



# Group of Experts on Gender Statistics

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## Gender Pay Gaps in the European Union

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(Eurostat - Labour Market and Lifelong Learning)

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- II. Methodology
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# I. INTRODUCTION

## European Pillar of Social Rights

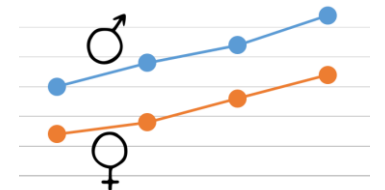
### 2. Equal treatment between women and men

Men and women must be treated in the same fair way in every part of life.



✓ Right of both women and men to EQUAL PAY FOR EQUAL WORK

✓ The unadjusted GPG is the leading indicator used to evaluate the progress in **reducing the gap**.



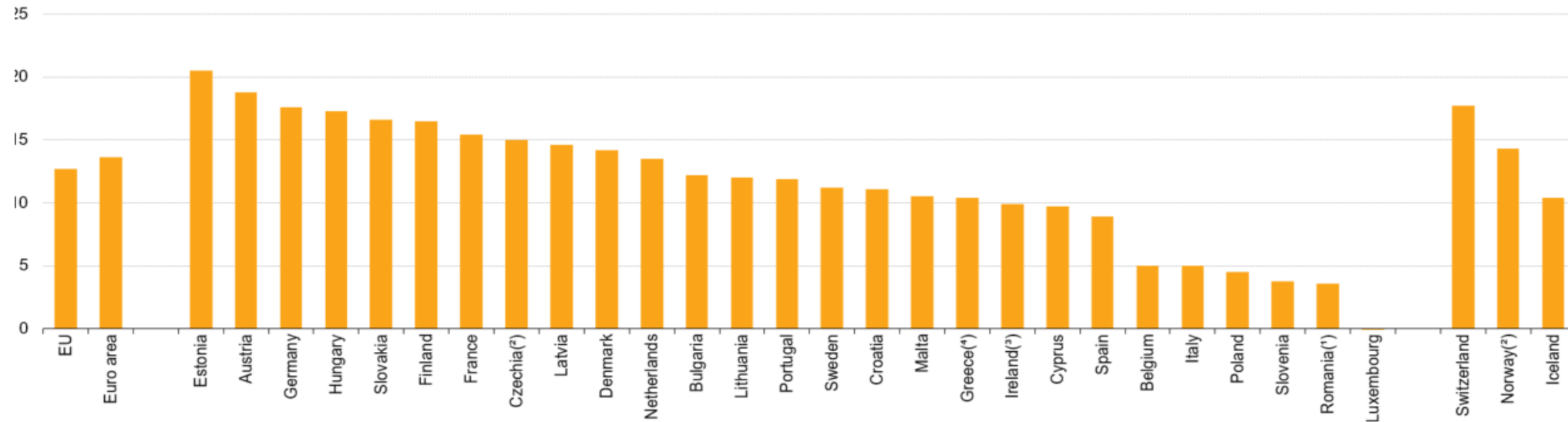
✓ It is calculated as:

$$\frac{\text{Mean hourly earnings of men} - \text{Mean hourly earnings of women}}{\text{Mean hourly earnings of men}}$$

# I. INTRODUCTION

## The unadjusted gender pay gap, 2021

(difference between average gross hourly earnings of male and female employees as % of male gross earnings)



Note: For all the countries except Czechia and Iceland: data for enterprises employing 10 or more employees, NACE Rev. 2 B to S (-O); Czechia: data for enterprises employing 1 or more employees, NACE Rev. 2 B to S; Iceland: NACE Rev. 2 sections C to H, J, K, P, Q. Gender pay gap data for 2021 are provisional until benchmark figures, taken from the Structure of Earnings survey, become available in December 2024

(<sup>1</sup>) Estimated data

(<sup>2</sup>) Definition differs (see metadata)

(<sup>3</sup>) 2020 data

(<sup>4</sup>) 2018 data

Source: Eurostat (online data code: sdg\_05\_20)

# I. INTRODUCTION

*But... the Unadjusted Gender Pay Gap has limitations ...*



The unadjusted GPG does not capture discrimination in the sense of “equal pay for equal work or work of equal value”

BECAUSE it combines:

- the impact of differences in the average characteristics of men and women in the labour market
- possible differences in pay between men and women, for “equal work”

## II. METHODOLOGY

- ✓ With **Structure of Earnings Survey 2018** data that covers two broad areas:
  - the earnings of individual employees
  - the observed characteristics of individual employees and their employers
- ✓ We have measured the impact of differences in the average characteristics of men and women.

