used. The idea of the analysis is that gender attitudes in society could influence the market behaviour of men and women. The gender pension gap is a reflection of lifetime inequalities between men and women in their labour force participation and earnings. The hypothesis is that in societies with a higher level of acceptance of gender equality, women are more active on the labour market and demand equal pay with men, and subsequently, the pension gap will be smaller. Definitely this approach can be criticised, including the argument that it takes time to change gender attitudes and this is not taken into account: current retirees were taking their most important labour market decisions 30 – 40 years ago, but gender attitudes are considered from the 2017 / 2018 wave of the survey. The main problem is the absence of historic data on gender norms for the majority of the countries included in the analysis. However, gender attitudes, as other cultural variables, are changing quite slowly over time and transmitted from one generation to another (Donnelly et al., 2016). It could be expected that in societies in which gender equality is more accepted today, it was also more accepted 20 – 30 years ago.

To identify the relationship between gender attitudes and the gender pension gap, Spearman correlations were calculated between the gap in log points and means of gender attitudes at the national level. In addition, two Gender Equality Acceptance Indexes were constructed in order to capture the support for gender equality / inequality in each country. Inglehart and Norris

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[20] Survey of Health, Ageing and Retirement in Europe. To calculate the correlation, the values published in the "Pension Adequacy Report" (2018) were used (without any applicable values for CZ and EE coded as zeroes). Countries included in the analysis are SE, DK, NL, DE, BE, LU, FR, AT, ES, IT, EL, CZ, PL, SI, EE, HR, HU and IE.

(2003) have ranked countries based on the results of the WVS (World Values Survey) using similar gender attitude statements to those used in this paper.

To construct the Gender Equality Acceptance Index, the factor analysis was run on the whole set of gender attitude variables. The results of the factor analysis are presented in Table 3. Variables v72 – v75 were referred to as factor two, based on the higher factor loading, while the rest of the variables were referred to as factor one. Factor two could be interpreted as gender attitudes to the role of women in the family; factor one was interpreted as gender attitudes to the role of women on the labour market. Similar to Inglehart and Norris (2003), to construct the Gender Equality Acceptance Index, the values of the respective variables were converted to a 100-point scale and summed. The averages of the indexes and gender attitude variables are presented in Table A1.5.

Table 3. Factor loadings after running principal component factor analysis (varimax rotation)

Variable	Factor 1: attitudes to the role of women on the labour market	Factor 2: attitudes to the role of women in family
When a mother works for pay, the children suffer (v72)	0.154	0.843
A job is alright but what most women want is a home and children (v73)	0.292	0.733
All in all, family life suffers when the woman has a full-time job (v74)	0.149	0.867
A man's job is to earn money; a woman's job is to look after the home and family (v75)	0.527	0.621
On the whole, men make better political leaders than women do (v76)	0.830	0.211
A university education is more important for a boy than for a girl (v77)	0.791	0.201
On the whole, men make better business executives than women (v78)	0.863	0.158
When jobs are scarce, men have more right to a job than women (v81)	0.608	0.352
% of total variance explained	52.7	15.5
Cronbach's alpha v72 – v75 (Factor 2)	0.837	
Cronbach's alpha v76 – v81 (Factor 1)	0.800	
N	36 610	

Source: EVS, grey colour indicates higher factor loadings for each variable

The results of the Spearman correlations (Table A1.6) show that a higher level of support for gender equality corresponds to higher average pension incomes for both men and women. In most cases it is found that there are no significant correlations between the unexplained share of the gender pension gap and support for gender equality. Additionally, positive signs of correlation coefficients (i.e. higher levels of support for gender equality correspond to a greater pension gap) complicate the interpretation. In an attempt to tackle the problem of interpretation, in the first step, the age group was limited to people 50+ in considering average gender attitudes in order to try to take into account cohort differences in gender attitudes.[21] However, this did not influence the sign of the coefficient (except in variable v74).

In the final step, former socialist republics were excluded: Hungary (was a socialist republic 1949 – 1989), Poland (1945 – 1989), Romania (1947 – 1989), Czech Republic and Slovak Republic (former Czechoslovakia, 1948 – 1990), Bulgaria (1946 – 1990), Estonia (1940 –

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[21] The threshold 50+ was taken with the aim to keep sample of reasonable size and with the assumption that gender attitudes will be similar in parents – children generations: people 70+, who were born in 1948 or earlier and spent 20 or more years of their live in labour market during socialist regime, and their children who are now 50+ but spent only a few years in socialist labour market.

1990), Latvia (1940 – 1990), Lithuania (1940 – 1989), Croatia, Serbia and Slovenia (as former socialist republics of Yugoslavia[22]). It could be expected that in these countries the relationship between gender attitudes and the market behaviour of women could be disturbed by party-state policies aimed at increasing women's employment in the labour market in an attempt to achieve high levels of economic prosperity. These policies include propaganda campaigns and the policy of compulsory employment for women in the post-war period (Jarska, 2014, Gal and Kligman 2000). Accompanied with low income levels among men that were insufficient to support the whole family, this resulted in very high employment rates among women (e.g. by the 1980s in Czechoslovakia it was higher than 90%, as described by Kürti and Skalník, 2009). If we consider women who are 50+, the share of women in these post-socialist countries who support attitudes of gender inequality is higher than in Western Europe (Table A1.7), showing a lack of correspondence between employment behaviour and gender attitudes. After excluding the former socialist states from the sample, the coefficients become mostly significant and with a negative sign, showing that higher levels of support for gender equality among people who are 50+ corresponds to a lower total gap in pension income and the unexplained share of the gender pension income gap (Table 4 and Table 5). The effect remains if the unexplained share is considered at the 20th and 50th percentile level of the pension income distribution (see Table 4). However, for the high-income groups (90th percentile) the effect becomes insignificant (when the unexplained gap is considered as well as the raw gap).

It is possible to argue that gender attitudes in the form of support for gender equality in society reduce the general effect of an accumulative disadvantage for women on the labour market. This results in a smaller difference between the outcomes for men and women, including in the pension gap.

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[22] Regarding Yugoslavia the situation is vague as politics were aimed at high women's participation in workforce (Pankov et al. 2011), but, as mentioned in Reeves (1990), the proportion of women employed in Yugoslavia was lower than in Soviet Union and other Eastern Europe countries.

Table 4. Correlations between the unexplained portion of the gender pension gap and cultural variables

Women and men , 50+	Unexplained gap			
	Total mean	20th percentile	50th percentile	90th percentile
Index 1 (v76 – v81)	-0.610**	-0.462	-0.742***	-0.022
Index 2 (v72 – v75)	-0.753***	-0.522*	-0.753***	-0.390
When a mother works for pay, the children suffer (v72)	-0.725***	-0.549*	-0.791***	-0.352
A job is alright but what most women want is home and children (v73)	-0.566**	-0.319	-0.440	-0.434
All in all, family life suffers when the woman has a full-time job (v74)	-0.720***	-0.566**	-0.819***	-0.247
A man's job is to earn money; a woman's job is to look after the home and family (v75)	-0.566**	-0.374	-0.687***	-0.159
On the whole, men make better political leaders than women do (v76)	-0.593**	-0.440	-0.648**	-0.121
A university education is more important for a boy than for a girl (v77)	-0.577**	-0.560**	-0.687***	-0.082
On the whole, men make better business executives than women (v78)	-0.505*	-0.445	-0.544*	0.011
When jobs are scarce, men have more right to a job than women (v81)	-0.566**	-0.401	-0.791***	0.005
N[23]	13	13	13	13

Source: EVS and EU-SILC, * p < 0.10, ** p < 0.05, *** p < 0.01

Table 5. Correlations between the raw gender pension income gap and cultural variables

Women and men , 50+	Raw gap			
	Total	20th percentile	50th percentile	90th percentile
Index 1 (v76 – v81)	-0.604**	-0.423	-0.670**	-0.280
Index 2 (v72 – v75)	-0.571**	-0.467	-0.462	-0.286
When a mother works for pay, the children suffer (v72)	-0.648**	-0.555**	-0.560**	-0.258
A job is alright but what most women want is home and children (v73)	-0.225	-0.22	-0.143	-0.242
All in all, family life suffers when the woman has a full-time job (v74)	-0.714***	-0.61**	-0.659**	-0.209
A man's job is to earn money; a woman's job is to look after the home and family (v75)	-0.511*	-0.368	-0.516*	-0.159
On the whole, men make better political leaders than women do (v76)	-0.610**	-0.511*	-0.582**	-0.385
A university education is more important for a boy than for a girl (v77)	-0.555**	-0.412	-0.511*	-0.407
On the whole, men make better business executives than women (v78)	-0.478*	-0.374	-0.467	-0.363
When jobs are scarce, men have more right to a job than women (v81)	-0.599**	-0.401	-0.764***	-0.115
N[24]	13	13	13	13

Source: EVS and EU-SILC, * p < 0.10, ** p < 0.05, *** p < 0.01

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[23] Countries included: AT, DE, DK, CH, ES, FI, FR, IS, IT, NL, NO, SE, UK.
[24] Countries included: AT, DE, DK, CH, ES, FI, FR, IS, IT, NL, NO, SE, UK.

6.2. Correlations between gender gap in hourly labour income and gender attitudes

Correlations between the gap in labour income and the gender attitude variables are also considered (see Table 6). The analysis of labour income is conducted to provide some reference for the analysis of pension income. The correlation between the majority of the gender attitude variables and the raw gap are negative, but all coefficients are statistically insignificant. However, the Spearman correlation coefficients for cultural variables and the unexplained share are higher and statistically significant, showing that in countries with higher levels of support for gender equality, the unexplained share of the gap is lower. Former socialist states were not excluded in calculating these correlations. This result could form grounds for the hypothesis that the cultural attitudes prevailing in society influence the difference between the wages of men and women and the effect is "accumulated" in the unexplained share of the labour income gap.

Table 6. Correlations between the labour income gap and cultural variables

Women and men , 18 – 64	Raw	Unexplained
Index 1 (v76 – v81)	-0.011	-0.365*
Index 2 (v72 – v75)	-0.037	-0.438**
When a mother works for pay, the children suffer (v72)	-0.051	-0.346*
A job is alright but what most women want is home and children (v73)	-0.069	-0.506**
All in all, family life suffers when the woman has a full-time job (v74)	-0.043	-0.390*
A man's job is to earn money; a woman's job is to look after the family (v75)	-0.049	-0.423**
On the whole, men make better political leaders than women do (v76)	-0.061	-0.403*
A university education is more important for a boy than for a girl (v77)	-0.040	-0.383*
On the whole, men make better business executives than women (v78)	-0.013	-0.359*
When jobs are scarce, men have more right to a job than women (v81)	0.084	-0.346*
N	24	24

Source: EVS and EU-SILC, * p < 0.10, ** p < 0.05, *** p < 0.01

7. CONCLUSIONS

In this paper the gender pension gap in all of the EU countries and four non-EU states is studied. In line with previous studies, the pension income is calculated based on the EU-SILC dataset as the sum of the old-age benefit, survivor's benefit and pension from individual private plans. The decomposition of the pension income gap as well as the labour income gap is performed on the level of means and over the distribution. In the final stage of the analysis the correlations between occupational pension coverage, cultural variables and gender pension income gap are considered. The correlations between cultural variables and the gender labour income gap are also derived to provide a comparative background for the results on pension income.

The topic of inequalities in retirement age is quite important taking into account the general attention of economists on the problem of income inequality in recent years. The main contribution of this paper is in expanding the scope of previous decomposition studies (Bettio et al. (2013) and the Pension Adequacy Report (2014)) for all EU countries and four non-EU states, meaning that all new member states – CEE countries – were included in the analysis. It was found that in these countries, contrary to other EU states, the high labour income gap corresponds to the current low pension gap. Previously, Bettio et al. (2013) pointed out this peculiarity (but countries were divided based on the principle of the pension gap being larger or lower than 27%). Additionally, a positive correlation is observed between the unexplained pension

and labour income gap in all countries, meaning that the same factors, persistent over time, could influence both of these variables. Observations of a positive relationship between the gender pension gap and the coverage of the second pillar supports the hypothesis that the shift from PAYG to the three-pillar system with a mandatory second pillar could lead to higher gender inequality in retirement due to the conversion of the gender labour income gap to the pension gap. A similar conclusion regarding the role of second and third pillar pension income was reached in the *Pension Adequacy Report* (2018) due to the substantial contribution of the variable "ratio of second/third pillar pension income to own-pension income" to the explained portion of the gender gap in pensions in Denmark and the Netherlands.[25] This implies that in countries with a currently high pay gap and low pension gap, the pension gap can increase substantially in the future.

As in the *Pension Adequacy Report* (2018), it was found that the main factor shaping inequality between men and women in retirement is the difference in the number of years in employment. The role of occupations is secondary, but this could be a result of the fact that occupations are not considered during the whole lifecycle. It was also found that tertiary education widens the pension income gap (in some countries, the effect is kept over the whole distribution), but decreases the hourly labour income gap. This highlights the importance of the high involvement of women in the system of tertiary education and shows that as the gender gap in education has closed nowadays, the role of education in the gender pension gap is going to be eroded in the future. Previously, the increasing effect on the pension income gap of years in employment and being highly educated was found by Bettio et al. (2013). When the labour income gap is considered, one of the important factors was the sector of employment. Unfortunately, this variable is not available for the majority of retirees and due to this reason its effect on the gender pension gap was not considered.

In the final stage of the analysis, the relationship between the pension income gap and gender attitudes is considered. The former socialist states were omitted from this analysis, as the high employment rates among women (that subsequently influenced the pension income) was rather a result of party politics than women's own choice. In societies with higher support for gender equality, the pension gap (raw and unexplained) is smaller. A similar result was obtained when the unexplained gap in hourly labour income is considered (without excluding the CEE countries). These results highlight that social norms supporting gender inequality could contribute to disadvantages for women on the labour market and later also in retirement.

The limitation of this study is data availability: in order to cover all EU countries, the EU-SILC dataset is used. However, this data source does not include information on career history and earnings during the whole lifetime. The occupation variable refers to current or last situation and it is doubtful whether it could be considered as representative of the whole career (especially in CEE countries that went through a period of considerable labour market transformation at the beginning of 1990s). In future, this limitation can be overcome if researchers opt for administrative data, but this will limit the country sample only to states with available employment history data for all people who reached retirement age. Another option is to limit the sample to countries with low occupational mobility, but for this the longitudinal data on occupational mobility during the whole lifespan (from 20 to 60 years) is needed. This would lead to less countries being covered in the study. The advantage of covering a large number of countries is that cross-country analysis can be performed on the role of cultural variables. Due to the large number of countries included in the sample, the peculiarities of pension schemes

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[25] Decomposition was performed based on SHARE data for 2015. Sample included following countries: AT, BE, DE, CZ, DK, EL, ES, FR, IT, NL. PL, SE.

were not analysed. The attempt to group countries according to well-known typologies (see Annex 2) does not provide any expected results illustrating the difference in outcomes between countries that belong to one group over others.

