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FACTORS DETERMINING GENDER PENSION GAP IN EUROPE: A CROSS NATIONAL STUDY

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Abstract

The objective of this paper is to investigate the factors that determine the gender pension gap in Europe. In particular, we focus on understanding how and which risk factors create the pension gap among the two genders. To extract the risk factors that determine the gender pension in Europe, we use EU-SILC and LFS data from Eurostat. For our analysis we engage descriptive and inferential statistics and the software IBM SPSS. EU countries are clustered in two groups based on the gender pension gap. Women working part time, and gender differences in working life duration, were found to be the two most significant factors that determine the pension gap. Gender pay gap, was not found to be significant due to the paradox that some countries exhibit, high gender pay gap and low pension gap.

Keywords: gender pension gap, gender pay gap, working life patterns, gender differences

JEL classification: J16, J31, N30

INTRODUCTION

According to the 2nd principle of The European Pillar of Social Rights, equality of treatment and opportunities between women and men must be ensured and fostered in all areas, including participation in the labour market, terms and conditions of employment, and career progression. The differences in the labour market between the two genders are recorded in various levels: men are getting paid more than women, they work more hours, and their jobs are more highly esteemed than those of the women (Reskin and Bielby, 2005).

The 15th European Pillar of Social Rights ensures that a) workers and the self-employed in retirement, have the right to a pension commensurate to their contributions and ensuring an adequate income, b) women and men shall have equal opportunities to acquire pension rights and c) everyone in old age has the right to resources that ensure living in dignity. However, currently these rights are not ensured properly, as there are big differences among the two genders. The average gender pension gap in the EU is above 35% (Dessimirova & Bustamante, 2019). The demographic challenge of an ageing population and the increasing diversity of working life, call for a greater focus and deeper analysis of the current situation among genders and across Europe.

In general, the factors that determine the gender pension gap can be classified in two main categories (Dessimirova & Bustamante, 2019): the employment history

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characteristics of someone, and the pension systems and policies of a country. The first group is consisted of factors such as the years in employment, the work intensity and the remuneration while the second group is consisted of policies such as career break compensations or penalties on early retirement.

In particular, gender pay gap at EU level can be considered as a potential risk factor to the gender pension gap. Gender pay gap is defined as 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. According to Eurostat (2013) “for the economy as a whole, women's gross hourly earnings were on average 16% below those of men in 2011 in the European Union (EU-27) as well as in the euro area (EA-17)”. Bayard, Hellerstein, Neumark, and Troske (2003) claimed that sex-segregation in the labour market accounts for high percentage of the wage differences between women and men. According to Blau and Hendricks (1979) this phenomenon is viewed as a type of inequality between the two genders and therefore is worth to examine the relationship between gender pay gap and gender pension gap.

The current study aims to identify and understand which factors contribute to the gender pension gap across the member states of European Union. Eurostat EU-SILC is used as database to extract useful information on gender pension gap. To formulate a comprehensive picture of the factors that determine the level of pensions in Europe and the reflection on gender inequalities we involve descriptive and inferential statistics, and the software IBM SPSS v.20.

The paper is structured as follows: in the next section we present some literature, Section 3 describes the methodology used and databases, in Section 4 we outline the analysis conducted and the results, and finally in Section 5 we present the discussion and the conclusion.

1. LITERATURE: Factors that contribute towards the level of pensions

Pension can be defined as a benefit, usually money, paid regularly to retired employees or their survivors by private businesses and federal, state, and local governments. Pensions aim to protect retired people from poverty and allow them to enjoy decent living standards. They are the main source of income for about a quarter of the EU population, with the main source of income for older citizens in Europe being state pensions. The share of older people in Europe's population and life expectancy are both increasing. European pension systems will need to adapt to stay financially sustainable and be able to provide Europeans with an adequate income in retirement.