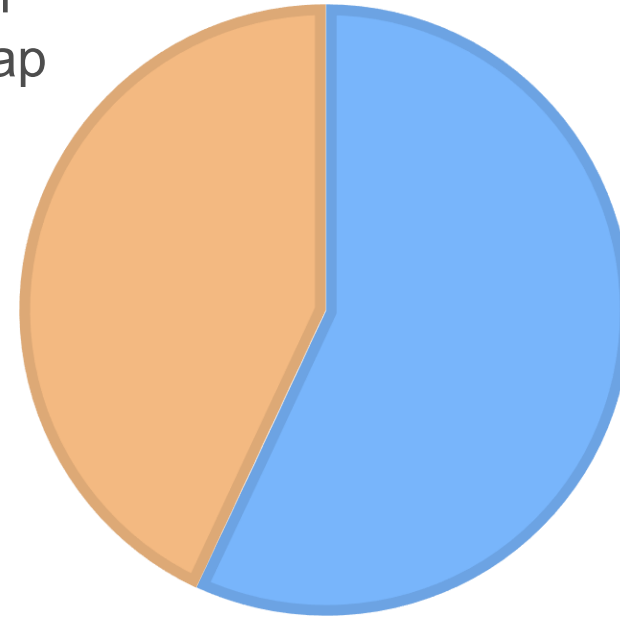
# II. METHODOLOGY

Unadjusted  
Gender Pay Gap



Methodology based on  
Blinder Oaxaca  
decomposition

Unexplained  
Gender  
Pay Gap



Explained  
Gender Pay  
Gap

## II. METHODOLOGY

$$\ln y_i^M = \beta_0^M + \sum_{k=1}^K x_{ki}^M \beta_k^M + \varepsilon_i^M$$

$$\ln y_i^W = \beta_0^W + \sum_{k=1}^K x_{ki}^W \beta_k^W + \varepsilon_i^W$$

Where:

- $\ln y_i$  represents the natural log of hourly earnings for observation  $i$ ;
- $x_{ki}$ , from  $k=1$  to  $k=K$ , are explanatory variables covering the observed personal, job and enterprise characteristics that may impact on the log hourly earnings of individual  $i$ ;
- $\beta_0$  is a constant and  $\beta_k$ , from  $k=1$  to  $k=K$ , are the parameters for the corresponding variables covering the observed characteristics;
- $\varepsilon_i$  is a disturbance term for observation  $i$ , independent from each other and normally distributed with average zero and same variance (i.e. 'white noise').



## II. METHODOLOGY

The Oaxaca decomposition uses the following regression property for the means of log hourly earnings of men and women:

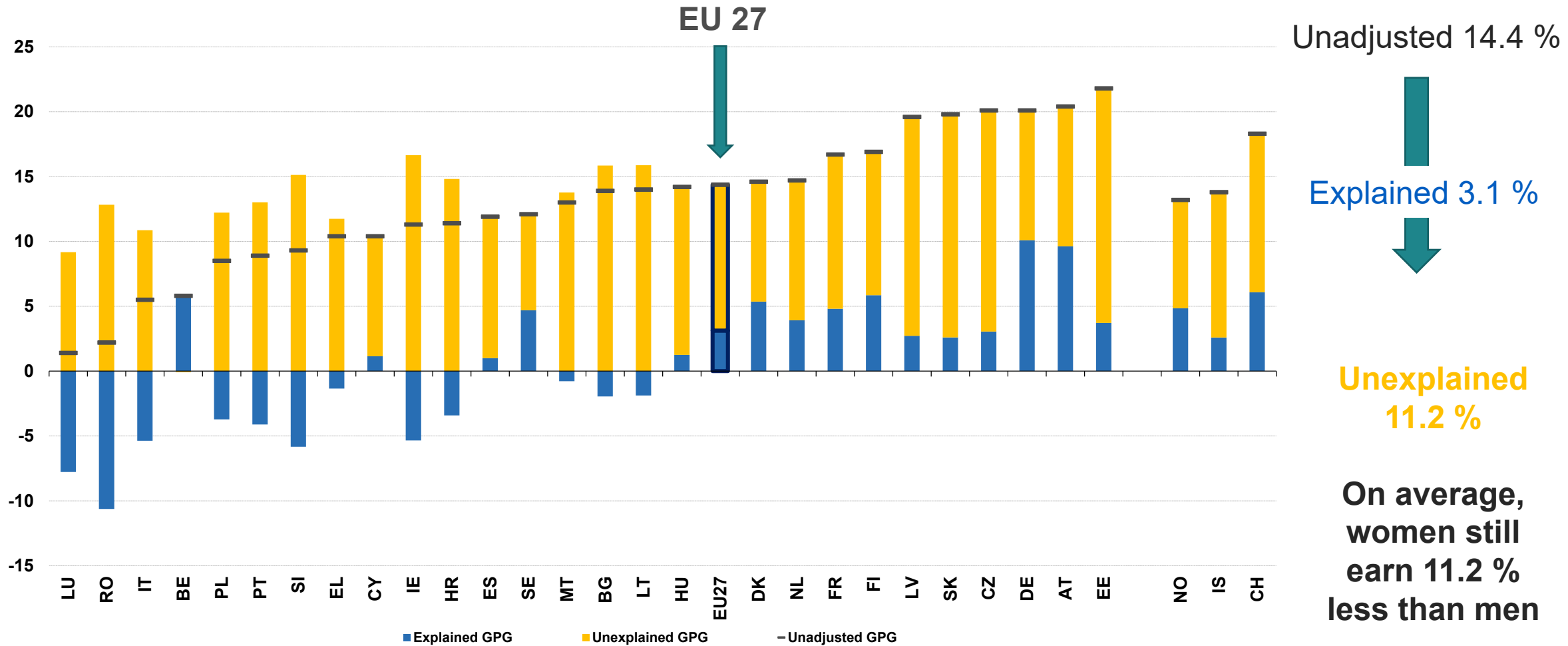
$$\begin{aligned}\overline{\ln y^M} &= \hat{\beta}_0^M + \sum_{k=1}^K \bar{x}_k^M \hat{\beta}_k^M \\ \overline{\ln y^W} &= \hat{\beta}_0^W + \sum_{k=1}^K \bar{x}_k^W \hat{\beta}_k^W\end{aligned}$$