One of the social policy implications of this paper is the necessity of state support for activities aimed at changing perception the of women on the labour market and family life (such as creating initiatives for women to receive education and start a career in a STEM area). Another important implication is that privatisation of pension plans can lead to the conversion of the wage gap into a pension income gap and reinforce women's disadvantage after retirement. Increasing the retirement age should be accompanied by creating facilities for the care of children and elderly people in order to reduce incentives for women to leave the labour market for long periods.

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ANNEX 1: LIST OF ABBREVIATIONS, ADDITIONAL TABLES AND FIGURES

List of country abbreviations used in footnotes

- AT – Austria
- BE – Belgium
- BG – Bulgaria
- CH – Switzerland
- CY – Cyprus
- CZ – Czech Republic
- DE – Germany
- DK – Denmark
- EE – Estonia
- EL – Greece
- ES – Spain
- FI – Finland
- FR – France
- HR – Croatia
- HU – Hungary
- IE – Ireland
- IS – Iceland
- IT – Italy
- LT – Lithuania
- LU – Luxembourg
- LV – Latvia
- MT – Malta
- NL – Netherlands
- NO – Norway
- PL – Poland
- PT – Portugal
- RO – Romania
- RS – Serbia
- SE – Sweden
- SI – Slovenia
- SK – Slovak Republic
- UK – United Kingdom

Table A1.1. Average share of different components of pension income (inter-household transfers added to the total pension income)

Country	Men				Women			
	pension from individual private plans	old-age benefits	survivor's benefits	inter-household cash transfers	pension from individual private plans	old-age benefits	survivor's benefits	inter-household cash transfers
Austria	1.32	97.03	1.60	0.05	0.59	81.82	17.03	0.56
Belgium	0.09	99.85	0.00	0.06	0.17	99.49	0.12	0.22
Bulgaria	0.01	98.65	0.01	1.33	0.01	95.48	1.85	2.66
Croatia	0.01	98.81	0.65	0.53	0.02	68.52	30.37	1.09
Cyprus	1.59	96.82	0.73	0.86	0.84	73.91	22.49	2.76
Czech Republic	0.32	96.93	1.85	0.89	0.12	90.46	8.05	1.37
Denmark	0.00	100.00	0.00	0.00	0.00	99.90	0.09	0.01
Estonia	0.24	99.67	0.00	0.09	0.23	99.54	0.05	0.18
Finland	2.06	96.98	0.94	0.03	1.67	85.64	12.58	0.11
France	0.04	99.87	0.00	0.08	0.18	99.43	0.00	0.39
Germany	0.88	97.61	1.47	0.05	0.98	84.29	14.48	0.24
Greece	0.01	99.62	0.10	0.27	0.02	90.95	8.30	0.73
Hungary	0.00	99.54	0.00	0.45	0.00	98.83	0.12	1.05
Iceland	0.00	100.00	0.00	0.00	0.00	99.98	0.00	0.02
Ireland	3.40	96.57	0.00	0.03	1.79	97.85	0.27	0.09
Italy	0.00	98.09	1.83	0.07	0.00	79.86	19.92	0.22
Latvia	0.00	99.04	0.02	0.94	0.04	97.62	0.15	2.19
Lithuania	0.00	98.36	1.37	0.27	0.00	94.60	4.36	1.04
Luxembourg	0.03	99.76	0.00	0.21	0.00	97.53	0.09	2.39
Malta	0.00	100.00	0.00	0.00	0.00	100.00	0.00	0.00
Netherlands	0.03	99.90	0.00	0.07	0.02	99.49	0.31	0.19
Norway	1.82	98.05	0.00	0.13	1.08	98.70	0.00	0.22
Poland	0.01	99.79	0.00	0.20	0.00	99.17	0.36	0.47
Portugal	0.46	97.94	1.35	0.25	0.18	89.57	9.88	0.38
Romania	0.00	99.72	0.17	0.12	0.00	89.03	10.71	0.26
Serbia	0.00	98.75	0.81	0.44	0.00	67.56	31.45	0.99
Slovak Republic	0.11	97.29	2.41	0.18	0.07	88.85	10.69	0.38
Slovenia	0.46	98.27	1.20	0.08	0.41	77.90	21.22	0.47
Spain	2.10	96.61	1.20	0.09	1.41	80.62	17.64	0.33
Sweden	4.28	95.72	0.00	0.00	3.83	96.17	0.01	0.00
Switzerland	1.54	98.17	0.16	0.13	1.21	94.60	3.36	0.83
United Kingdom	5.40	93.44	0.69	0.47	1.92	92.10	5.13	0.85

Table A1.2. Country level decomposition of the gender gap in pension income

	Austria		Belgium		Bulgaria		Switzerland		Cyprus	
	NW+	NW-	NW+	NW-	NW+	NW-	NW+	NW-	NW+	NW-
Secondary education	0.005	0.004	0.000	-0.000	0.003*	0.003*	-0.009*	-0.012**	0.011**	0.010**
Tertiary education	0.028***	0.029***	0.015***	0.012***	-0.001	-0.001	0.072***	0.066***	0.020***	0.015**
Married	0.084***	0.068***	0.017	0.014	0.023	0.022	-0.007	-0.013	0.085**	0.090***
Separated	-0.005	-0.004	0.003	0.004	0.001	0.000	0.003	0.004	-0.005	-0.008
Widowed	-0.098***	-0.082***	0.011	0.008	-0.047**	-0.046**	0.000	0.006	-0.096***	-0.098***
Years in paid work	0.756***	0.659***	0.573***	0.434***	0.068**	0.061**	0.235**	0.226**	0.504*	0.361*
Years in paid work squared	-0.499***	-0.465***	-0.339***	-0.285***	-0.057*	-0.054*	-0.290***	-0.290***	-0.537***	-0.435***
Immigrant status	0.004	0.006*	-0.002	-0.002	-0.000	-0.000	-0.002	-0.002	-0.005	-0.000
Age 80+	-0.003	-0.002	-0.002	-0.000	-0.002*	-0.002*	-0.002	-0.001	0.002	-0.001
Chronic illnesses	0.000	-0.001	0.002	0.001	0.000	0.000	-0.000	0.000	0.002	0.001
Share of private income	-0.001	-0.001	-0.002	-0.002	-0.000	-0.000	0.002	0.002	0.001	0.001
Managers	-0.058***	0.030***	-0.079***	0.005	-0.001	0.014***	0.012	0.024	0.048	0.048***
Professionals	-0.012	0.005	-0.012	-0.002	0.013	-0.009**	0.004	0.010	0.029	0.017
Technicians	-0.094***	0.021***	-0.045***	0.008*	-0.001	0.004	0.000	0.000	0.051	0.051***
Clerical support workers	0.078***	-0.015*	0.040***	-0.008	0.018	-0.009*	-0.008	-0.022	-0.014	-0.025***
Services and sales workers	0.200***	-0.008	0.078***	0.000	0.015	-0.011***	0.018	0.006	-0.000	-0.005
Skilled agricultural etc.	0.027	0.006	-0.024***	-0.002	0.022**	0.004	0.001	0.001	-0.010	-0.008*
Craft and trade workers	-0.191***	0.018	-0.160***	-0.005	-0.021	0.022***	-0.024	-0.016	-0.014	-0.004
Plant and machine operators	-0.129***	0.006	-0.017	-0.000	-0.022	0.027***	-0.006	-0.003	-0.001	-0.000
Elementary occupations	0.167***	omitted	0.101***	omitted	0.015*	omitted	0.002	omitted	0.011	omitted
Total explained gap (log points)	0.259***	0.275***	0.159***	0.179***	0.025*	0.023*	0.002	-0.013	0.083	0.011
Total unexplained gap (log points)	0.236***	0.210***	0.175***	0.155***	0.263***	0.267***	0.340***	0.344***	0.450***	0.462***
Total explained gap (in %)	52.32	56.74	47.60	53.73	8.68	7.88	0.58	-3.88	15.57	2.31
Total unexplained gap (in %)	47.68	43.26	52.40	46.27	91.32	92.12	99.42	103.88	84.43	97.69
With women coefficients:										
Total explained gap (log points)	0.047*	0.0391	0.054*	0.0565*	-0.015	-0.0158	-0.037*	-0.0400*	0.135***	0.0871**
Total unexplained gap (log points)	0.448***	0.445***	0.279***	0.278***	0.303***	0.306***	0.379***	0.371***	0.398***	0.386***
Total explained gap (in %)	9.59	8.08	16.32	16.92	-5.32	-5.45	-10.68	-12.09	25.26	18.40
Total unexplained gap (in %)	90.41	91.92	83.68	83.08	105.32	105.45	110.68	112.09	74.74	81.60
Total gap in gender pension income	0.495***	0.484***	0.334***	0.334***	0.288***	0.290***	0.342***	0.331***	0.533***	0.473***

Source: EU-SILC, 2018, men and women aged 65+; * p < 0.10, ** p < 0.05, *** p < 0.01. Baseline model: coefficients from men's equation are used. NW+: including never worked, NW-: excluding never worked, elementary occupations is a reference category

Table A1.2. Country level decomposition of the gender gap in pension income (*continuation*)

	Czech Republic		Germany		Denmark		Estonia		Greece	
	NW+	NW-	NW+	NW-	NW+	NW-	NW+	NW-	NW+	NW-
Secondary education	0.006***	0.006***	-0.004**	-0.004**	0.005	0.006	-0.000	-0.000	0.009***	0.010***
Tertiary education	0.012***	0.012***	0.036***	0.033***	0.000	-0.002	-0.003*	-0.003*	0.015***	0.015***
Married	-0.003	-0.003	0.062***	0.060***	-0.006	-0.007	0.011	0.011	0.015*	0.015*
Separated	0.000	0.000	-0.005**	-0.004*	-0.000	0.000	-0.001	-0.001	0.001	0.001
Widowed	-0.027***	-0.027***	-0.078***	-0.074***	-0.033***	-0.031***	-0.010	-0.010	-0.008	-0.008
Years in paid work	0.001	0.001	1.044***	0.976***	0.016	0.013	0.018**	0.017**	0.164***	0.150***
Years in paid work squared	0.006	0.006	-0.767***	-0.736***	-0.018	-0.015	-0.004	-0.004	-0.135***	-0.128***
Immigrant status	-0.000	-0.000	omitted	omitted	0.000	0.000	0.006***	0.006***	0.000	0.000
Age 80+	0.003***	0.003***	omitted	omitted	0.001	0.001	-0.005***	-0.005***	0.003***	0.003***
Chronic illnesses	0.000	0.000	0.001	0.001	0.001	0.000	-0.003**	-0.003**	0.001**	0.001**
Share of private income	0.003**	0.003**	-0.000	-0.000	omitted	omitted	0.000	0.000	-0.000	-0.000
Managers	0.005***	0.005***	-0.154***	0.049***	0.011	0.025***	-0.004	0.003**	0.005***	0.005***
Professionals	-0.002*	-0.002*	-0.140***	0.041***	-0.005	-0.014**	0.008	-0.005**	0.003***	0.003***
Technicians	0.006***	0.006***	-0.053**	0.011**	0.000	-0.005	0.001	-0.005*	0.004***	0.004***
Clerical support workers	-0.020***	-0.020***	0.390***	-0.088***	-0.004	-0.026**	0.028	0.007	-0.002*	-0.002*
Services and sales workers	-0.007**	-0.007**	0.239***	-0.018***	0.019	0.002	0.023	0.002	-0.000	-0.000
Skilled agricultural etc.	0.000	0.000	-0.025***	-0.000	-0.005	0.001	0.004	0.001	0.089***	0.091***
Craft and trade workers	0.007	0.007	-0.354***	0.030***	-0.036	-0.005	-0.041	0.009*	0.007**	0.007**
Plant and machine operators	0.006**	0.006**	0.022	-0.002	-0.001	0.009*	-0.028	0.004	0.004**	0.004**
Elementary occupations	0.000	omitted	0.051***	omitted	0.008	omitted	0.024	omitted	0.000	omitted
Total explained gap (log points)	-0.005	-0.005	0.264***	0.274***	-0.047**	-0.047**	0.026**	0.026**	0.174***	0.169***
Total unexplained gap (log points)	0.139***	0.138***	0.246***	0.223***	0.094***	0.091***	-0.031***	-0.031***	0.107***	0.114***
Total explained gap (in %)	-3.73	-3.63	51.76	55.15	-97.92	-107.52	-520.00	-485.11	61.92	59.73
Total unexplained gap (in %)	103.73	103.63	48.24	44.85	195.83	207.52	620.00	585.11	38.08	40.27
With women coefficients:										
Total explained gap (log points)	-0.006	-0.00707	0.058***	0.0501***	-0.064**	-0.0695**	-0.009	-0.00869	0.124***	0.110***
Total unexplained gap (log points)	0.140***	0.141***	0.452***	0.447***	0.112***	0.113***	0.003	0.00341	0.157***	0.172***
Total explained gap (in %)	-4.32	-5.29	11.31	10.09	-135.00	-158.35	163.97	164.61	44.05	39.03
Total unexplained gap (in %)	104.32	105.29	88.69	89.91	235.00	258.35	-63.97	-64.61	55.95	60.97
Total gap in gender pension income	0.134***	0.134***	0.510***	0.497***	0.048**	0.044**	-0.005	-0.005	0.281***	0.282***

Source: EU-SILC, 2018, men and women aged 65+; * p < 0.10, ** p < 0.05, *** p < 0.01. Baseline model: coefficients from men's equation are used. NW+: including never worked, NW-: excluding never worked, elementary occupations is a reference category

Table A1.2. Country level decomposition of the gender gap in pension income (*continuation*)