The topic of the gender gap in pensions has only recently gained the attention of academia and policy-makers (Adami, Gough and Theophilopoulou, 2013; European Commission, 2013a; Folbre, Shaw and Stark, 2005). For the first time in-depth the gender gap in pensions was examined in a report published by the European Commission in 2013a.

According to Samek et al. (2011), the single most important component of older people's income, and especially for women are pensions. The pension is an important determinant of the economic independency of the retired female. The research on pension gender inequalities is important as women constitute the majority of the ageing population due to their higher life expectancy. For the EU as a whole, the average pension of women stood at 60 percent of the average pension of men in 2012

(European Commission in 2013a). Importantly, these calculations do include survivors' benefits, which protect women to certain degree against poverty following the loss of their partner.

This work outlines significant structural gender differences that contribute to the gender gap in pensions, including employment history such as number of years in employment and intensity of employment (part-time vs. full time employment) and the gender pay gap paradox.

The gender pay gap

The often substantial gender gap in pensions reflects the gender gap in remuneration, working hours, duration of working lives that women faced during their working lives. In particular pay differences may be rooted in education and skills levels, as well as various forms of gender segregation and discrimination. The gender pay gap is defined as the difference between average gross earnings of male and female employees as % of male gross earnings. The average pension gap in Europe in 2018 was 14.8 % (Eurostat 2020) with Estonia exhibiting the highest pension gap (22.7%) and Romania (3.0%) exhibiting the lowest. According to the literature there does not appear to be a simple correlation between gender pay gap and pension gap across all EU countries (Dessimirova & Bustamante, 2019). The two indicators are associated with a paradox as at some countries high pay gap corresponds to high pension gap and in other countries low pension gap are associated with high pay gap. The consideration of the gender pay gap in pensions constitutes a paradox that can only be explained with the fact that countries may have specific policies to decrease the gender pension gap.

Work experience and work profile

The gender pension gap mostly reflects gender pay inequalities, which according to the literature lead to lifetime earnings inequalities and result from differences in past employment, including work intensity and career breaks. The gender pension gap in some countries also, reflects the extent to which pension designs, mitigate these differences or in other countries the features of the pension system and coverage gaps can be a driver of the gender pension gap. Currently pension systems manage to reduce these inequalities only to a limited extent in the EU.

As mentioned above, the links between labour market income and pensions are being strengthened. Even though retirement ages between men and women are being equalized, the differences in the pension systems in the EU are very significant. In countries like the Netherlands, Austria and Italy, high labour market inequalities translate into high gender gaps in pensions. On the other hand, Denmark, Estonia, Slovakia and the Czech Republic manage to achieve a low level of the gender gap in pensions, even though the gender gap in total labour earnings remains high.

Across the EU countries, women work on an average 4.49 years less than men in full-time jobs. The average duration spent in employment is lower for women than for men, because women spend around five years more on care activities such as supplying large amounts of childcare for grandchildren and they stay longer in education (OECD, 2017). Women work more years in part-time employment and are still much less likely than men to be self-employed and are less likely than men to employ staff (OECD, 2017). Even when working in similar positions to men, women face lower wages and lower promotion opportunities. Thus, women are less likely than men to be employed; and when they are employed, they earn less, work fewer hours and have shorter careers on average. However, women spend more time in retirement, as they live longer.

Gender gaps in the employment rates of older workers are also considerable in many Member States. In 2016, the employment rate of women aged 55-64 ranged from a low 26.3 percent in Malta, to the high 73.5 percent in Sweden, while the EU-28 average employment rate for all working ages was at 66.5 percent (Eurostat 2017). While in three countries, Estonia, Latvia, and Finland, the employment rate of older women exceeds that of men, in two countries, Malta and Greece, the employment rate of older women was below 30 percent. In many countries, the employment gender gap remains roughly stable, both at high levels (e.g. Malta) and at low levels (e.g. Sweden). In general, EU employment rates in the 55-59 year-group are higher for men than for women. Exceptions to this pattern, are found in countries that were formerly part of the Soviet Bloc such as Lithuania, Estonia, Latvia and Bulgaria, where employment rates are higher for women than for men in the 55-59 age group. These relatively high rates of women's employment could be explained by the fact that this generation of women under state socialism had to work, either for economic or political reasons (Ogg and Rašticová, 2020).