$$\overline{\ln y^M} - \overline{\ln y^W} = \underbrace{\sum_{k=1}^K \hat{\beta}_k^M (\bar{x}_k^M - \bar{x}_k^W)}_{\text{Different characteristics (E)}} + \underbrace{\sum_{k=1}^K \bar{x}_k^W (\hat{\beta}_k^M - \hat{\beta}_k^W)}_{\text{Different financial returns (U1)}} + \underbrace{(\hat{\beta}_0^M - \hat{\beta}_0^W)}_{\text{Residual (U2)}}$$

Where  $k=1$  to  $k=K$  refers to the corresponding variables covering the observed characteristics

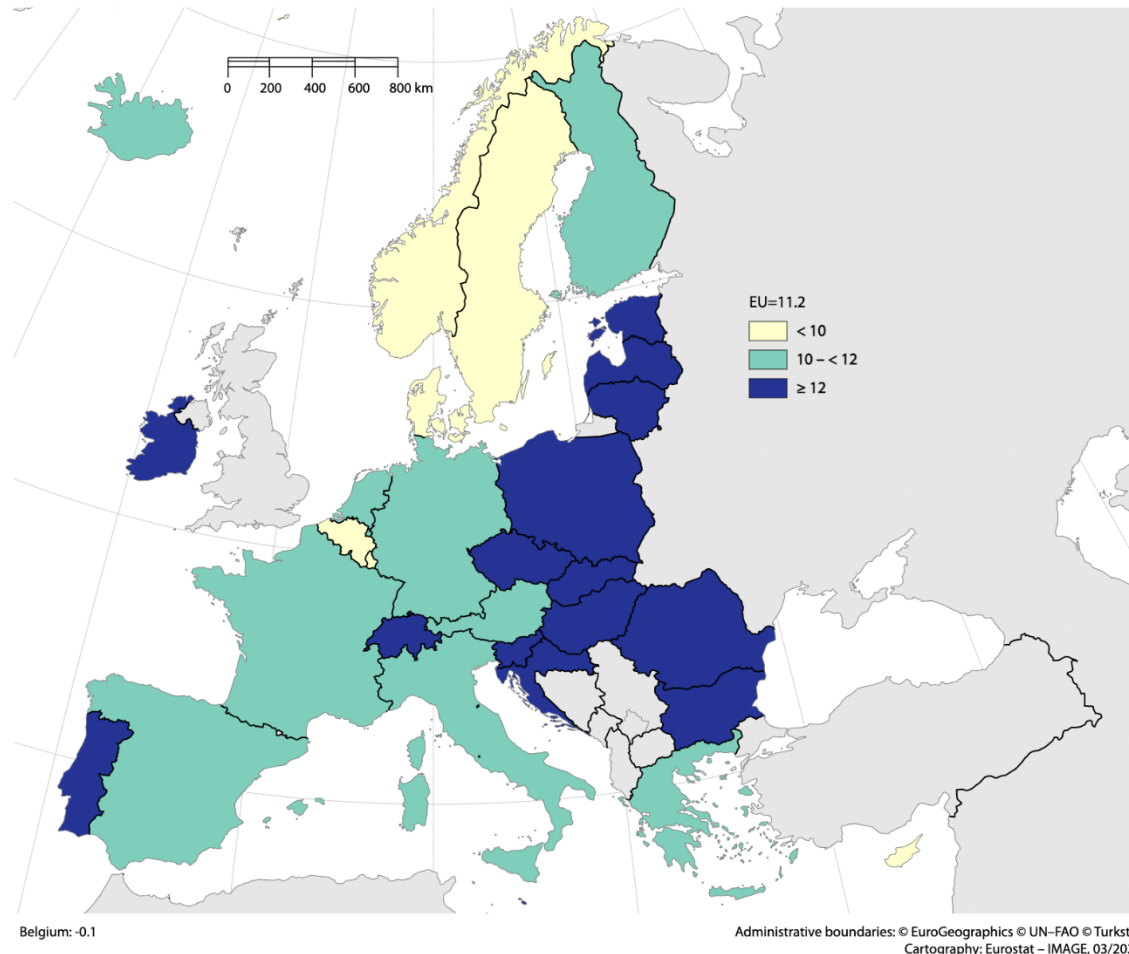
# III. RESULTS

## Looking at the results of the GPG decomposition



# III. RESULTS      The gender pay gap after adjusting

## Unexplained gender pay gap

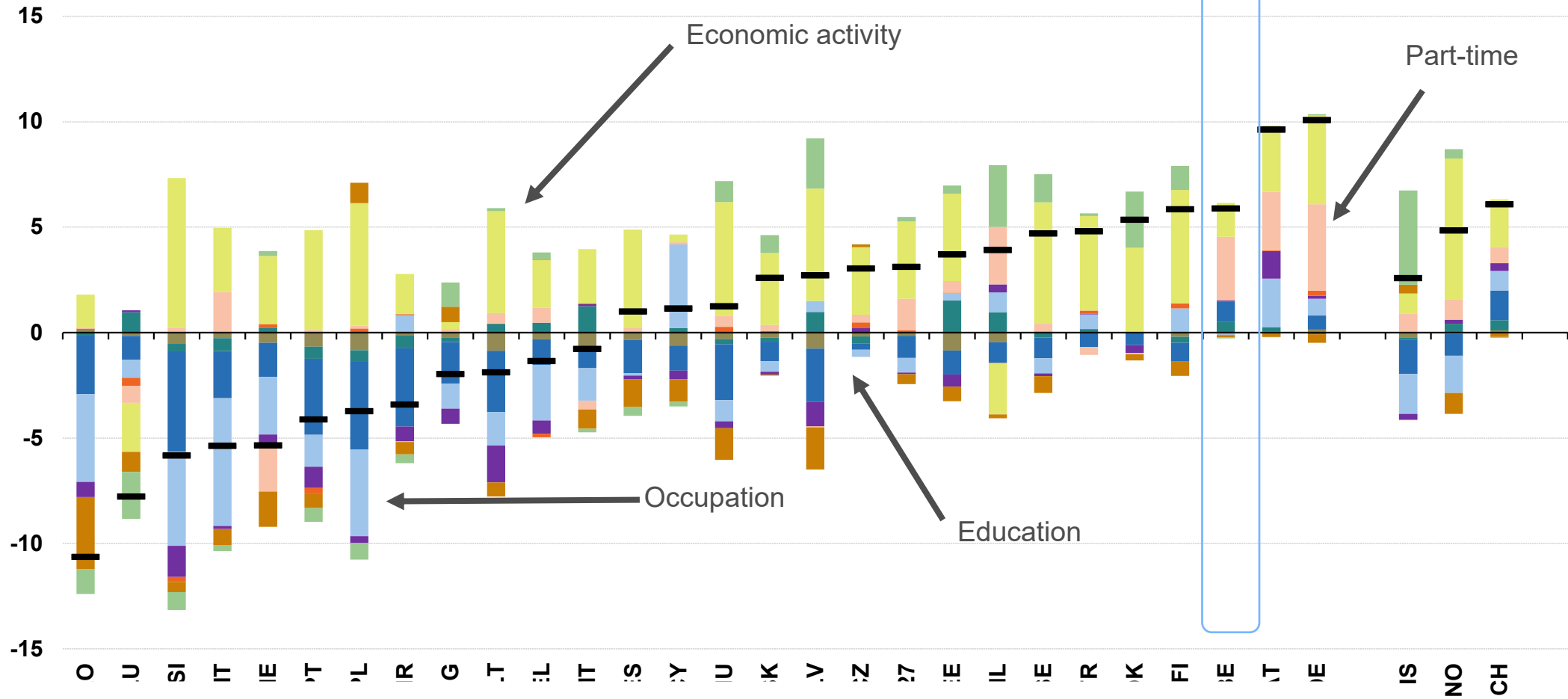


Lowest adjusted GPG:  
Belgium, Nordic countries and  
Cyprus.

The UGPG is adjusted  
downwards.