	Spain		Finland		France		Croatia		Hungary	
	NW+	NW-	NW+	NW-	NW+	NW-	NW+	NW-	NW+	NW-
Secondary education	-0.000	-0.000	-0.001	-0.001	0.007***	0.006***	0.017***	0.011***	0.032***	0.032***
Tertiary education	0.004	0.003	0.016***	0.016***	-0.002	-0.004	0.021***	0.011***	0.028***	0.027***
Married	0.054***	0.053***	0.025***	0.025***	0.044***	0.044***	0.049**	0.041**	0.010	0.010
Separated	0.002	0.002	0.000	0.000	-0.001	-0.001	-0.001	-0.001	0.000	0.000
Widowed	-0.038***	-0.038***	-0.051***	-0.051***	-0.067***	-0.067***	-0.042*	-0.034*	-0.076***	-0.075***
Years in paid work	0.534***	0.518***	0.155***	0.134***	0.168***	0.157***	0.564***	0.298***	0.175**	0.164**
Years in paid work squared	-0.380***	-0.373***	-0.100***	-0.093***	-0.094**	-0.090**	-0.273***	-0.184***	-0.087	-0.084
Immigrant status	0.008**	0.008**	-0.000	-0.000	-0.009***	-0.010***	0.006***	0.006***	0.000	0.000
Age 80+	0.001	0.001	0.011***	0.011***	-0.002	-0.001	-0.003*	-0.000	-0.002	-0.002
Chronic illnesses	0.002**	0.002**	0.001	0.001	0.000	0.000	0.001	0.001	-0.000	-0.000
Share of private income	0.011***	0.011***	0.004	0.004	0.000	0.000	0.000	0.000	omitted	omitted
Managers	-0.018	0.017***	-0.009	0.024***	-0.021	0.024***	0.001	0.027***	-0.031**	0.015***
Professionals	0.008	-0.016***	-0.013	0.016**	-0.014	0.009*	0.002	-0.020***	-0.014	0.006
Technicians	-0.007	0.008**	0.006	-0.003	-0.038	0.012***	-0.011	0.026***	0.046**	-0.019***
Clerical support workers	0.013	-0.027***	0.071***	-0.016	0.106*	-0.027***	0.018	-0.018***	0.161***	-0.013
Services and sales workers	0.076*	-0.021***	0.114***	-0.016	0.091**	-0.004	0.020*	-0.007*	0.061***	-0.006
Skilled agricultural etc.	-0.023**	-0.002*	-0.010	-0.001	-0.020	-0.004*	0.021***	0.016***	0.016	0.003
Craft and trade workers	-0.091	0.031***	-0.135***	0.030**	-0.146**	0.005	-0.052	0.020***	-0.298***	0.030**
Plant and machine operators	-0.029	0.028***	-0.071***	0.007	-0.074**	-0.000	-0.028	0.011***	-0.102***	0.015***
Elementary occupations	0.084**	omitted	0.071***	omitted	0.111**	omitted	0.027**	omitted	0.182***	omitted
Total explained gap (log points)	0.211***	0.206***	0.084***	0.085***	0.039**	0.051***	0.337***	0.204***	0.099***	0.102***
Total unexplained gap (log points)	0.098***	0.098***	0.102***	0.097***	0.329***	0.304***	-0.016	0.059***	0.075***	0.066**
Total explained gap (in %)	68.28	67.82	45.16	46.77	10.60	14.39	104.98	77.64	56.90	60.82
Total unexplained gap (in %)	31.72	32.18	54.84	53.23	89.40	85.61	-4.98	22.36	43.10	39.18
With women coefficients:										
Total explained gap (log points)	0.036*	0.0315*	-0.022	-0.0247	0.024	0.0106	0.147***	0.0903***	-0.015	-0.0209
Total unexplained gap (log points)	0.272***	0.272***	0.208***	0.206***	0.344***	0.344***	0.174***	0.173***	0.189***	0.189***
Total explained gap (in %)	11.79	10.38	-11.88	-13.60	6.57	2.99	45.82	34.33	-8.43	-12.44
Total unexplained gap (in %)	88.21	89.62	111.88	113.60	93.43	97.01	54.18	65.67	108.43	112.44

Total gap in gender pension income	0.309***	0.304***	0.186***	0.182***	0.368***	0.355***	0.321***	0.263***	0.174***	0.168***

Source: EU-SILC, 2018, men and women aged 65+; * p < 0.10, ** p < 0.05, *** p < 0.01. Baseline model: coefficients from men's equation are used. NW+: including never worked, NW-: excluding never worked, elementary occupations is a reference category

Table A1.2. Country level decomposition of the gender gap in pension income (*continuation*)

	Ireland		Iceland		Italy	Lithuania		Luxembourg	
	NW+	NW-	NW+	NW-	NW-	NW+	NW-	NW+	NW-
Secondary education	-0.008*	-0.009*	0.035	0.033	0.006***	-0.003	-0.003	0.003	0.005
Tertiary education	-0.016**	-0.020***	0.020	0.016	0.008***	0.001	0.001	0.054**	0.056**
Married	0.093***	0.087***	-0.012	-0.011	0.041***	-0.033	-0.034	0.014	0.025
Separated	-0.002	-0.005	0.001	0.002	0.000	0.001	0.002	0.002	0.001
Widowed	-0.065***	-0.058***	-0.073	-0.071	-0.054***	0.031	0.033	0.002	-0.016
Years in paid work	0.248**	0.360***	0.343*	0.577**	0.202***	0.023	0.020	0.935**	1.204***
Years in paid work squared	-0.213**	-0.301***	-0.362*	-0.567**	-0.147***	0.051	0.049	-0.554**	-0.741***
Immigrant status	0.000	0.000	omitted	omitted	0.003***	0.001	0.000	0.004	0.009
Age 80+	0.002	0.003	0.009	0.008	0.003***	-0.003	-0.003	-0.004	-0.010
Chronic illnesses	-0.000	-0.000	0.004	0.005	0.001*	0.001	0.001	0.000	-0.001
Share of private income	0.008**	0.005	omitted	omitted	omitted	omitted	omitted	-0.002	-0.003
Managers	-0.039**	0.011**	omitted	omitted	0.021***	-0.013	0.008**	-0.108**	-0.008
Professionals	0.014	-0.094***	omitted	omitted	-0.022***	0.047*	-0.024***	-0.031	-0.001
Technicians	-0.009	0.008*	omitted	omitted	0.014***	-0.013	0.008**	-0.079	0.003
Clerical support workers	0.050*	-0.038**	omitted	omitted	-0.008***	0.035**	-0.001	0.108	-0.004
Services and sales workers	-0.205***	-0.050***	omitted	omitted	-0.007***	0.053***	-0.003	0.107*	0.018
Skilled agricultural etc.	0.046***	0.010	omitted	omitted	0.002**	-0.005	-0.001	0.020	0.009
Craft and trade workers	0.029**	0.010*	omitted	omitted	0.010***	-0.036**	0.009**	-0.172**	-0.020
Plant and machine operators	-0.064***	-0.001	omitted	omitted	0.008***	-0.147***	0.017	-0.180***	-0.004
Elementary occupations	0.005	omitted	omitted	omitted	omitted	0.082***	omitted	0.218**	omitted
Total explained gap (log points)	-0.127***	-0.080*	-0.037	-0.007	0.080***	0.074***	0.076***	0.337***	0.521***
Total unexplained gap (log points)	0.333***	0.262***	0.165*	0.136	0.249***	0.072***	0.068***	0.250**	0.093
Total explained gap (in %)	-61.65	-43.84	-28.91	-5.13	24.25	50.68	52.94	57.41	84.81
Total unexplained gap (in %)	161.65	143.84	128.91	105.13	75.75	49.32	47.06	42.59	15.19
With women coefficients:									
Total explained gap (log points)	-0.108**	-0.131***	-0.007	-0.007	-0.061***	0.015	0.0159	0.184*	0.333**
Total unexplained gap (log points)	0.314***	0.314***	0.135**	0.135**	0.389***	0.131***	0.128***	0.403***	0.282*
Total explained gap (in %)	-52.60	-71.95	-5.41	-0.05	-18.52	10.51	11.00	31.31	54.17
Total unexplained gap (in %)	152.60	171.95	105.41	1.05	118.52	89.49	89.00	68.69	45.83

Total gap in gender pension income	0.206***	0.182***	0.128***	0.128**	0.328***	0.146***	0.144***	0.587***	0.615***

Source: EU-SILC, 2018, men and women aged 65+; * p < 0.10, ** p < 0.05, *** p < 0.01. Baseline model: coefficients from men's equation are used. NW+: including never worked, NW-: excluding never worked, elementary occupations is a reference category

Table A1.2. Country level decomposition of the gender gap in pension income (*continuation*)

	Latvia		Malta		Netherlands		Norway		Poland	
	NW+	NW-	NW+	NW-	NW+	NW-	NW+	NW-	NW+	NW-
Secondary education	-0.000	-0.000	-0.003	-0.003	0.017***	0.013***	0.001	0.001	0.004***	0.004***
Tertiary education	-0.001	-0.000	-0.003	-0.003	0.064***	0.052***	0.007	0.006	0.006**	0.006**
Married	-0.011	-0.010	0.036***	0.036***	0.004	0.003	0.007	0.007	0.035***	0.035***
Separated	0.000	0.000	0.000	0.000	0.002	0.002	-0.016	-0.016	-0.002*	-0.002*
Widowed	0.007	0.008	-0.009*	-0.009*	-0.046***	-0.040***	-0.001	-0.001	-0.030**	-0.030**
Years in paid work	0.183***	0.179***	0.498**	0.498**	0.414***	0.360***	0.288*	0.276*	0.090***	0.090***
Years in paid work squared	-0.132***	-0.130***	-0.401***	-0.401***	-0.291***	-0.270***	-0.244**	-0.238**	-0.039*	-0.039*
Immigrant status	-0.000	-0.000	omitted	omitted	0.001	0.001	0.001	0.000	0.000	0.000
Age 80+	0.009***	0.010***	omitted	omitted	0.004**	0.001	0.002	0.002	-0.001	-0.001
Chronic illnesses	-0.002	-0.002	-0.001	-0.001	0.003*	0.003*	0.002	0.002	-0.000	-0.000
Share of private income	omitted	omitted	omitted	omitted	0.000	0.000	0.008**	0.008**	0.000	0.000
Managers	-0.010	0.002	-0.009**	0.004	0.017	0.043***	0.045***	0.045***	0.006***	0.006***
Professionals	0.152***	-0.019***	0.003	-0.025***	-0.001	0.018***	-0.014	-0.015	-0.009***	-0.009***
Technicians	0.093***	-0.017***	-0.002	0.003	-0.002	0.005	0.015	0.015	-0.004**	-0.004**
Clerical support workers	0.154***	-0.010	0.000	-0.017***	0.008	-0.016*	-0.002	-0.002	-0.001	-0.001
Services and sales workers	0.173***	-0.004	0.011*	0.002	0.054**	0.018	-0.029	-0.029	-0.003	-0.003
Skilled agricultural etc.	0.054***	0.005*	-0.006**	-0.003	-0.007**	-0.002	-0.003	-0.003	0.018***	0.018***
Craft and trade workers	-0.389***	0.025**	-0.050***	0.002	-0.041**	-0.011	0.015	0.015	0.005	0.005
Plant and machine operators	-0.454***	0.019	-0.005	-0.001	-0.014**	-0.003	0.008	0.008	0.021***	0.016***
Elementary occupations	0.229***	omitted	0.018***	omitted	0.014*	omitted	0.000	omitted	0.000	omitted
Total explained gap (log points)	0.055**	0.056**	0.077	0.083	0.203***	0.177***	0.089**	0.080**	0.096***	0.091***
Total unexplained gap (log points)	0.047*	0.052**	0.322***	0.316***	0.210***	0.215***	0.126***	0.128***	0.127***	0.132***
Total explained gap (in %)	53.92	51.63	19.30	20.81	49.15	45.09	41.40	38.52	43.05	40.83
Total unexplained gap (in %)	46.08	48.37	80.70	79.19	50.85	54.91	58.60	61.48	56.95	59.17
With women coefficients:										
Total explained gap (log points)	0.038**	0.0391**	-0.073	-0.0623	0.043**	0.0191	-0.009	-0.0161	0.051***	0.0499***
Total unexplained gap (log points)	0.064***	0.0694***	0.472***	0.461***	0.369***	0.373***	0.224***	0.225***	0.172***	0.173***
Total explained gap (in %)	37.36	36.07	-18.26	-15.61	10.53	4.87	-4.22	-7.70	22.95	22.39
Total unexplained gap (in %)	62.64	63.93	118.26	115.61	89.47	95.13	104.22	107.70	77.05	77.61

	Portugal		Romania		Serbia		Sweden		Slovenia	
Total gap in gender pension income	0.102***	0.109***	0.399***	0.399***	0.413***	0.392***	0.215***	0.209***	0.223***	0.223***

Source: EU-SILC, 2018, men and women aged 65+; * p < 0.10, ** p < 0.05, *** p < 0.01. Baseline model: coefficients from men's equation are used. NW+: including never worked, NW-: excluding never worked, elementary occupations is a reference category

Table A1.2. Country level decomposition of the gender gap in pension income (*continuation*)

	Portugal		Romania		Serbia		Sweden		Slovenia	
	NW+	NW-	NW+	NW-	NW+	NW-	NW+	NW-	NW+	NW-
Secondary education	0.011***	0.011***	0.041***	0.036***	0.017***	0.008**	0.005	0.005	0.025***	0.018***
Tertiary education	-0.006	-0.006	0.013***	0.011***	0.030***	0.016***	-0.007	-0.007	0.060***	0.050***
Married	0.128***	0.128***	-0.016	-0.015	0.023	0.014	0.016*	0.015*	0.064***	0.064***
Separated	-0.008***	-0.008***	-0.000	0.001	-0.000	-0.000	0.001	0.000	0.003	0.001
Widowed	-0.136***	-0.136***	0.038*	0.034*	-0.025	-0.015	-0.024*	-0.021*	-0.080***	-0.075***
Years in paid work	0.113***	0.113***	0.026	0.015	0.789***	0.363***	0.214**	0.192**	0.238***	0.343***
Years in paid work squared	-0.122***	-0.122***	0.011	0.008	-0.410***	-0.249***	-0.191**	-0.180**	-0.112*	-0.219***
Immigrant status	0.000	0.000	-0.000	-0.000	-0.000	-0.000	0.003	0.003	omitted	omitted
Age 80+	0.004***	0.004***	0.000	0.000	0.000	0.000	0.012**	0.010**	-0.002	-0.001
Chronic illnesses	0.002*	0.002*	0.004*	0.004*	0.004**	0.003*	0.002	0.003	0.000	0.000
Share of private income	0.003**	0.003**	omitted	omitted	omitted	omitted	0.005	0.005	0.001	0.001
Managers	0.030***	0.030***	0.001	0.006***	-0.021**	0.010**	0.007	0.050***	-0.064***	0.023***
Professionals	-0.011***	-0.011***	0.001	-0.008**	0.003	-0.002	0.006	-0.025*	0.036*	-0.005
Technicians	0.078***	0.047***	-0.000	0.012***	-0.012*	0.000	-0.006	0.029*	0.026	-0.004
Clerical support workers	-0.006**	-0.006**	0.008	-0.009***	0.037***	-0.007	0.048	-0.060**	0.076***	-0.005
Services and sales workers	-0.017***	-0.017***	0.017	-0.021***	-0.002	0.002	0.062	-0.065**	0.017	-0.001
Skilled agricultural etc.	0.014***	0.014***	0.066***	0.020***	0.023**	0.025***	-0.025	0.005	0.002	0.001
Craft and trade workers	0.004	0.004	-0.062	0.044***	-0.091***	-0.001	-0.066	0.075***	-0.198***	0.003
Plant and machine operators	0.006*	0.006*	-0.033	0.026***	-0.060***	0.007	-0.028	0.029**	0.002	-0.001
Elementary occupations	0.000	omitted	0.041**	omitted	0.032***	omitted	0.035	omitted	0.062***	omitted
Total explained gap (log points)	0.087***	0.056***	0.156***	0.164***	0.336***	0.177***	0.070**	0.062**	0.160***	0.194***
Total unexplained gap (log points)	0.258***	0.289***	0.156***	0.125***	-0.059**	0.016	0.194***	0.196***	0.027	-0.038
Total explained gap (in %)	25.22	16.26	50.16	56.78	121.74	91.47	26.62	23.96	85.56	124.48
Total unexplained gap (in %)	74.78	83.74	50.16	43.22	-21.38	8.53	73.76	76.04	14.44	-24.48
With women coefficients:										
Total explained gap (log points)	-0.000	-0.0483***	0.131***	0.111***	0.181***	0.0944***	0.023	0.0167	0.056***	0.0286*
Total unexplained gap (log points)	0.345***	0.393***	0.180***	0.178***	0.096***	0.0986***	0.241***	0.242***	0.132***	0.127***
Total explained gap (in %)	-0.12	-14.02	42.22	38.43	65.40	48.92	8.64	6.47	29.69	18.39
Total unexplained gap (in %)	100.12	114.02	57.78	61.57	34.60	51.08	91.36	93.53	70.31	81.61