Several Member States have, or used to have, lower statutory pension ages for women than for men, suggesting that pension legacies may play a role in gender employment discrepancies among older workers. Generally, gender disparities are narrowing as successive age cohorts – with steadily higher female labour force participation rates – reach the ranks of older workers.

All these labour market outcomes translate into differences in pension income, which in turn translate into an average gender pension gap. Based on previous studies and as mentioned above we have isolated some risk factors we consider are worth examine in order to investigate if they contribute and how they contribute towards the increase of the gender pension gap. These risk factors are, work intensity, gender differences in working life duration and gender pay gap.

2. METHODOLOGY AND DATA

The main sources we have used to create the dataset, is the EU-SILC and EU-LFS of 2016 Eurostat database. In particular, for the gender pension gap, data for pensioners aged 65-79 of the year 2016 were taken as they are reported in the Pension Adequacy Report of 2018 (European Commission 2018 DG for Employment, Social Affairs and Inclusion p. 69). Data on the unadjusted gender pay gap were retrieved from Life Force Survey (Eurostat) for the year of 2016 and is calculated on a population that consists all paid employees in enterprises with 10 employees or more (Eurostat 2018a). The latest year that Greece has reported the unadjusted gender pay gap was in 2014 and therefore for Greece we have used the value of 2014. Data for the gender gap in the working life duration, were taken by the Pension Adequacy Report of 2018 and refers to 2016 (European Commission 2018 p. 75). It is worth mentioning here that for all EU countries, with the exception of Lithuania and Latvia, the duration of working life is higher for men than for women. Finally, the data set on the percent of part-time employment and temporary contracts of women in EU-28 was extracted from the Life Force Survey (Eurostat) for the year of 2016 and is calculated for women aged 15 to 64 using as a basis the percentage of total employment (Eurostat 2018b). Here we also need to note that all data include UK as a member of EU-28.

At the beginning we have engaged mainly descriptive statistics for the variables under study such as mean, median and standard deviation to map the current situation. We also used the agglomerative hierarchical method for cluster analysis (buildup method) where each object or case starts out as its own cluster and in subsequent steps, the two closest clusters or cases are combined into a new aggregate cluster, that reduces the number of clusters by one, step by step. The method to compute the clusters is the Ward's method and distance measure the Euclidean squared distance. Ward's method uses an analysis of variance approach by calculating the total sum of squared deviations from the mean of a cluster. As actually there is no best method to use for clustering, Ward's method and Euclidean squared distance has been chosen as the most efficient and used ones (Burns & Burns, 2009).

Finally, one-way ANOVA is employed to identify further which variables are determining the gender pension gap.

3. ANALYSIS AND RESULTS

The main predictors for the gender pension gap under study are the gender pay gap, women working part time and gender differences in working life duration-women work a lower average number of years in comparison to men due to career breaks and mainly related to child care. In the next table some descriptive results are shown (Table 1).

Table 1. Descriptive statistics for the variables under study for EU-28^a

| | Mean | Median | Std. Deviation |
|---|-------|--------|----------------|
| Gender pension gap (%) | 27.16 | 27 | 12.42 |
| Gender pay gap (%) | 14.18 | 14.4 | 5.37 |
| Gender gap in the working life duration (in years) | 4.49 | 4.4 | 2.7 |
| Employment intensity status (part-timers, age group 15-64) (%) | 23.68 | 17.90 | 17.13 |

Source: Eurostat, EU-SILC 2016

^a Authors' calculations

As a next step we attempt to find significant correlations using inferential statistics between gender pension gap and the variables under study i.e. the gender pay gap, the gender gap in the working life duration (in years) and the employment intensity status (working part-time, age group 15-64). While some significant correlation was found between gender pension gap and gender gap in the working life duration and the employment intensity status, any attempt to find significant correlation between gender pension gap and gender pay gap across EU countries failed. This paradox may be attributed to the fact that some countries, such as Estonia, exhibit very high pension gap but at the same time very low gender pay gap. For example, Estonia has the widest pay gap of 26 %, but has the lowest pension gap of 3% (Dessimirova & Bustamante2019). The following figure (Figure 1) clearly demonstrates a “scissors graph” that confirm the different country-cases across EU.