# III. RESULTS

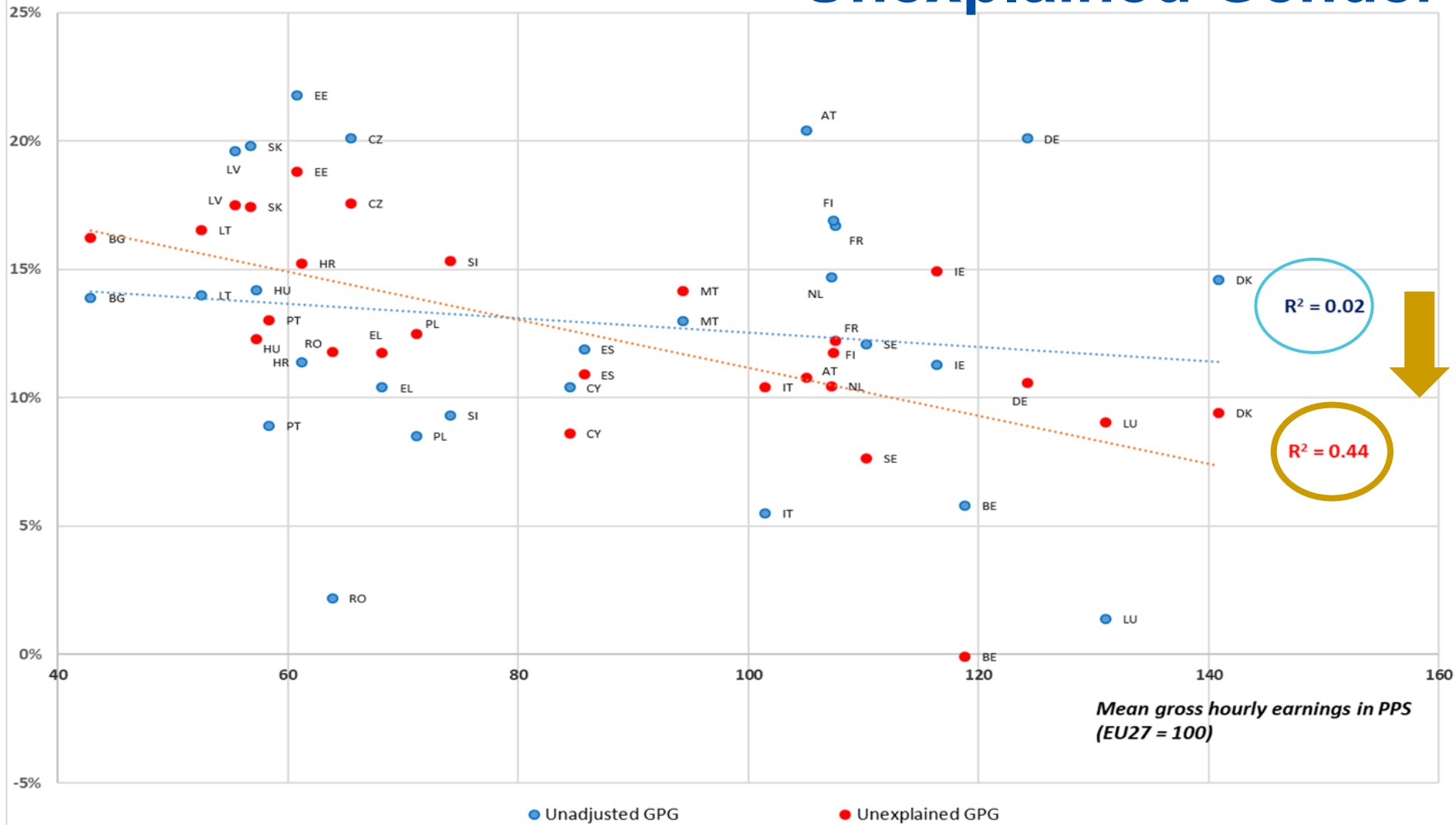
## How does each factor contribute to explaining the gap?



- Residual
- Age
- Education
- Occupation
- Job experience
- Employment contract
- Working time
- Economic activity
- Enterprise size
- Overall explained gap
- Enterprise control