Total gap in gender pension income	0.345***	0.345***	0.311***	0.289***	0.276***	0.193***	0.263***	0.258***	0.187***	0.156***

Source: EU-SILC, 2018, men and women aged 65+; * p < 0.10, ** p < 0.05, *** p < 0.01. Baseline model: coefficients from men's equation are used. NW+: including never worked, NW-: excluding never worked, elementary occupations is a reference category

Table A1.2. Country level decomposition of the gender gap in pension income (*continuation*)

	Slovak Republic		United Kingdom	
	NW+	NW-	NW+	NW-
Secondary education	0.008**	0.006**	0.003*	0.002
Tertiary education	0.009***	0.009***	0.012***	0.012***
Married	-0.002	-0.002	0.034***	0.033***
Separated	-0.000	-0.000	-0.001	-0.001
Widowed	-0.045***	-0.045***	-0.032***	-0.030***
Years in paid work	0.007	0.006	0.406***	0.393***
Years in paid work squared	0.013	0.012	-0.397***	-0.391***
Immigrant status	0.000	0.000	0.000	-0.001
Age 80+	0.004***	0.004***	0.000	0.000
Chronic illnesses	-0.000	0.000	0.000	0.000
Share of private income	0.000	0.000	0.011***	0.011***
Managers	-0.000	0.003**	-0.017	0.030***
Professionals	0.000	-0.004**	-0.001	0.001
Technicians	-0.001	0.001	0.005	-0.005
Clerical support workers	0.015	0.001	0.042	-0.026***
Services and sales workers	0.007	-0.001	0.075*	-0.027***
Skilled agricultural etc.	0.003	-0.001	-0.012**	-0.000
Craft and trade workers	-0.022	0.001	-0.102**	-0.001
Plant and machine operators	-0.015	0.009*	-0.051**	0.002
Elementary occupations	0.018	omitted	0.027**	omitted
Total explained gap (log points)	-0.000	-0.002	0.005	0.002
Total unexplained gap (log points)	0.069***	0.070***	0.434***	0.434***
Total explained gap (in %)	0.00	-2.25	1.14	0.51
Total unexplained gap (in %)	100.00	102.25	98.86	99.49
With women coefficients:				
Total explained gap (log points)	-0.072***	-0.0761***	0.011	0.00884
Total unexplained gap (log points)	0.141***	0.144***	0.427***	0.428***
Total explained gap (in %)	-104.09	-111.51	2.55	2.02
Total unexplained gap (in %)	204.09	211.51	97.45	97.98

Total gap in gender pension income	0.069***	0.068***	0.439***	0.437***

Source: EU-SILC, 2018, men and women aged 65+; * p < 0.10, ** p < 0.05, *** p < 0.01. Baseline model: coefficients from men's equation are used. NW+: including never worked, NW-: excluding never worked, elementary occupations is a reference category

Table A1.3. Country level decomposition of the gender gap in hourly labour income

	Austria	Belgium	Bulgaria	Switzerland	Cyprus	Czech Republic	Germany	Denmark	Estonia	Greece	Spain
Children: age < 3 y/o	-0.003	-0.000	0.004**	0.001	-0.001	0.003	0.001	-0.000	0.001	-0.000	-0.000
Married / Union	-0.001	-0.001	0.001	0.007***	0.000	-0.002	0.001	0.000	0.005*	0.000	0.000
Secondary education	0.000	0.005**	0.027***	-0.010***	0.001	0.001	-0.011***	0.006*	0.025***	0.008***	0.002
Tertiary education	0.002	-0.029***	-0.066***	0.006	-0.020***	0.002	0.020***	-0.028***	-0.094***	-0.030***	-0.033***
Managers	0.020***	0.010***	-0.001	0.017***	0.021***	0.021***	0.016***	0.008**	0.004	0.009***	0.008***
Professionals	-0.016***	-0.017***	-0.066***	0.003	-0.022***	-0.027***	0.002	-0.028***	-0.054***	-0.028***	-0.031***
Technicians	0.000	0.000	0.007***	-0.005*	0.008**	0.016***	-0.034***	0.001	-0.018***	-0.005***	0.002
Clerical support workers	-0.009**	-0.007***	-0.012**	-0.004	-0.004	-0.035***	-0.013***	-0.005	-0.012***	-0.008***	-0.017***
Services and sales workers	-0.006	-0.012***	-0.010*	0.004	-0.002	-0.025***	-0.005*	0.009*	-0.017**	-0.005***	-0.006***
Skilled agricultural etc.	-0.003**	0.001	0.000	-0.001	0.001	-0.000	0.000	-0.001	0.000	0.000	0.002**
Craft and trade workers	0.007	0.014**	0.018***	0.003	0.008	0.040***	0.018***	-0.002	0.044***	0.005**	0.005
Plant and machine operators	-0.002	0.005	0.017***	-0.003	0.011***	0.020***	0.001	-0.007	0.023***	0.005**	0.008**
Non-citizen	-0.002	-0.000	0.002	-0.002*	0.003*	0.000	0.000	0.000	-0.010***	-0.001	-0.005***
NACE: B, C, D, E	0.027	0.033	0.013***	0.008	0.007	0.013	0.091***	0.015	0.004	0.009**	0.058***
NACE: F	0.002	0.003	0.004	0.007	0.017	0.001	0.011**	0.002	-0.018**	0.002	0.021***
NACE: G	-0.002	-0.000	-0.003	-0.001	-0.000	-0.002	-0.008***	0.001	0.003	0.001	-0.004**
NACE: H	-0.000	0.007	0.009*	0.003	0.005*	0.005**	0.015***	0.003	-0.001	0.009***	0.012***
NACE: I	0.006	0.000	-0.006	0.001	-0.001	0.000	0.000	0.002	0.009**	0.000	-0.000
NACE: J	0.001	0.004	0.005**	0.009**	0.005*	0.005**	0.005***	0.001	0.003	0.001	0.006***
NACE: K	-0.001	0.002	-0.007***	0.003	-0.010**	-0.003*	-0.005**	0.001	-0.000	-0.002**	-0.008***
NACE: L, M, N	-0.000	-0.002	-0.000	-0.000	-0.003	-0.000	-0.008***	0.000	0.004	0.000	-0.005***
NACE: O	0.001	-0.000	-0.000	-0.001	0.028***	-0.000	-0.002	-0.000	0.001	0.003	0.014***
NACE: P	0.003	-0.005	0.004	-0.004	-0.035***	0.015*	-0.011**	0.007	0.025**	-0.013**	-0.035***
NACE: Q	-0.012	-0.008	-0.019***	-0.011	-0.017**	-0.003	-0.030***	0.018	0.006	0.004	-0.032***
NACE: R, S, T, U	0.002	0.000	-0.000	0.003	-0.003	0.001	-0.004*	0.000	0.005*	-0.000	-0.010***
Years in paid work	0.088***	0.026***	-0.030***	0.100***	0.093***	0.009	0.032***	-0.005	-0.024**	0.054***	0.059***
Years in paid work squared	-0.063***	-0.017***	0.028***	-0.065***	-0.068***	-0.013*	-0.029***	-0.000	0.025***	-0.025***	-0.030***
Chronic illnesses	0.002*	-0.000	0.003*	0.002	0.000	0.005***	0.001**	0.001	0.000	0.000	0.000
Permanent contract	0.000	0.002**	0.000	0.001	0.008***	0.004**	0.003	0.005**	-0.000	0.004***	0.003
Supervisor	0.014***	0.011***	0.001	0.019***	0.022***	0.016***	0.008***	0.014***	0.006**	0.007***	0.011***
Total explained gap (log points)	0.058***	0.026**	-0.080***	0.088***	0.051***	0.067***	0.069***	0.020	-0.054***	0.005	-0.004
Total unexplained gap (log points)	0.141***	0.063***	0.192***	0.042***	0.184***	0.214***	0.124***	0.064***	0.217***	0.083***	0.084***

Total (log points)	0.199***	0.089***	0.113***	0.130***	0.235***	0.280***	0.193***	0.084***	0.163***	0.088***	0.080***

Source: EU-SILC, 2018, men and women aged 18 – 64; * p < 0.10, ** p < 0.05, *** p < 0.01. Baseline model: coefficients from men's equation are used.

Table A1.3. Country level decomposition of the gender gap in hourly labour income (*continuation*)

	Finland	France	Croatia	Hungary	Ireland	Iceland	Italy	Lithuania	Luxem-bourg	Latvia	Malta
Children: age < 3 y/o	0.000	-0.001*	0.001	0.003	0.001	-0.002	-0.001	0.006**	-0.000	0.007***	-0.000
Married / Union	0.002	0.001	-0.002*	-0.001	0.007**	0.002	0.004***	0.001	0.001	0.004*	-0.003
Secondary education	0.013***	0.002**	0.011***	0.022***	-0.002	0.009	-0.001	0.010	0.004**	0.010	-0.010***
Tertiary education	-0.021***	-0.015***	-0.040***	-0.058***	-0.014**	-0.064***	-0.030***	-0.042***	-0.015***	-0.070***	-0.051***
Managers	0.013***	0.017***	0.005***	0.003*	0.010***	omitted	0.011***	0.016***	0.009***	0.000	0.015**
Professionals	0.018**	-0.003	-0.056***	-0.026***	-0.027***	omitted	-0.039***	-0.076***	0.001	-0.055***	-0.040***
Technicians	-0.023***	0.001	0.009***	-0.023***	0.007**	omitted	-0.004**	-0.007*	-0.009**	-0.014***	0.009***
Clerical support workers	-0.004	-0.007	0.001	-0.012**	-0.001	omitted	-0.013***	-0.020***	-0.007**	-0.014***	-0.012***
Services and sales workers	-0.014*	-0.021***	-0.008*	-0.005**	-0.004	omitted	-0.011***	-0.020**	-0.008**	-0.017**	-0.017***
Skilled agricultural etc.	-0.000	-0.000	-0.000	0.000	0.013	omitted	0.001	-0.000	-0.002	-0.000	0.000
Craft and trade workers	0.020***	0.006	0.022***	0.015*	0.004	omitted	0.010***	0.040***	0.009	0.024***	0.014***
Plant and machine operators	0.008**	-0.002	0.004	0.007*	-0.001	omitted	0.007***	0.041***	-0.004	0.016**	0.005**
Non-citizen	-0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001**	0.000	0.002	-0.000	-0.001
NACE: B, C, D, E	0.047***	0.031***	0.012**	0.027***	0.008	-0.048***	0.066***	0.004	-0.003	0.014**	-0.004
NACE: F	0.023***	0.005	0.011*	0.019***	-0.005	-0.030***	0.019***	-0.006	-0.035**	0.006	-0.007
NACE: G	-0.001	0.000	-0.003	-0.003*	-0.002	-0.019**	-0.006***	0.000	0.001	-0.001	0.000
NACE: H	0.019***	0.006**	0.017***	0.013***	-0.002	-0.008	0.017***	-0.001	-0.001	0.019***	0.002
NACE: I	-0.003	0.001	-0.002	-0.003*	0.011**	0.003	-0.000	0.007**	0.011**	-0.004	-0.006*
NACE: J	0.007***	0.004*	0.002*	0.006***	0.006	-0.009	0.004***	0.001	-0.002	0.009***	0.001
NACE: K	-0.004	-0.002	-0.004**	-0.005***	-0.002	0.001	-0.002	-0.000	0.002	-0.006**	-0.005
NACE: L, M, N	-0.001	-0.002	-0.001	-0.002	-0.001	-0.009	-0.014***	0.000	0.013	0.000	-0.002
NACE: O	-0.002	0.001	-0.002	-0.000	-0.001	0.029	0.015***	0.001	0.005	-0.008**	-0.001
NACE: P	-0.003	-0.006	0.001	0.004	-0.004	0.030	-0.042***	-0.009	-0.001	0.014	0.030*
NACE: Q	-0.043**	0.003	-0.011**	-0.002	0.003	0.049***	-0.033***	-0.002	0.012	0.009	-0.006
NACE: R, S, T, U	-0.000	0.000	-0.002	0.000	0.006	-0.001	-0.010***	0.002	0.014	0.005	0.000
Years in paid work	-0.004	0.021***	0.008**	0.011*	0.041***	-0.013	0.034***	-0.017*	0.058***	-0.023***	0.066***
Years in paid work squared	0.005	-0.010***	-0.006*	-0.014***	-0.018*	0.003	-0.020***	0.014	-0.041***	0.027***	-0.041***
Chronic illnesses	-0.003*	0.001	0.003**	0.002**	-0.001	-0.000	0.000	0.003	0.001	0.003	-0.004**
Permanent contract	0.004***	0.006***	0.001*	0.001	-0.001	0.001	0.001	0.001	0.001	-0.001	0.001
Supervisor	0.006***	0.008***	0.016***	0.004**	0.013***	0.020***	0.003***	0.009***	0.016***	0.000	0.009***
Total explained gap (log points)	0.060***	0.044***	-0.012	-0.018	0.044**	-0.058**	-0.033***	-0.046**	0.033*	-0.048***	-0.058***
Total unexplained gap (log points)	0.060***	0.089***	0.148***	0.130***	0.058**	0.209***	0.142***	0.225***	0.106***	0.216***	0.188***
Total (log points)	0.120***	0.133***	0.136***	0.112***	0.101***	0.152***	0.109***	0.180***	0.139***	0.168***	0.130***

Source: EU-SILC, 2018, men and women aged 18 – 64; * p < 0.10, ** p < 0.05, *** p < 0.01. Baseline model: coefficients from men's equation are used.