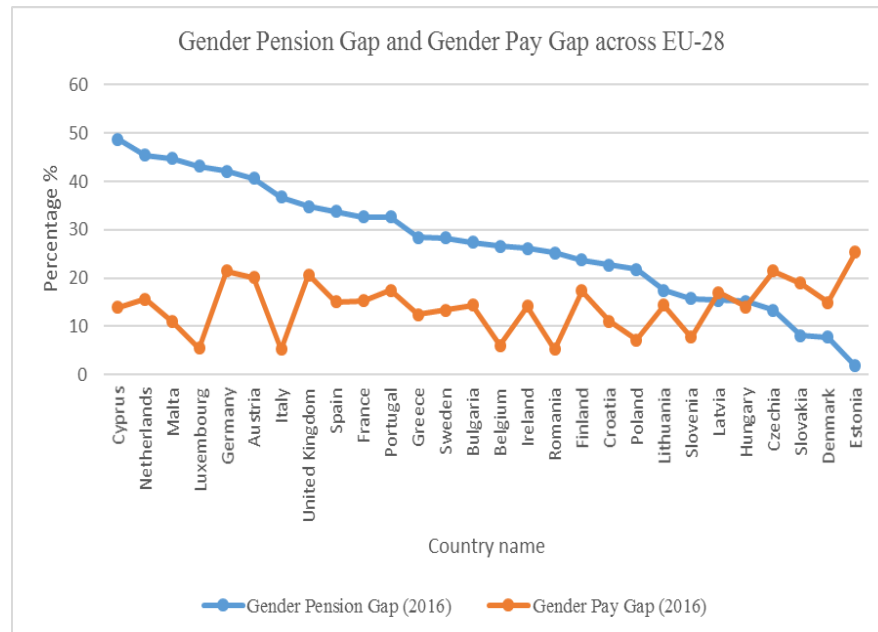


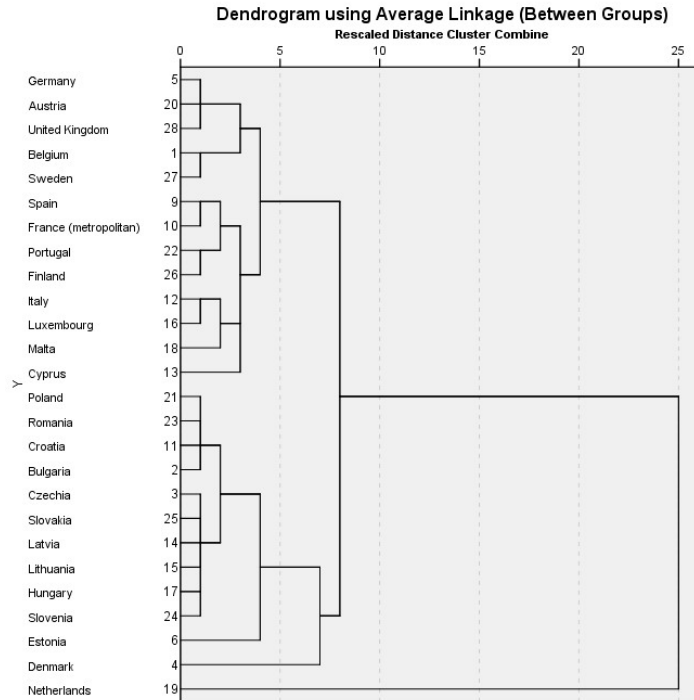
Figure 1: The gender pension gap and gender pay gap across the EU-28.