# III. RESULTS

## Why using the Unexplained Gender Pay Gap?

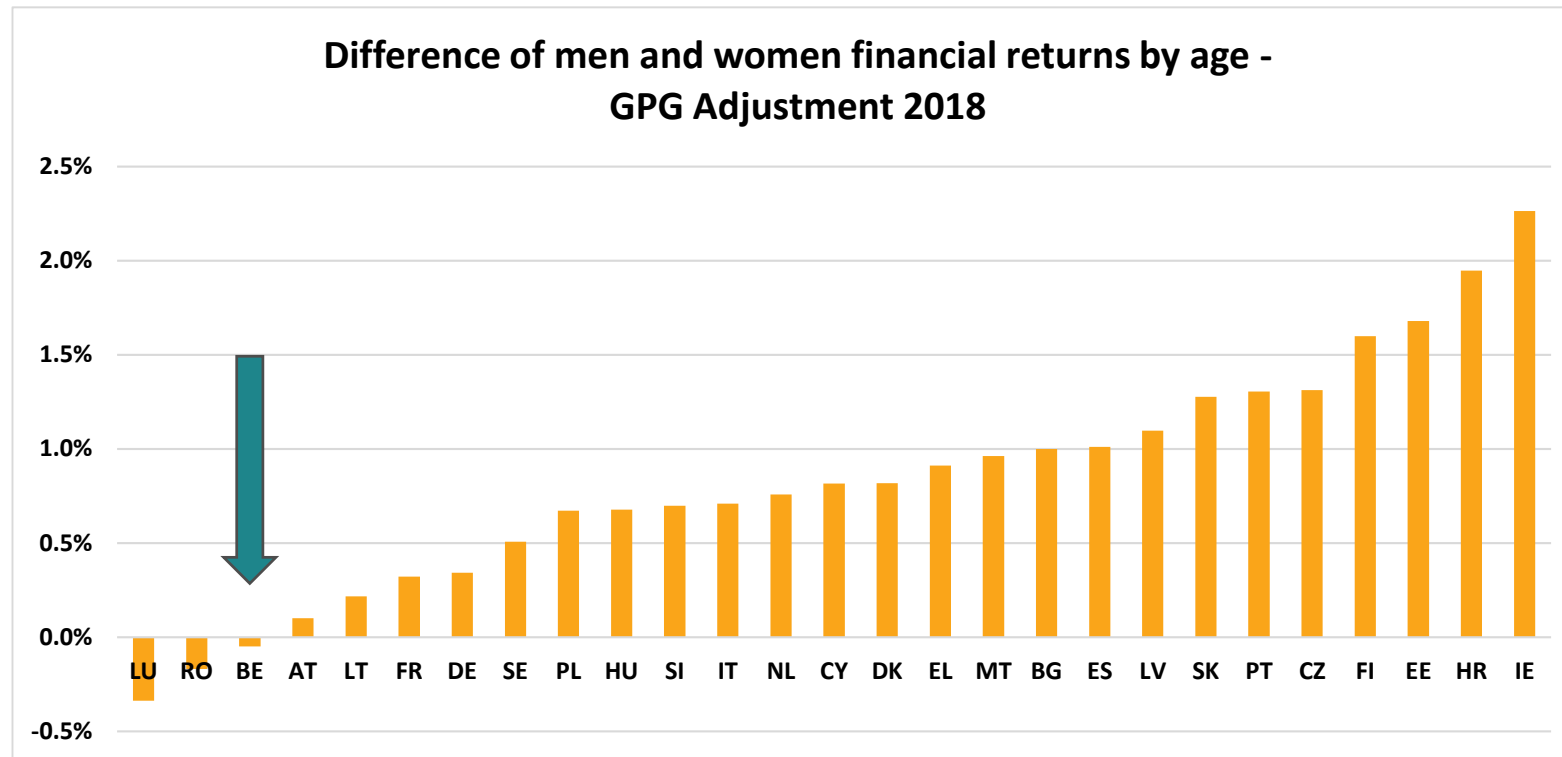
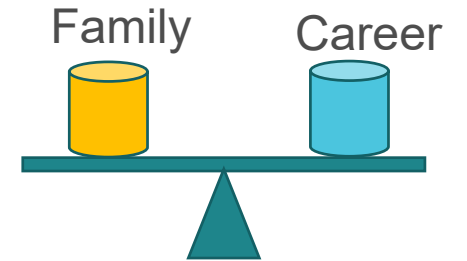