Table A1.3. Country level decomposition of the gender gap in hourly labour income (*continuation*)

	Netherlands	Norway	Poland	Portugal	Romania	Serbia	Sweden	Slovenia	Slovak Republic	United Kingdom
Children: age < 3 y/o	-0.000	-0.000	-0.001	-0.000	0.000	0.000	-0.000	0.000	0.002	0.001
Married / Union	-0.000	-0.001	0.001	0.002***	-0.001*	0.001	-0.003*	-0.005**	-0.003***	0.003**
Secondary education	0.001	0.030***	0.010**	0.000	0.014***	0.009**	0.018***	0.010*	0.013***	-0.001
Tertiary education	-0.013***	-0.062***	-0.046***	-0.054***	-0.039***	-0.029***	-0.033***	-0.063***	-0.022***	-0.010**
Managers	0.019***	0.008*	0.002	0.010***	0.006***	0.010***	-0.001	0.002	0.005**	0.020***
Professionals	0.000	-0.028**	-0.051***	-0.043***	-0.033***	-0.031***	-0.033***	-0.064***	-0.021***	0.000
Technicians	-0.004	0.006	-0.004**	0.007***	-0.006***	-0.018***	0.001	0.003	-0.002	0.003
Clerical support workers	-0.007**	-0.002	-0.004*	-0.001	-0.004*	-0.007**	-0.011**	-0.009***	-0.008**	-0.014***
Services and sales workers	-0.011**	-0.002	-0.003	-0.009***	-0.016***	-0.008**	-0.023**	-0.000	-0.006**	-0.000
Skilled agricultural etc.	-0.001	-0.001	0.000	-0.000	0.001	0.000	-0.002	-0.001	0.000	-0.001
Craft and trade workers	0.006	-0.011	0.021***	0.007	0.019***	0.019***	0.042***	0.001	0.015***	0.020***
Plant and machine operators	0.002	-0.004	0.020***	0.002	0.017***	0.017***	0.016**	0.005*	0.006**	0.006*
Non-citizen	0.000	0.000	-0.000	-0.000	omitted	0.001	-0.001	-0.009***	-0.000	-0.000
NACE: B, C, D, E	0.010	-0.005	0.010	0.023***	0.003*	0.010	0.011	0.023	0.014**	0.016
NACE: F	0.001	-0.023*	-0.001	0.011**	0.008*	0.007*	0.013	0.001	0.010**	0.007
NACE: G	-0.004	-0.007	0.007	0.001	-0.008**	0.006	-0.000	0.000	-0.005*	-0.000
NACE: H	0.004	-0.010**	0.003	0.017***	0.017***	0.005	0.002	-0.001	0.006**	0.009*
NACE: I	0.001	0.004	0.003**	0.000	-0.004**	-0.000	-0.000	0.001	-0.001	0.003
NACE: J	0.003	-0.008**	0.002*	0.007***	-0.000	-0.001	0.004	0.002	0.004***	0.006*
NACE: K	0.001	0.000	-0.004**	0.003*	-0.005***	-0.005**	-0.002	-0.003	-0.002**	-0.002
NACE: L, M, N	-0.001	-0.004	-0.000	-0.000	0.001	-0.003	-0.000	0.000	-0.002	0.002
NACE: O	0.002	0.009**	-0.001	0.013***	0.004**	0.003*	-0.000	-0.003	-0.002	-0.001
NACE: P	0.009*	0.035***	-0.002	-0.014**	-0.001	-0.001	0.016	0.009	0.008	0.009
NACE: Q	0.015	0.066***	0.008	-0.025***	0.001	-0.005	-0.003	-0.001	0.003	0.007
NACE: R, S, T, U	-0.000	0.004	0.001	-0.001	0.000	-0.001	-0.000	0.000	-0.000	0.000
Years in paid work	0.054***	0.027*	0.025***	0.023***	0.009**	0.016**	-0.004	-0.002	-0.003	0.036***
Years in paid work squared	-0.034***	-0.025**	-0.026***	-0.019***	-0.008**	-0.009	0.004	0.002	0.001	-0.024***
Chronic illnesses	0.001	0.004**	0.002**	0.004***	0.000	-0.000	0.004*	0.002	0.003***	0.003**
Permanent contract	0.005***	0.010***	-0.001	-0.003**	0.000	0.000	0.002	0.001	0.002**	-0.000
Supervisor	0.024***	0.016***	0.006***	0.012***	0.006***	0.009***	0.002	0.007***	0.003***	0.015***
Total explained gap (log points)	0.082***	0.027	-0.019*	-0.026**	-0.020*	-0.004	0.016	-0.090***	0.018**	0.115***
Total unexplained gap (log points)	0.063***	0.142***	0.115***	0.135***	0.078***	0.133***	0.090***	0.178***	0.123***	0.085***
Total (log points)	0.145***	0.169***	0.096***	0.109***	0.058***	0.129***	0.106***	0.088***	0.141***	0.199***

Source: EU-SILC, 2018, men and women aged 18 – 64; * p < 0.10, ** p < 0.05, *** p < 0.01. Baseline model: coefficients from men's equation are used.

Table A1.4. Decomposition of the 20th / 50th / 90th percentile pension income gap

	Austria			Belgium			Bulgaria			Switzerland		
	20th	50th	90th	20th	50th	90th	20th	50th	90th	20th	50th	90th
Secondary education	0.010	0.011**	0.002	0.001	0.000	0.000	0.002	0.003	0.004	-0.015	-0.005	-0.005*
Tertiary education	0.020	0.038***	0.043***	0.011**	0.009**	0.033***	-0.001	-0.001	-0.003	0.084**	0.061**	0.083***
Married	0.114***	0.076***	0.048**	0.058**	0.039***	0.012	-0.002	0.051**	0.062**	-0.012	0.004	-0.019
Separated	-0.005	-0.005	-0.006	-0.001	0.001	0.003	0.000	-0.000	0.000	-0.008	0.006	0.004
Widowed	-0.127***	-0.097***	-0.086**	-0.024	-0.012	0.011	-0.016	-0.079***	-0.092***	-0.076**	0.006	0.040
Years in paid work	1.270***	0.569***	0.418	0.274*	0.308***	0.120	0.134**	-0.001	0.005	0.454	0.254	0.011
Years in paid work squared	-0.790***	-0.335***	-0.393*	-0.132	-0.190***	-0.097	-0.106*	0.021	-0.020	-0.485**	-0.351**	-0.055
Immigrant status	0.005	0.003	0.001	-0.003	-0.002	-0.000	-0.000	-0.001	-0.002	-0.002	-0.005	-0.001
Age 80+	-0.004	0.001	-0.006	0.001	-0.000	0.000	-0.006**	-0.002	0.001	-0.001	-0.002	-0.004
Chronic illnesses	0.000	0.000	0.000	0.003	0.001	0.000	-0.001	-0.000	0.005	-0.002	-0.002	0.003
Share of private pension income	-0.004	0.001	0.011*	-0.001	-0.002	-0.000	-0.000	-0.000	-0.000	0.003	0.002	0.002
Managers	-0.122**	-0.053**	-0.012	-0.043**	-0.042***	-0.022	-0.020	0.014	0.013	-0.033	0.037	0.046
Professionals	-0.027	-0.012	0.006	-0.006	-0.005	-0.000	0.035	-0.012	-0.004	-0.021	0.020	0.017
Technicians	-0.166**	-0.081***	-0.042	-0.020	-0.022**	-0.009	-0.006	0.004	0.007	-0.002	0.002	0.002
Clerical support workers	0.145***	0.070***	0.035	0.015	0.019**	0.014	0.042	-0.012	-0.010	0.023	-0.046	-0.018
Services and sales workers	0.346***	0.191***	0.079	0.040**	0.041***	0.028	0.051*	-0.012	-0.010	0.056	-0.004	-0.004
Skilled agricultural etc.	0.045	0.025	0.010	-0.014**	-0.015***	-0.008	0.043**	0.003	-0.004	0.003	0.001	0.000
Craft and trade workers	-0.310***	-0.190***	-0.093	-0.085**	-0.099***	-0.052	-0.066	0.021	0.018	-0.063	-0.013	-0.002
Plant and machine operators	-0.217***	-0.122***	-0.063	-0.008	-0.010	-0.006	-0.075	0.029	0.025	-0.018	-0.001	0.001
Elementary occupations	0.291***	0.166***	0.070	0.047*	0.069***	0.036	0.031*	0.003	-0.007	0.006	-0.011	0.001
Total explained gap (log points)	0.477***	0.259***	0.021	0.112***	0.088***	0.063	0.040*	0.029	-0.011	-0.112	-0.044	0.101**
Total unexplained gap (log points)	0.115	0.293***	0.279***	0.114**	0.171***	0.164***	0.152***	0.272***	0.520***	0.369***	0.514***	0.239***

Source: EU-SILC, 2018, men and women aged 65+; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Baseline model: coefficients from men's equation are used, never worked included

Table A1.4. Decomposition of the 20th / 50th / 90th percentile pension income gap (*continuation*)

	Cyprus			Czech Republic			Germany			Denmark		
	20th	50th	90th	20th	50th	90th	20th	50th	90th	20th	50th	90th
Secondary education	0.004	0.013**	-0.001	0.007***	0.005***	0.006**	-0.002	-0.002	-0.002	0.002	0.004	-0.000
Tertiary education	0.004	0.015*	0.044**	0.009***	0.009***	0.019***	0.013	0.020**	0.069***	0.000	0.000	0.000
Married	-0.011	0.072	0.061	0.008	-0.005	-0.017	0.077***	0.046***	0.020*	-0.040***	-0.005	0.038***
Separated	0.004	-0.003	-0.004	-0.000	0.000	0.001	-0.001	-0.001	0.001	-0.000	-0.000	-0.000
Widowed	-0.013	-0.092*	-0.034	-0.034***	-0.017***	-0.030**	-0.100***	-0.061***	-0.036***	-0.008	-0.031**	-0.053**
Years in paid work	0.669*	0.414	0.742*	0.010	0.006	-0.060	1.005***	0.368***	0.360**	-0.004	0.041	0.054
Years in paid work squared	-0.502**	-0.432*	-0.550**	-0.006	-0.003	0.071*	-0.671***	-0.274***	-0.377***	0.009	-0.038	-0.056
Immigrant status	-0.002	-0.005	-0.005	0.000	-0.000	-0.000	omitted	omitted	omitted	-0.000	-0.000	0.000
Age 80+	-0.000	0.003	0.004	0.003**	0.003***	0.003**	omitted	omitted	omitted	0.002	0.002	0.001
Chronic illnesses	-0.001	0.003	0.003	0.000	0.000	-0.000	0.001	0.001	0.003*	0.000	0.000	0.000
Share of private pension income	0.003*	0.004	-0.008	0.000*	0.001**	0.006**	0.000	-0.000	-0.000	omitted	omitted	omitted
Managers	-0.042	0.071**	0.024	0.003*	0.006***	0.004	-0.163***	-0.056**	-0.115*	-0.006	-0.025	0.041
Professionals	-0.022	0.041**	0.009	-0.002	-0.002*	0.002	-0.145***	-0.050**	-0.105*	0.002	0.011	-0.019
Technicians	-0.066	0.097**	-0.046	0.004**	0.005***	0.004	-0.052**	-0.020	-0.047	0.002	0.009	-0.005
Clerical support workers	0.020	-0.033*	0.020	-0.020***	-0.020***	-0.015	0.381***	0.147**	0.329**	0.015	0.028	0.014
Services and sales workers	0.006	-0.003	0.005	-0.006	-0.008**	-0.000	0.248***	0.105***	0.205**	0.016	0.047**	0.011
Skilled agricultural etc.	-0.059***	-0.001	-0.031	-0.001	0.000	0.002*	-0.026***	-0.012**	-0.019**	-0.010	-0.015*	0.002
Craft and trade workers	-0.149**	0.043	-0.130	0.006	0.006	0.000	-0.347***	-0.166***	-0.300**	-0.019	-0.093***	-0.012
Plant and machine operators	-0.010	0.004	-0.010	0.003	0.004*	0.002	0.023	0.011	0.019	-0.001	-0.016	0.001
Elementary occupations	0.158*	-0.053	0.163*	0.000	0.000	0.000	0.050***	0.022**	0.040**	0.005	0.022*	0.002
Total explained gap (log points)	-0.010	0.156**	0.258***	-0.016*	-0.010	-0.003	0.290***	0.079***	0.043	-0.036*	-0.059***	0.020
Total unexplained gap (log points)	0.508***	0.353***	0.406***	0.158***	0.175***	0.092***	0.381***	0.373***	0.320***	0.028	0.080***	0.109**

Source: EU-SILC, 2018, men and women aged 65+; * p < 0.10, ** p < 0.05, *** p < 0.01. Baseline model: coefficients from men's equation are used, never worked included

Table A1.4. Decomposition of the 20th / 50th / 90th percentile pension income gap (*continuation*)