Source: Eurostat, EU-SILC 2016

* Authors' calculations

Using cluster analysis, EU countries were clustered in two significantly different groups (Table 2). The first group is consisted by countries with higher mean gender pension gap (38.14%), higher mean percent of women working part time (37.62%), higher mean gender differences in the working duration life (5.46) but with lower mean gender pay gap (13.62%). In the first group, Belgium, Germany, Spain, France, Italy, Cyprus, Luxembourg, Malta, Netherlands, Austria, Sweden and United Kingdom are included. In the second group the countries that are included are those with lower gender pension gap (17.74%), lower percent of women working part time (11.90%), lower gender differences in the working duration time (3.33) but higher gender pay gap (14.77%). The countries included in this group are Bulgaria, Czechia, Denmark, Germany, Estonia, Ireland, Greece, Spain, France, Croatia, Italy, Cyprus, Latvia, and Lithuania.

Table 2. Cluster analysis



The paradox of the gender pay gap not being significant can be seen also in Table 3 where it is the only variable that does not contribute significantly to the gender pension gap. The paradox of the gender pay gap not being significant can be attributed to each country's policies and schemes which is the case of the post-soviet countries in eastern Europe.

Table 3. Analysis of Variance for the variables under study for EU-28^a

| | Cluster 1 (%) | Cluster 2 (%) | Significant value | F-value |
|--|---------------|---------------|-------------------|---------|
| Gender pension gap 2016 | 38.14 | 17.74 | <0.0001*** | 43.803 |
| Part-time employment of women 15-64 2016 | 37.62 | 11.90 | <0.0001*** | 29.315 |
| Gender gap in working life (years) | 5.46 | 3.33 | <0.042*** | 4.617 |
| Gender pay gap 2016 | 13.62 | 14.77 | 0.608 | 0.27 |

Source: Eurostat 2016 EU-SILC

Note: Authors' calculations,

* p-value = 0.10.

** p-value = 0.05.

*** p-value = 0.01

CONCLUSION

Trying to understanding how and which risk factors create the pension gap among the two genders in countries across EU, we have classified the countries in two groups where working life duration of women and intensity of employment (working part time) can contribute positively to the gap. Paradoxically we have found that the gender pay gap is not considered as a risk factor across all EU countries. Based on the analysis EU countries are classified in two groups where the first group of countries exhibit higher gender pension gap, higher percent of women working part time and higher gender differences in the working duration life, but lower gender pay gap. The second group of countries exhibit lower gender pension gap, lower percent of women working part time, lower gender differences in the working duration time, but higher gender pay gap. The paradox of the gender pay gap not being significant can be attributed to each country's policies and schemes which is the case of the post-soviet countries in eastern Europe.

A limitation of the study is the small number of variables taken in consideration when designing the model. This work is on-going so to tackle this limitation further research is required to explore which other factors are determining the pension gap in order to minimize this gender inequality.

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REFERENCES

- Adami, R., Gough, O. and Theophilopoulou, A. 2013. The effect of labour earnings on post retirement income. *Journal of Economic Studies* Vol. 40, No 3, pp. 284-297 (<http://dx.doi.org/10.1108/01443581311283925>).
- Bayard, K., Hellerstein, J., Neumark, D., Troske, K.. 2003. New evidence on sex segregation and sex differences in wages from matched employee-employer data. *Journal of Labor Economics* 21 (4), 887–922.
- Blau, F.D., Hendricks, W.E.. 1979. Occupational segregation by sex: trends and prospects. *Journal of Human Resources* 14 (2), 197–210.
- Burns R. P., Burns, R. 2009 *Business Research Methods and Statistics Using SPSS* SAGE Publications Ltd ISBN:9781412945301
- Dessimirova, D. Bustamante, M.A. 2019. The gender gap in pensions in the EU. Policy Department for Economic, Scientific and Quality of Life Policies (briefing, July,2019).
- European Commission. 2013. The gender gap in pensions in the EU, Publications Office of the European Union, Luxembourg, prepared for European Commission — Directorate-General for Justice by Bettio, F., Tinios, P., and Betti, G. in collaboration with Gagliardi, F. and Georgiadis, T.