# III. RESULTS

## Are there differences in returns?

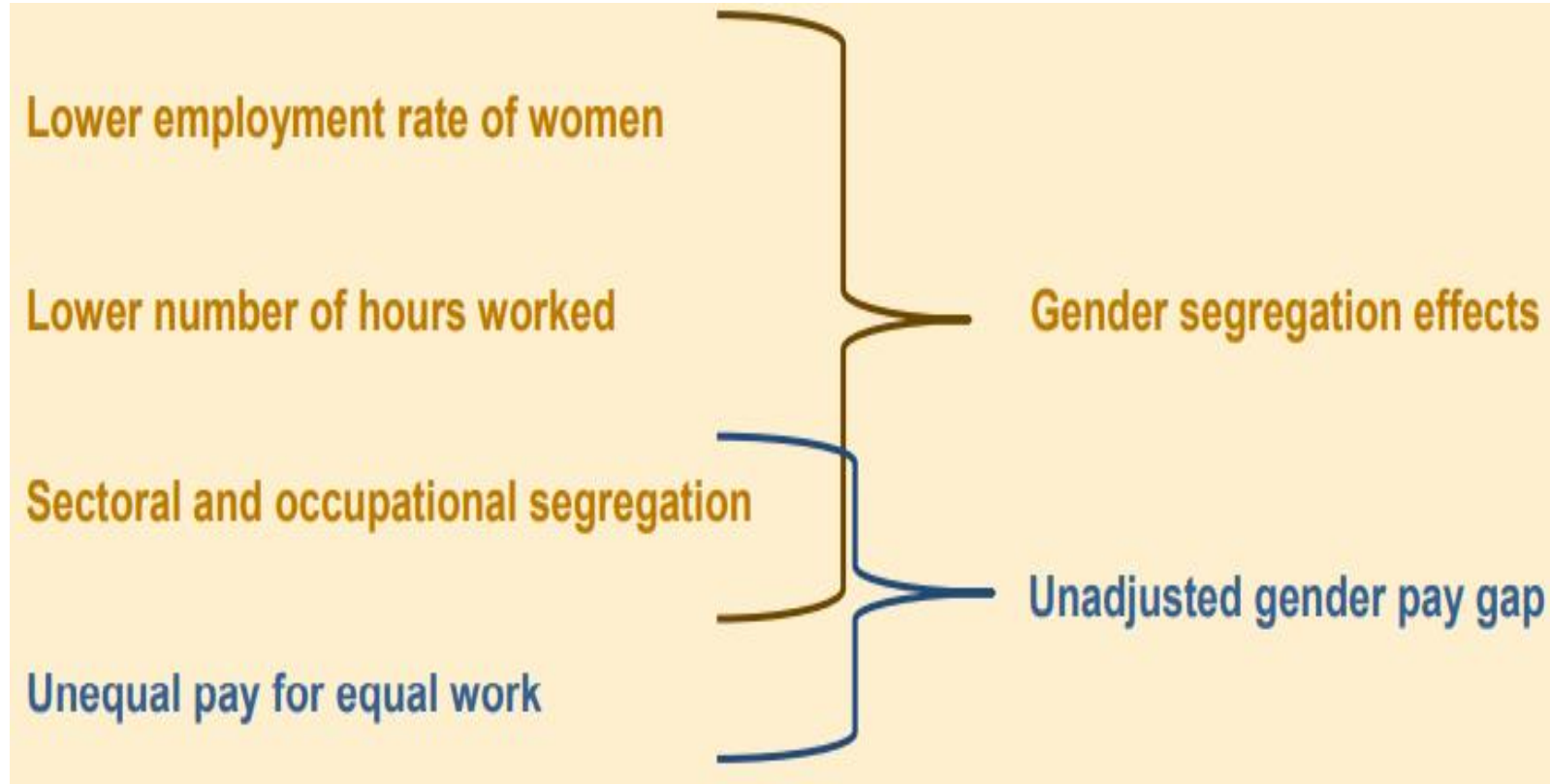
Effect of *age* :