	Estonia			Greece			Spain			Finland		
	20th	50th	90th	20th	50th	90th	20th	50th	90th	20th	50th	90th
Secondary education	-0.001	-0.000	-0.000	0.003***	0.016***	0.008***	-0.000	-0.000	-0.000	-0.002	-0.002	-0.001
Tertiary education	-0.002	-0.000	-0.006	0.004***	0.021***	0.021***	0.001	0.005	0.004	0.011**	0.013**	0.029***
Married	0.017	0.010	-0.011	-0.012	0.027*	0.026**	0.088***	0.072***	0.011	0.011	0.062***	0.032*
Separated	-0.000	-0.000	0.000	0.003*	0.001	-0.002	-0.003	0.004	0.002	0.003	-0.002	-0.001
Widowed	-0.003	-0.009	0.018	-0.005	-0.011	-0.019*	-0.054***	-0.044**	-0.017*	-0.054*	-0.084***	-0.037
Years in paid work	0.081***	0.007	-0.045	0.240***	0.177***	0.100***	0.490***	0.828***	0.170***	0.192	0.133	0.037
Years in paid work squared	-0.063***	0.004	0.057*	-0.194***	-0.152***	-0.082***	-0.335***	-0.607***	-0.137***	-0.115	-0.079	-0.035
Immigrant status	0.001	0.002	0.012***	0.001	0.000	0.000	0.007**	0.007**	0.002	0.000	-0.000	-0.001
Age 80+	-0.011***	-0.006***	0.000	0.004***	0.004***	0.001	0.001	0.002	0.001	0.024***	0.022***	0.001
Chronic illnesses	-0.003	-0.001	-0.005*	0.001*	0.001**	0.001	0.003**	0.002	0.002	0.002	0.001	0.003
Share of private pension income	0.000	0.000	0.001	-0.000	-0.000	-0.000	0.003***	0.010***	0.010***	0.002	0.003	0.006
Managers	-0.027**	-0.003	0.023	0.004***	0.005***	0.007***	-0.008	-0.024*	0.007	-0.036	-0.020	0.042**
Professionals	0.051***	0.006	-0.043*	0.002*	0.003**	0.002*	0.002	0.010	-0.005	-0.031	-0.014	0.019
Technicians	0.022*	0.002	-0.020	0.003***	0.005***	0.004***	-0.001	-0.007	-0.002	0.008	0.005	0.002
Clerical support workers	0.100***	0.017*	-0.054*	-0.001	-0.002*	-0.001	-0.001	0.009	0.001	0.076	0.083*	0.020
Services and sales workers	0.090***	0.020**	-0.057*	-0.000	-0.001	0.000	0.024	0.088**	0.031**	0.171*	0.129*	0.023
Skilled agricultural etc.	0.016	0.003	-0.007	0.171***	0.090***	0.006	-0.013	-0.038***	-0.007*	-0.015	-0.010	-0.002
Craft and trade workers	-0.199***	-0.029**	0.133*	0.019***	0.001	0.004	-0.020	-0.131***	-0.037*	-0.182	-0.140	-0.031
Plant and machine operators	-0.124***	-0.020**	0.079*	0.005	0.005	-0.001	0.001	-0.034	-0.015	-0.091	-0.079*	-0.012
Elementary occupations	0.094***	0.019**	-0.055	0.000	0.000	0.000	0.053	0.119***	0.025*	0.103*	0.071*	0.013
Total explained gap (log points)	0.038*	0.021**	0.020	0.246***	0.192***	0.075***	0.239***	0.270***	0.046**	0.078*	0.093***	0.107***
Total unexplained gap (log points)	-0.089***	-0.023*	0.042	0.062***	0.219***	0.113***	-0.111***	0.245***	0.066**	0.052	0.081**	0.154***

Source: EU-SILC, 2018, men and women aged 65+; * p < 0.10, ** p < 0.05, *** p < 0.01. Baseline model: coefficients from men's equation are used, never worked included

Table A1.4. Decomposition of the 20th / 50th / 90th percentile pension income gap (*continuation*)

	France			Croatia			Hungary			Ireland		
	20th	50th	90th	20th	50th	90th	20th	50th	90th	20th	50th	90th
Secondary education	0.007**	0.007***	0.004	0.020**	0.023***	0.003	0.080***	0.040***	0.006*	-0.002	-0.008	-0.013
Tertiary education	-0.001	-0.001	-0.005	0.009**	0.017***	0.034***	0.047***	0.032***	0.021***	-0.004	-0.014*	-0.030**
Married	0.045**	0.044***	0.032	0.043	0.064***	0.031	-0.046	0.027	0.027	0.043***	0.144***	0.041
Separated	-0.001	-0.001	-0.000	-0.001	-0.001	-0.002	0.000	0.000	-0.000	-0.002	-0.003	0.000
Widowed	-0.061***	-0.047***	-0.073***	-0.027	-0.056**	-0.059	-0.134**	-0.117***	-0.067***	-0.057***	-0.092***	-0.047*
Years in paid work	0.435***	0.107	-0.088	0.833***	0.275***	-0.042	0.498*	0.120**	-0.146	0.286***	0.661***	-0.186
Years in paid work squared	-0.261***	-0.081	0.072	-0.415***	-0.079	0.136	-0.319	-0.052	0.146	-0.226**	-0.487***	0.084
Immigrant status	-0.008**	-0.006**	-0.005**	-0.001	0.006***	0.015***	-0.000	-0.000	-0.000	0.000	-0.000	-0.000
Age 80+	0.001	-0.004**	-0.005*	-0.001	-0.007***	-0.004	-0.010**	-0.002	0.005**	0.001	0.002	0.002
Chronic illnesses	0.001	0.000	-0.001	-0.001	0.003*	0.001	-0.001	0.001	-0.000	-0.000	0.000	0.000
Share of private pension income	-0.000	-0.000	0.002	-0.000	0.000	0.000	omitted	omitted	omitted	0.003*	0.011*	0.007
Managers	-0.040***	-0.010**	-0.074***	-0.025**	-0.001	0.039**	-0.093**	-0.036***	0.030**	-0.019**	-0.081***	-0.036
Professionals	-0.023*	-0.005	-0.046**	0.010	0.001	-0.009	-0.043	-0.017	0.014	0.024	0.091***	-0.022
Technicians	-0.047***	-0.018***	-0.120***	-0.031	-0.006	-0.000	0.124**	0.054***	-0.031*	-0.006	-0.021*	-0.011
Clerical support workers	0.119***	0.061***	0.316***	0.026*	0.018*	-0.001	0.411***	0.169***	-0.071	0.021	0.099***	0.077
Services and sales workers	0.110***	0.054***	0.225***	0.029**	0.019**	0.007	0.153***	0.065***	-0.024	-0.090***	-0.334***	-0.252*
Skilled agricultural etc.	-0.028**	-0.016**	-0.041**	0.032***	0.015***	0.005	0.042	0.016	-0.004	0.017*	0.080***	0.056
Craft and trade workers	-0.177***	-0.110***	-0.353***	-0.086***	-0.047**	-0.008	-0.745***	-0.338***	0.119	0.019*	0.044**	0.028
Plant and machine operators	-0.086***	-0.056***	-0.175***	-0.048***	-0.022*	-0.009	-0.255***	-0.115***	0.039	-0.028**	-0.117***	-0.084
Elementary occupations	0.120***	0.089***	0.268***	0.042***	0.024***	0.004	0.467***	0.189***	-0.061	0.002	0.010	0.007
Total explained gap (log points)	0.105***	0.009	-0.067*	0.408***	0.245***	0.141***	0.176**	0.038	0.004	-0.017	-0.017	-0.377***
Total unexplained gap (log points)	0.310***	0.263***	0.322***	-0.154***	0.083***	0.238***	0.088	0.083***	0.178***	0.052	0.246***	0.601***

Source: EU-SILC, 2018, men and women aged 65+; * p < 0.10, ** p < 0.05, *** p < 0.01. Baseline model: coefficients from men's equation are used, never worked included

Table A1.4. Decomposition of the 20th / 50th / 90th percentile pension income gap (*continuation*)

	Iceland			Italy			Lithuania			Luxembourg		
	20th	50th	90th	20th	50th	90th	20th	50th	90th	20th	50th	90th
Secondary education	0.050	0.006	0.262**	0.004**	0.006***	0.011***	-0.010*	-0.002	0.001	0.005	0.003	0.002
Tertiary education	0.013	0.013	0.071	0.003**	0.005**	0.024**	-0.000	0.001	0.006	0.050**	0.064***	0.039**
Married	-0.056*	0.051	-0.092	0.063***	0.021*	0.069***	-0.033	-0.024	-0.159	0.011	0.025	-0.003
Separated	0.001	-0.002	0.008	0.002	0.000	-0.002	0.001	0.001	0.002	-0.003	-0.006	0.019
Widowed	-0.022	-0.132***	-0.203	-0.083***	-0.044***	-0.059***	0.022	0.008	0.157	-0.013	-0.006	0.009
Years in paid work	0.090	0.309*	1.349*	0.373***	0.151*	0.167*	0.120	-0.011	-0.075	1.671**	1.145***	0.012
Years in paid work squared	-0.071	-0.390**	-1.588*	-0.284**	-0.123*	-0.099	-0.035	0.074**	0.113	-0.978**	-0.751***	0.052
Immigrant status	omitted	omitted	omitted	0.003*	0.001	0.002	-0.002	0.001	-0.001	0.006	0.005	0.002
Age 80+	0.010	0.020	0.004	0.004**	0.003***	0.002	-0.011**	-0.002	0.008	-0.000	-0.008	-0.006
Chronic illnesses	0.004	0.003	0.001	0.000	0.002**	0.000	-0.005	-0.002	0.004	0.003	-0.001	0.001
Share of private pension income	omitted	omitted	omitted	omitted	omitted	omitted	omitted	omitted	omitted	-0.009	-0.003	0.006
Managers	omitted	omitted	omitted	0.014***	0.013***	0.051***	-0.034**	-0.008	0.018	-0.193**	-0.121**	-0.023
Professionals	omitted	omitted	omitted	-0.025***	-0.021***	-0.009	0.119***	0.026	-0.052	-0.057	-0.037	0.000
Technicians	omitted	omitted	omitted	0.018***	0.014***	0.007**	-0.032*	-0.012	0.014	-0.149	-0.089	-0.006
Clerical support workers	omitted	omitted	omitted	-0.012***	-0.007***	-0.003	0.063***	0.017	0.004	0.207	0.123*	0.005
Services and sales workers	omitted	omitted	omitted	-0.007	-0.003	-0.004	0.105***	0.026	-0.035	0.188*	0.132**	0.016
Skilled agricultural etc.	omitted	omitted	omitted	0.004**	0.002*	0.001	-0.009	-0.003	0.000	0.035	0.020	0.002
Craft and trade workers	omitted	omitted	omitted	0.023***	0.004	-0.002	-0.074**	-0.021	0.015	-0.312**	-0.194***	-0.024
Plant and machine operators	omitted	omitted	omitted	0.017***	0.008***	-0.001	-0.283***	-0.096*	0.050	-0.314**	-0.216***	-0.023
Elementary occupations	omitted	omitted	omitted	omitted	omitted	omitted	0.164***	0.053**	-0.027	0.420**	0.236***	-0.005
Total explained gap (log points)	0.019	-0.122	-0.186	0.117***	0.031	0.153***	0.067**	0.024	0.043	0.566***	0.321***	0.076
Total unexplained gap (log points)	0.041	0.195**	0.590	0.318***	0.274***	0.154***	0.025	0.123***	0.185**	0.251	0.395***	-0.030

Source: EU-SILC, 2018, men and women aged 65+; * p < 0.10, ** p < 0.05, *** p < 0.01. Baseline model: coefficients from men's equation are used, never worked included

Table A1.4. Decomposition of the 20th / 50th / 90th percentile pension income gap (*continuation*)

	Latvia			Malta			Netherlands			Norway		
	20th	50th	90th	20th	50th	90th	20th	50th	90th	20th	50th	90th
Secondary education	-0.000	0.000	-0.000	-0.004	-0.004	-0.001	0.025***	0.020***	0.002	0.004	0.001	0.001
Tertiary education	0.001	-0.001	-0.002	-0.007	-0.005	-0.011	0.048***	0.065***	0.073***	0.006	0.006	0.013
Married	-0.003	0.007	0.026	0.059***	0.034***	0.019	-0.001	-0.014	0.016	0.011	0.013	0.033
Separated	-0.000	-0.000	-0.002	-0.000	-0.000	-0.000	0.002	0.006	0.006	-0.045*	-0.038*	0.018
Widowed	-0.005	-0.009	0.001	-0.017*	-0.014**	-0.007	-0.050**	-0.011	-0.046*	0.001	-0.001	-0.002
Years in paid work	0.169***	0.039	0.173**	0.607**	0.163	0.336	0.725***	0.424***	0.347*	0.235	0.274	0.102
Years in paid work squared	-0.121***	0.004	-0.153**	-0.423**	-0.168	-0.247	-0.465***	-0.311***	-0.246*	-0.164	-0.261*	-0.125
Immigrant status	-0.001	0.000	0.003	omitted	omitted	omitted	0.005	0.002	-0.011*	0.001	0.000	-0.002
Age 80+	-0.002	0.010***	0.019**	omitted	omitted	omitted	0.005	0.003	0.003	0.014*	0.001	-0.001
Chronic illnesses	-0.001	-0.000	-0.005	0.001	0.000	-0.001	0.004	0.004*	0.005	0.006	0.002	-0.001
Share of private pension income	omitted	omitted	omitted	omitted	omitted	omitted	0.000	0.000	0.000	0.006**	0.006*	0.008
Managers	-0.009	-0.004	-0.015	-0.009*	-0.002	-0.007	-0.031	0.011	0.028	0.041*	0.048**	0.052***
Professionals	0.122***	0.050*	0.195**	0.003	0.000	0.003	-0.042	-0.002	-0.003	-0.015	-0.016	-0.009
Technicians	0.075***	0.030*	0.137**	-0.001	-0.001	-0.003	-0.013	-0.003	-0.005	0.018	0.019	0.009
Clerical support workers	0.115***	0.048*	0.246***	0.000	0.000	0.000	0.020	0.017	0.023	-0.004	0.003	-0.007
Services and sales workers	0.137***	0.057**	0.256***	0.008	0.011*	0.009	0.120**	0.066**	0.034	-0.060	-0.015	-0.031
Skilled agricultural etc.	0.047***	0.021**	0.070**	-0.006*	-0.007**	-0.005**	-0.016**	-0.012**	-0.005	-0.001	-0.004	0.003
Craft and trade workers	-0.309***	-0.141**	-0.569***	-0.027**	-0.042***	-0.053**	-0.083**	-0.060**	-0.027	0.030	0.012	0.012
Plant and machine operators	-0.351***	-0.169**	-0.659***	-0.003	-0.007	-0.006	-0.035**	-0.017*	-0.012	0.021	0.003	0.012
Elementary occupations	0.180***	0.084**	0.327***	0.006	0.024***	0.021**	0.029	0.031**	0.016	0.000	0.000	0.000
Total explained gap (log points)	0.045*	0.026	0.050	0.187*	-0.019	0.049	0.245***	0.220***	0.199***	0.106	0.053	0.086
Total unexplained gap (log points)	-0.016	0.109***	0.187***	0.169	0.351***	0.031	0.234***	0.244***	0.223***	0.153**	0.133**	0.081