[http://www.eif.gov.cy/mlsi/dl/genderequality.nsf/All/249A794E6EA4F719C22579A5002F27FC/\\$file/130530_pensions_en.pdf](http://www.eif.gov.cy/mlsi/dl/genderequality.nsf/All/249A794E6EA4F719C22579A5002F27FC/$file/130530_pensions_en.pdf)

Eurostat 2013.

http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Gender_pay_gap_statistics

Eurostat 2017. "Gender Statistics"

https://ec.europa.eu/eurostat/statistics-explained/index.php/Gender_statistics Last retrieved 17 September 2019

Eurostat 2020. "Gender Statistics". https://ec.europa.eu/eurostat/statistics-explained/index.php/Gender_statistics#Earnings

Folbre, N., Shaw, L. B., and Stark, A. 2005. 'Introduction: Gender and aging', *Feminist Economics*, Vol. 11, No 2, pp. 3-5.

(<http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=17835173&site=ehost-live>).

OECD 2017. *The Pursuit of Gender Equality: An uphill battle*, OECD Publishing, Paris.

Reskin, B.F., Bielby, D. 2005. A sociological perspectiva on gender and career outcomes. *Journal of Economic Perspectives* 19 (1), 71–86.

Samek Lodovici, M., Crepaldi, C. and Corsi, M. 2011. The socio-economic impact of pension systems on the respective situations of women and men and the effects of recent trends in pension reforms. Report prepared by the EGGSI network for the European Commission,

http://ec.europa.eu/justice/gender-equality/document/index_en.htm

OECD 2009. Education at a Glance – OECD Indicators.

[Http://www.inovacao.unicamp.br/report/inte-educational_indicators-2009ocde090914](http://www.inovacao.unicamp.br/report/inte-educational_indicators-2009ocde090914)

Petersen, Trond, and Snartland Vermund. 2004. Firms, Wages, and Incentives: Incentive Systems And Their Impacts On Wages, Productivity, And Risks, *Research In Social Stratification And Mobility* 21(1): 253-286. Doi:10.1016/S0276-5624(04)21012-5

Reskin, Barbara, F., and Bielby Denise. 2005. A sociological perspectiva on gender and career outcomes. *Journal of Economic Perspectives* 19 (1), 71–86.

Rosenfeld, Rachel, A. 1984. *Job changing and occupational sex segregation: sex and race comparisons*, In B.F. Reskin (Eds), *Sex segregation in the workplace: Trends, explanations, remedies*, National Academy Press, Washington.

Rosenfeld, Rachel A., and Kenneth I. Spenner. 1992. Occupational segregation and women's early career job shifts. *Work and Occupations*. 19(4): 424-449.

Rubery Jill, and Collette Fagan 1993. *Occupational segregation of women and men in the European Community*. European Community, Synthesis report of the network of experts on the situation of women in the labour market, University of Manchester.

Semyonov, Moshe, and Jones Frank. 1999. Dimensions of Gender Occupational Differentiation in Segregation and Inequality: A Cross-National Analysis. *Social Indicators Research* 46: 225-247.

Petroula M. Mavrikiou, and Julijana Angelovska. 2020. Factors Determining Gender Pension Gap in Europe: a Cross National Study. *UTMS Journal of Economics* 11(2): 151–160.

Tzannatos, Zafiris. 1999. Women and Labor Market Changes in the Global Economy: Growth Helps, Inequalities Hurt and Public Policy Matters. *World Development* 27: 551-569.

United Nations Development Fund for Women (UNIFEM), 2005: Women Work & Poverty. <http://www.un-ngls.org/orf/women-2005>.

Watts, Martin. 1992. How should occupational sex segregation be measured. *Work, Employment and Society* 6 (3): 475–487.