- lower returns for women (impact of career breaks).
- higher returns for women at the end of their careers compared with men.



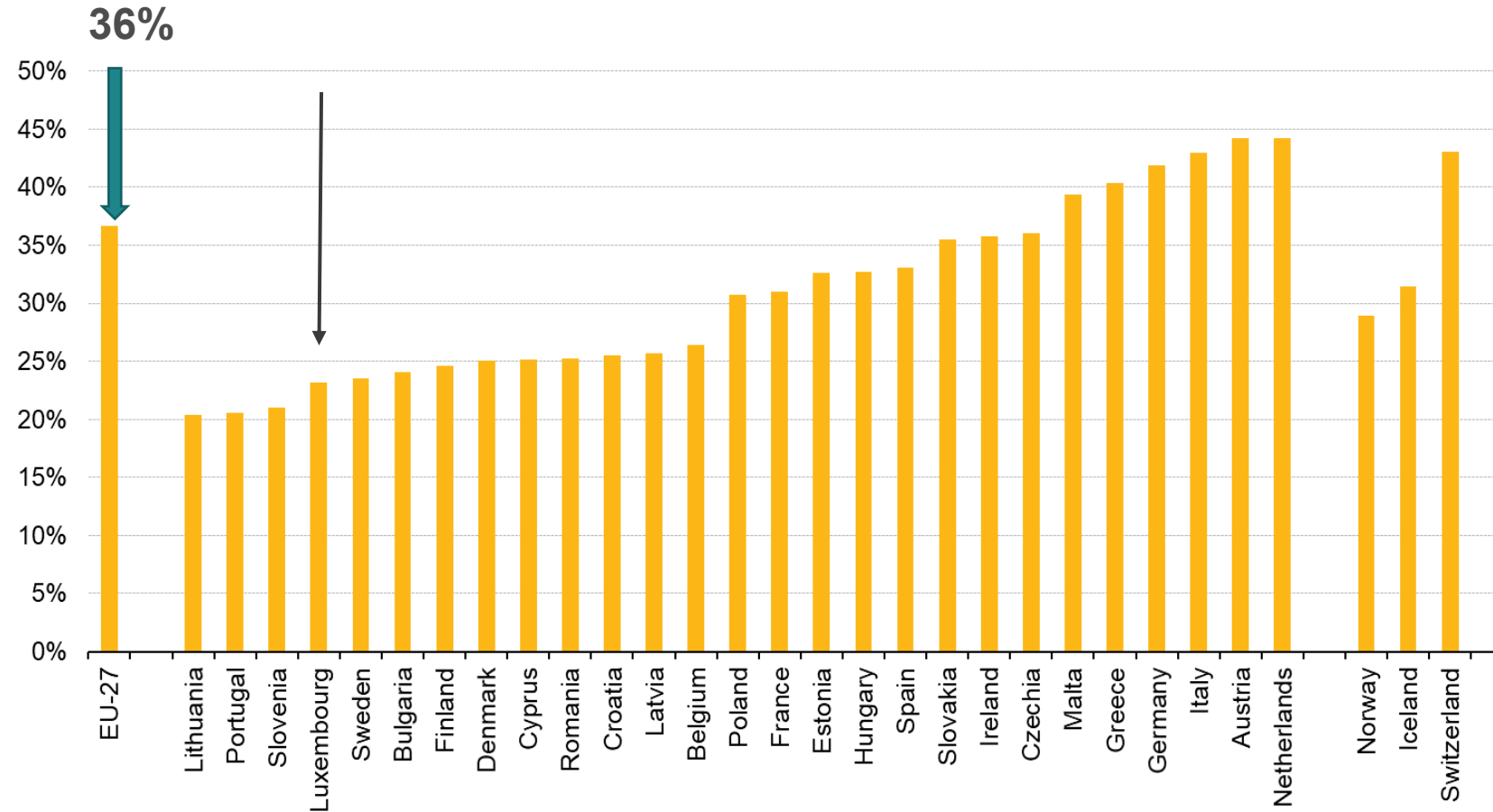
# IV. OTHER SEGREGATION EFFECTS

**Hourly earnings do not tell the full story...  
... there are other segregation effects**



# IV. OTHER SEGREGATION EFFECTS

- ✓ Unadjusted gender pay gap
  - ✓ Gender hours worked gap
  - ✓ Gender employment rate gap
- ⇒ Combined into the **Gender Overall Earnings Gap (GOEG)**



Source: Eurostat (online data code: teqges01)



# V. CONCLUSIONS

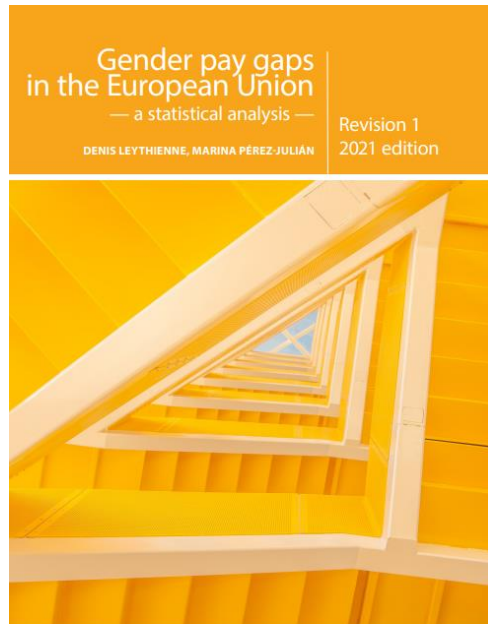
- There are clear policy and statistical reasons to decompose the unadjusted GPG.
- The unexplained GPG and the gender overall earnings gap provide useful indicators to complement the unadjusted GPG.
- Explanatory factors and returns allow for a better identification and interpretation of the causes behind the gender pay gap.
- The above statistics should help to better target policy actions towards gender equality.

# VI. Information about gender pay gap statistics

...

## STATISTICS EXPLAINED ARTICLE:

[Gender pay gap statistics - Statistics Explained \(europa.eu\)](https://ec.europa.eu/eurostat/statistics-explained/index.php/Gender_pay_gap_statistics)



+ tables for users

Explore Eurostat's new data navigation tree using the Data Browser .

DATABASE

- Data navigation tree
  - Database by themes
    - General and regional statistics
    - Economy and finance
    - Population and social conditions
      - Population and housing censuses (cens)
      - Demography, population stock and balance (demo)
      - Population projections (proj)
      - Migration (migr)
      - Health (hith)
      - Education and training (educ)
      - Labour market (labour)
        - Employment and unemployment (Labour force survey) (employ) (Information note)
        - Job vacancy statistics (jvs)
        - Earnings (earn)
          - Net earnings and tax rates (earn\_net)
          - Structure of earnings survey - main indicators (earn\_ses\_main)
          - Structure of earnings survey 2018 (earn\_ses2018)
          - Structure of earnings survey 2014 (earn\_ses2014)
          - Structure of earnings survey 2010 (earn\_ses2010)
          - Structure of earnings survey 2006 (earn\_ses06)
          - Structure of earnings survey 2002 (earn\_ses)
          - Gender pay gap in unadjusted form (earn\_grgpg)
            - Gender pay gap in unadjusted form - NACE Rev. 2 activity (earn\_grgpg2)
              - Gender pay gap in unadjusted form by NACE Rev. 2 activity - structure of earnings survey methodology (earn\_gr\_gpgr2)
              - Gender pay gap in unadjusted form by age - NACE Rev. 2 activity (B-S except O), structure of earnings survey methodology (earn\_gr\_gpgr2ag)
              - Gender pay gap in unadjusted form by type of ownership of the economic activity - NACE Rev. 2 activity (B-S except O), structure of earnings survey methodology (earn\_gr\_gpgr2ct)
              - Gender pay gap in unadjusted form by working time - NACE Rev. 2 activity (B-S except O), structure of earnings survey methodology (earn\_gr\_gpgr2wt)



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