Source: EU-SILC, 2018, men and women aged 65+; * p < 0.10, ** p < 0.05, *** p < 0.01. Baseline model: coefficients from men's equation are used, never worked included

Table A1.4. Decomposition of the 20th / 50th / 90th percentile pension income gap (*continuation*)

|	Poland			Portugal			Romania			Serbia		
	20th	50th	90th	20th	50th	90th	20th	50th	90th	20th	50th	90th
Secondary education	0.003	0.006***	0.002	0.002**	0.009***	0.023***	0.040***	0.057***	0.023***	0.055***	0.026***	-0.013
Tertiary education	0.003	0.006**	0.011**	-0.001	-0.003	-0.016	0.009***	0.013***	0.015**	0.052***	0.042***	0.021*
Married	0.047	0.020	0.021	0.127***	0.125***	0.184***	0.005	-0.011	-0.040	0.021	0.007	0.025
Separated	-0.003	-0.002	-0.002	-0.009**	-0.008**	-0.008	-0.000	-0.000	-0.000	-0.000	-0.000	0.001
Widowed	-0.041	-0.010	-0.014	-0.168***	-0.122***	-0.197***	0.026	0.034	0.056	-0.049	-0.003	-0.011
Years in paid work	0.156**	0.100***	-0.023	0.140***	0.154**	0.004	0.166**	0.054	-0.231**	2.470***	0.407***	0.077
Years in paid work squared	-0.105*	-0.042**	0.050	-0.116***	-0.166***	-0.030	-0.068	-0.018	0.175**	-1.359***	-0.183***	0.027
Immigrant status	0.000	0.000	0.000	-0.001	0.004	-0.004	0.000	-0.000	-0.000	-0.001	-0.001	0.002
Age 80+	-0.001	-0.000	-0.001	0.008***	0.004*	0.001	0.006**	0.001	-0.004	-0.000	-0.000	-0.001
Chronic illnesses	-0.002	-0.000	-0.000	0.001	0.002	0.001	0.003	0.003	0.005	0.004	0.003	0.004
Share of private pension income	0.000	0.000	0.000	0.001	0.003	0.004	omitted	omitted	omitted	omitted	omitted	omitted
Managers	0.001	0.005**	0.015***	0.011**	0.028***	0.053***	-0.010**	0.002	0.007	-0.118***	-0.019**	0.015
Professionals	-0.004	-0.009**	-0.011	-0.006**	-0.014***	-0.017**	0.011	-0.003	-0.007	0.011	0.002	0.000
Technicians	-0.003	-0.004*	-0.006**	0.025***	0.062***	0.045***	-0.023**	0.008	0.013	-0.051**	-0.009	-0.004
Clerical support workers	0.003	-0.002	0.003	-0.005*	-0.008**	-0.001	0.032***	-0.003	-0.008	0.151***	0.027**	0.002
Services and sales workers	-0.001	-0.004	-0.004	-0.012***	-0.018***	0.002	0.067***	-0.004	-0.018	-0.006	-0.001	-0.000
Skilled agricultural etc.	0.050***	0.013***	-0.003	0.018***	0.020***	0.002	0.148***	0.032	-0.008	0.069**	0.015*	0.006
Craft and trade workers	-0.000	0.002	0.012**	0.004	0.004	0.000	-0.186***	-0.004	0.029	-0.341***	-0.082***	0.008
Plant and machine operators	0.010	0.013*	0.030***	0.013***	0.012**	-0.002	-0.104***	-0.005	0.017	-0.243***	-0.044**	-0.000
Elementary occupations	0.000	0.000	0.000	0.000	0.000	0.000	0.096***	0.018	-0.007	0.139***	0.025***	-0.005
Total explained gap (log points)	0.112***	0.092***	0.081***	0.035	0.089***	0.044	0.217***	0.175***	0.017	0.803***	0.209***	0.154***
Total unexplained gap (log points)	0.051	0.167***	0.218***	0.252***	0.278***	0.248***	0.195***	0.220***	0.235***	-0.400***	0.075***	0.025

Source: EU-SILC, 2018, men and women aged 65+; * p < 0.10, ** p < 0.05, *** p < 0.01. Baseline model: coefficients from men's equation are used, never worked included

Table A1.4. Decomposition of the 20th / 50th / 90th percentile pension income gap (*continuation*)

	Sweden			Slovenia			Slovak Republic			United Kingdom		
	20th	50th	90th	20th	50th	90th	20th	50th	90th	20th	50th	90th
Secondary education	0.005	0.006	0.005	0.042***	0.027***	0.004	0.010**	0.004	0.001	0.003	0.004	-0.001
Tertiary education	-0.005	-0.009*	-0.008	0.044***	0.055***	0.080***	0.004**	0.007***	0.016***	0.007**	0.015***	0.015***
Married	0.021	0.017*	0.004	0.123***	0.053**	0.030	0.029	0.006	-0.039	0.036***	0.032***	0.031*
Separated	0.002	0.000	0.001	0.005	0.003	0.004	-0.001	0.001	0.002	-0.001	-0.000	0.000
Widowed	-0.022	-0.015	-0.024	-0.134***	-0.100***	-0.024	-0.062***	-0.085***	0.020	-0.038***	-0.023*	-0.036**
Years in paid work	0.344*	0.095	-0.065	0.480*	0.140	-0.106	0.039	0.009	-0.014	0.389*	0.399*	0.337*
Years in paid work squared	-0.280*	-0.085	0.033	-0.244	-0.057	0.123	0.001	-0.001	0.044	-0.296*	-0.407**	-0.395***
Immigrant status	0.002	0.003	0.004	omitted	omitted	omitted	0.000	0.000	-0.000	0.000	0.000	0.000
Age 80+	0.003	0.006	0.027**	-0.003	-0.003	-0.001	0.003*	0.004**	0.007***	0.001	-0.002	0.003
Chronic illnesses	0.005	0.004	0.010	-0.000	0.001	-0.001	0.000	0.000	-0.001	-0.000	0.000	0.001
Share of private pension income	0.003	0.005	0.011	0.000	0.001	0.001	0.000	0.000	0.001	0.012***	0.010**	0.013
Managers	-0.035	0.003	0.104**	-0.108*	-0.041	-0.066	-0.005	0.000	0.007	-0.047	-0.013	0.027
Professionals	0.026	0.002	-0.030	0.052	0.022	0.051*	0.005	-0.002	-0.001	-0.002	-0.000	0.001
Technicians	-0.030	0.003	0.031	0.036	0.016	0.035	-0.005	0.000	0.000	0.009	0.003	0.000
Clerical support workers	0.083	0.033	-0.088	0.103*	0.052**	0.093**	0.036	0.007	0.013	0.063	0.027	-0.004
Services and sales workers	0.121	0.030	-0.028	0.024	0.013	0.021	0.019	0.003	0.003	0.114	0.049	0.024
Skilled agricultural etc.	-0.058	-0.014	0.010	0.002	0.001	0.002	0.005	0.002	0.003	-0.017*	-0.012	-0.003
Craft and trade workers	-0.140	-0.033	0.048	-0.274**	-0.148***	-0.228***	-0.051	-0.010	-0.013	-0.135*	-0.094	-0.033
Plant and machine operators	-0.063	-0.015	0.029	0.003	0.002	0.003	-0.042	-0.000	-0.010	-0.068*	-0.050	-0.013
Elementary occupations	0.059	0.017	-0.016	0.098**	0.048**	0.073**	0.046	0.015	0.007	0.037	0.026	0.007
Total explained gap (log points)	0.043	0.052*	0.059	0.249***	0.086***	0.094*	0.034**	-0.039**	0.047**	0.067	-0.036	-0.025
Total unexplained gap (log points)	0.223***	0.210***	0.307***	-0.094	0.080**	0.237***	0.063***	0.083***	0.024	0.339***	0.443***	0.457***

Source: EU-SILC, 2018, men and women aged 65+; * p < 0.10, ** p < 0.05, *** p < 0.01. Baseline model: coefficients from men's equation are used, never worked included

Figure A1.1. Gender pension gap (GPG) in percentage
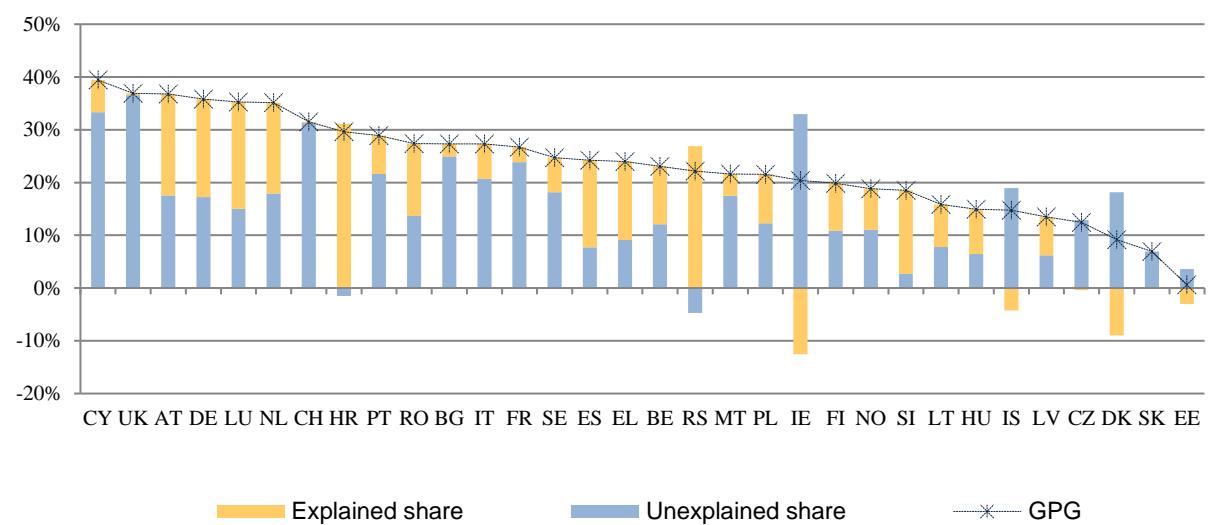
Source: EU-SILC, 2018, men and women aged 65+

Table A1.5. Mean values for gender attitude variables

Country	Index based on v76 – v81	Index based on v72 – v75	When a mother works the children suffer (v72)	What most women want is home and children (v73)	Family life suffers when the woman has a full-time job (v74)	A man's job is to earn money; a woman's job is to look after the home and family (v75)	Men make better political leaders than women do (v76)	A university education is more important for a boy than for a girl (v77)	Men make better business executives than women (v78)	When jobs are scarce, men have more right to a job than women (v81)
Austria	78.13	56.29	2.57	2.81	2.36	3.01	3.28	3.52	3.39	3.96
Bulgaria	60.89	48.49	2.88	2.19	2.38	2.37	2.62	3.22	2.77	3.30
Croatia	73.51	56.38	2.66	2.46	2.67	2.98	3.14	3.40	3.26	3.75
Czech Republic	62.67	50.26	2.74	2.14	2.62	2.53	2.67	3.13	2.82	3.53
Denmark	84.64	78.31	3.31	3.30	3.22	3.57	3.46	3.66	3.41	4.48
Estonia	68.47	55.59	2.86	2.42	2.64	2.74	2.74	3.32	2.90	3.94
Finland	80.61	69.40	3.13	2.86	3.10	3.24	3.31	3.53	3.32	4.32
France	84.60	67.18	3.01	2.79	2.85	3.40	3.45	3.69	3.55	4.31
Germany	80.43	63.79	2.83	2.92	2.62	3.28	3.36	3.52	3.38	4.20
Hungary	66.24	51.42	2.56	2.49	2.51	2.62	2.83	3.25	2.93	3.60
Iceland	86.80	70.85	3.06	2.81	3.13	3.50	3.52	3.68	3.58	4.50
Italy	70.09	49.76	2.45	2.45	2.26	2.81	3.14	3.31	3.21	3.45
Lithuania	60.29	43.57	2.45	1.96	2.33	2.49	2.60	3.10	2.73	3.42
Netherlands	78.37	67.88	2.98	2.98	2.78	3.41	3.23	3.49	3.28	4.18
Norway	91.94	80.94	3.30	3.25	3.49	3.68	3.72	3.86	3.65	4.73
Poland	65.83	49.85	2.46	2.37	2.48	2.67	2.84	3.17	2.98	3.57
Romania	60.10	50.69	2.63	2.21	2.65	2.58	2.79	3.23	2.90	2.90
Serbia	66.12	54.68	2.54	2.68	2.56	2.78	2.89	3.27	2.99	3.44
Slovak Republic	53.85	50.27	2.78	2.14	2.69	2.43	2.52	2.93	2.61	2.94
Slovenia	72.06	56.56	2.82	2.47	2.49	3.01	3.00	3.36	3.08	3.93
Spain	81.66	72.18	3.05	3.19	3.03	3.40	3.46	3.59	3.51	4.05
Sweden	90.79	79.32	3.32	3.25	3.31	3.64	3.69	3.80	3.69	4.62
Switzerland	78.89	60.32	2.79	2.80	2.45	3.19	3.33	3.52	3.37	4.04
Great Britain	77.16	63.76	2.90	2.81	2.80	3.14	3.21	3.42	3.28	4.11

Source: EVS, men and women, 18+, variables v72 – v 78: 4 – point scale, variable v81: 5-point scale

Table A1.6. Correlations of gender attitudes (means) with pension income and unexplained gender pension gap

	Unex-plained differ-ence	Average pension in-come		Unexplained difference
		Men	Women	
	Men and Women, age 18+			Men and Women, age 50+
Index 1 (v76 – v81)	0.273	0.807***	0.832***	0.267
Index 2 (v72 – v75)	0.107	0.710***	0.741***	0.160
When a mother works for pay, the children suffer (v72)	0.178	0.523***	0.588***	0.165
A job is alright but what most women want is home and children (v73)	0.217	0.744***	0.743***	0.230
All in all, family life suffers when the woman has a full-time job (v74)	-0.059	0.390*	0.461**	-0.020
A man's job is to earn money; a woman's job is to look after the home and family (v75)	0.243	0.811***	0.825***	0.246
On the whole, men make better po-litical leaders than women do (v76)	0.335	0.803***	0.823***	0.327
A university education is more im-portant for a boy than for a girl (v77)	0.288	0.782***	0.801***	0.328
On the whole, men make better business executives than women (v78)	0.345*	0.797***	0.811***	0.321
When jobs are scarce, men have more right to a job than women (v81)	0.250	0.794***	0.818***	0.210
N	24	24	24	24

Source: EVS

Table A1.7. Per cent of respondents supporting gender inequality (values 1 – "strongly agree" and 2 – "agree" are coded as 1, other values are 0)

Country	When a mother works the children suffer (v72)	What most women want is home and children (v73)	Family life suffers when the woman has a full-time job (v74)	A man's job is to earn money; a woman's job is to look after the home and family (v75)	Men make better political leaders than women do (v76)	A university education is more important for a boy than for a girl (v77)	Men make better business executives than women (v78)	When jobs are scarce, men have more right to a job than women (v81)
Sweden	9.57	12.96	14.51	3.70	3.09	0.93	2.16	1.85
Denmark	11.61	12.15	20.65	5.16	5.81	1.94	5.27	1.94
Finland	11.14	29.14	17.71	10.29	6.29	1.14	5.71	3.14
Norway	23.98	24.80	16.67	7.72	6.10	2.03	6.10	3.25
Iceland	19.07	48.45	22.68	6.96	4.90	0.26	2.58	2.06
Netherlands	18.95	28.13	38.98	7.18	7.49	3.97	5.50	5.96
Spain	26.28	22.44	31.09	13.78	10.26	6.73	6.73	12.82
Germany	29.00	26.00	45.20	9.80	8.40	3.40	4.60	8.00
Great Britain	23.92	33.40	38.14	18.56	9.07	3.71	8.45	11.55
Switzerland	36.72	38.93	60.55	16.93	10.68	5.99	7.42	11.33
France	38.97	42.68	47.84	18.35	15.88	4.95	10.52	15.26
Slovenia	38.54	62.50	59.03	23.96	18.06	8.33	12.85	13.89
Austria	51.36	35.98	66.50	29.53	20.10	8.44	13.90	14.89
Croatia	50.00	62.57	47.91	30.89	14.14	4.97	8.12	26.18
Serbia	52.58	47.77	53.95	39.18	23.71	9.97	20.27	17.53
Estonia	30.82	56.90	46.98	39.22	39.44	10.34	31.03	11.64
Bulgaria	28.57	65.18	53.13	50.89	32.37	8.04	28.57	25.67
Italy	62.17	57.98	73.19	38.78	14.45	10.65	11.22	26.43
Hungary	53.35	57.42	53.35	41.87	33.01	11.72	23.44	22.25
Czech Republic	36.90	74.45	43.45	46.07	38.21	17.69	29.91	21.83
Poland	60.19	67.31	55.02	40.78	28.48	12.30	18.45	28.16
Romania	41.64	62.46	43.40	48.39	36.95	14.96	31.96	40.18
Lithuania	60.92	87.93	66.09	50.29	35.92	12.07	29.02	18.68
Slovak Republic	37.72	75.67	41.07	54.46	46.21	32.59	45.31	39.96

Source: EVS, women aged 50+

ANNEX 2: LABOUR INCOME AND PENSION INCOME GAP IN DIFFERENT GROUPS OF COUNTRIES

A.1. Beveridgean / Bismarckian typology

The assigning of countries either to the Beveridgean or Bismarckian group was based on Table 1 from Meyer (2017). This data source was used as it covers the majority of EU countries. Table A2.1 presents the results of the analysis of the relationship between hourly labour income and pension income in these two groups as well as the minimum values of the gaps.

Table A2.1. Descriptive statistics of the relationship between the hourly wage and the pension income gap (Beveridgean / Bismarckian typology)

		Beveridgean group[26]	Bismarckian group[27]	Bismarckian group without CEE[28]
Pearson correlation raw gap in means (in log points)	Coefficient	0.7883	0.0472	0.7615
	P-value	0.0625	0.8727	0.0171
Pearson correlation unexplained gap in means	Coefficient	0.4215	-0.5478	0.1080
	P-value	0.4052	0.0426	0.7822
Gender pension gap (means) in % (pooled countries)	Mean value	28%	32%	29%
Gender pension gap (means) in %	Min value	9 % (DK)	0.6% (EE)	20% (IE)
	Max value	37 % (UK)	37% (AT)	37% (AT)
Gender labour income gap (means) in % (pooled countries)	Mean value	17%	15%	14%
Gender labour income gap (means) in %	Min value	10% (PT)	7% (SI)	19% (DE)
	Max value	18% (UK)	25% (CZ)	8% (ES)
Gender pension gap means (unexplained), share[29]	Min value	0.51 (NL)	0.14 (SI)	0.31 (ES)
	Max value	0.99 (UK)	0.89 (FR)	0.89 (FR)
Gender labour income gap (unexplained), share	Min value	0.43 (NL)	0.57 (IE)	0.57 (IE)
	Max value	0.85 (SE)	0.94 (EL)	0.94 (EL)

Source: EU-SILC, 2018

The values in Table A2.1 provide evidence of a high level of heterogeneity in countries that belong to one pension system when it comes to raw values and unexplained shares of labour income and the pension income gap. The relationship between the labour income gap and the pension income gap (if the raw gap at means values are considered) is quite close in Beveridgean and Bismarckian countries (after excluding the CEE): the coefficients are relatively high and positive. As it is assumed that in the Beveridgean system the pension benefit is guaranteed to everyone and unrelated to employment, it was expected that the correlation coefficient will be lower in Beveridgean countries. The obtained result can be explained either by (1) time lag problem as the gap in labour income and pension income are considered in one year; (2) by changes in both system due to the introduction of the three-pillar system in EU countries.

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[26] Countries included: DK, FI, NL, PT, SE, UK
[27] Countries included: AT, BE, CZ, EE, FR, DE, EL, HU, IE, IT, LU, PL, SI, ES
[28] Countries included: AT, BE, FR, DE, EL, IE, IT, LU, ES
[29] For share values from 0 to 1 are considered to see the explanatory power of model used.

A.2. Scandinavian / Anglo-Saxon / Continental / Southern European typology

Another typology that is widely used is grouping countries based on the capacity of the system to solve the problem of poverty / inequality and support high levels of employment (Böheim, 2014). As expected, the level of employment among women also varies in these systems, being the highest in Scandinavian countries and the lowest in Southern-European (if employment rates of women in 2000 considered). To check whether there is any difference regarding pension / hourly wages gap and relationships between them across these groups, the same statistics as in the table above are presented in Table A2.2, accompanied with information on women employment rates in 2000 (Eurostat[30]). The countries assigned to particular groups is also based on the paper by Aiginger and Leoni (2009).

Table A2.2. Descriptive statistics of the relationship between hourly wage and pension income gap (Scandinavian / Anglo-Saxon / Continental / Southern European typology)

		Scandinavian[31]	Anglo-Saxon[32]	Continental[33]	Mediterranean[34]
Pearson correlation raw gap on quantiles[35] (in log points)	Coefficient	0.5476	0.6101	0.2665	0.5221
	P-value	0.0031	0.0072	0.0768	0.0011
Pearson correlation unexplained gap on quantiles	Coefficient	0.5210	0.6362	0.2206	0.5578
	P-value	0.0053	0.0045	0.1453	0.0004
Gender pension gap (means) in % (pooled countries)	Mean value	18%	35%	31%	27%
Gender pension gap (means) in %	Min value	9% (DK)	20% (IE)	23% (BE)	24% (EL/ES)
	Max value	25 % (SE)	37% (UK)	37% (AT)	29% (PT)
Gender labour income gap (means) in % (pooled countries)	Mean value	12%	18%	17%	11%
Gender labour income gap (means) in %	Min value	12% (SE)	16% (IE)	10% (BE)	8% (ES)
	Max value	13% (FI)	18% (UK)	19% (DE)	12% (IT)
Gender pension gap means (unexplained), share[36]	Min value	0.54 (FI)	0.99 (UK)	0.48 (AT)	0.31 (ES)
	Max value	0.73 (SE)	1.62 (IE)	0.89 (FR)	0.75 (IT)
Gender labour income gap (unexplained), share	Min value	0.50(FI)	0.43 (UK)	0.43 (NL)	0.94 (EL)
	Max value	0.85 (SE)	0.57 (IE)	0.71 (BE)	1.30 (IT)
Employment rate women, age 20 – 64, 2000 in %	Min value	68.2 (FI)	59.2 (IE)	56 (BE)	42.2 (IT)
	Max value	74.6 (DK)	66.8 (UK)	64.1 (NL)	65.1 (PT)

Source: EU-SILC, 2018

The data does not support our expectation that in each Scandinavian country the gender pension gap (due to high employment rates of women in 2000, high level of childcare facilities and

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[30] Employment rate by sex, age group 20-64. Available at: https://ec.europa.eu/eurostat/data-browser/view/t2020_10/default/table?lang=en

[31] Countries included: DK, FI, SE

[32] Countries included: UK, IE

[33] Countries included: DE, FR, BE, NL, AT

[34] Countries included: EL, IT, PT, ES

[35] Percentiles considered due to low number of cases in the group

[36] For share values from 0 to 1 are considered to see the explanatory power of model used.

support for the dual-earner model) and the gender pay gap will be the lowest. The gender wage gap in Scandinavian countries is almost the same as in Mediterranean countries, that are usually considered as states with a low level of support for the employment of women due to the importance of providing care within the family. It is true that in Scandinavian countries the pension gap is the lowest (when all countries are grouped), but being the lowest it reaches almost 20%. On the other hand, the gap in Mediterranean countries is not the highest, although this system is characterised by low employment and low equality rates (Böheim, 2014). The relationship between the wage gap and pension gap is almost the same strength in all countries by group, except for Continental states. At the same time, it was expected that in Continental countries the coefficient will be the highest, as the pension benefit is linked to previous employment history (but of course here the time lag problem can play a role).

SOOLINE LÕHE PENSIONISISSETULEKUTES: ANALÜÜS ÜLE RIIKIDE JA SOOLISTE HOIAKUTE ROLL

Anna Veremchuk

Soolist palgalõhet on rohkelt uuritud, kuid soolist pensionilõhet puudutavate uringute arv on endiselt väike. See teema on muutunud populaarsemaks, kuna naiste käitumisharjumused pere- ja tööelus on muutunud. Selle tulemusel on naised rohkem seotud tööturuga, sündimus langeb, rohkem naisi on lahutatud või ei ole kunagi abielus olnud ning hiljem ei saa loota toitjakaotus-pensionile. Teisest küljest tõstatab praegune pensionisüsteemide reformimine küsimuse, kas tihedam seos pensioni ja töötulu vahel toob kaasa suurema ebavõrdsuse pensionile jäädes.

Käesoleva töö eesmärk on läbi viia võrdlev uurimus soolise pensionilõhe kohta kõigis Euroopa Liidu riikides. Sellest tulenevalt kasutati EU-SILC andmestikku 2018. aastast. See andmestik hõlmab kõiki Euroopa Liidu riike ja nelja riiki väljaspool Euroopa Liitu ning sisaldab nii pensioni- kui tööalase tulu andmeid. Teoreetiliselt põhineb see töö kahel ideel: (1) kumulatiivse ebasoodsa olukorra mõistel, mille kohaselt naistele ebasoodsate sündmuste (nagu madalam palk ja hõive ning emadusega seotud karjäärikatkestused) mõju akumuleerub elu jooksul ja vähendab naiste pensionisissetulekut; (2) soolise identiteedi teoorial, mis eeldab, et indiviidid tegutsevad naiste / meeste tüüpilise käitumismudeli järgi.

Esimeses analüüsietapis hinnati pensioni- ja tööalase tulu sooliste lõhede vahelisi seoseid. Leiti, et Kesk- ja Ida-Euroopa riikides, erinevalt teistest riikidest, on seos vastassuunaline, mis tähendab, et suurem sooline lõhe töises tulus vastab väiksemale soolisele lõhele pensionitulus. Korrelatsioon sooliste lõhede selgitama osade vahel on positiivne, mis tähendab, et samad, ajaliselt püsivad tegurid võivad mõjutada mõlemaid muutujaid.

Peamiseks naiste ja meeste pensionide ebavõrdsust kujundavaks teguriks on tööstaaž. Ametite roll on teisejärgulise tähtsusega, kuid see võib tuleneda asjaolust, et selles analüüsis ei arvestata elukutseid kogu elutsükli jooksul. Samuti leiti, et kolmanda taseme haridus suurendab soolist lõhe pensionitulus, kuid vähendab soolist lõhe tööalases tulus. See toob esile naiste aktiivse kaasamise olulisuse kolmanda taseme haridussüsteemis. Kuna sooline lõhe hariduses on täna-päeval kadumas, peaks hariduse kui seletava muutuja roll tulevikus vähenema.

Pärast pensionitulu soolist lõhet selgitavate tegurite leidmist, arvutati korrelatsioon soolise pensionilõhe ja tööandjapensionitega kaetuse vahel. Nende kahe muutuja positiivne seos toetab hüpoteesi, et üleminek jooksvalt finantseeritavalt pensionisüsteemilt kolmesambalisele pensionisüsteemile võib põhjustada suuremat ebavõrdsust pensionides. See tähendab, et koos teise sambaga hõlmatud pensionäride osakaalu suurenemisega võib praegu madala pensionilõhega riikides sooline pensionilõhe tulevikus suureneda.

Analüüsi viimases etapis hinnati sooliste hoiakute rolli. Eeldati, et sooline hoiak võib mõjutada pensionitulude erinevusi, sest inimesed kohandavad oma käitumist sotsiaalse käitumise mude-lite järgi. Riikides, kus toetatakse soolist võrdõiguslikkust rohkem, võiksime eeldada väikse-mat lõhet pensionitulus, sest naised on tööturul aktiivsemad. Endised sotsialistlikud riigid jäeti sellest analüüsist välja: seos naiste väärtuste ja nende tööturukäitumise vahel (mis mõjutab het-kel saadavaid pensione) kadus (1) riikliku kohustusliku naiste tööhõivepoliitika ja (2) naiste madala sissetuleku tõttu, mis tegi neile töötamise hädavajalikuks. On leitud, et ühiskondades, kus soolist võrdõiguslikkust rohkem toetatakse, on pensionilõhe (esialgne ja jälgitavate tun-

nustega selgitamata) väiksem. Sarnane tulemus saadi selgitamata tööalase tulu kohta (arvestamata Kesk- ja Ida-Euroopa riike). Seega võib sooline hoiak soodustada naiste ebasoodsat olukorda tööturul ja hiljem ka pensionile jäädes.

Selle töö peamine kitsaskoht peitub andmetes: EU-SILC andmed võimaldavad hõlmata kõiki EL riike ja kultuuriliste muutujate mõju, kuid ei sisalda teavet karjääri ja töötasude ajaloo kohta. Tulevastes uuringutes võiksid teadlased kasutada registriandmeid, kuid see toob kindlasti kaasa väiksema riikide arvu analüüsis. Samuti ei analüüsitud erinevate pensionisüsteemide eripärasid riigi tasandil, kuna hõlmatud riike oli palju.