

Where pay transparency bites

Sectoral composition, enterprise size and the EU gender pay gap before Directive (EU) 2023/970

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Abstract From June 2027, EU employers with 250 or more workers must report their gender pay gap every year and assess any gap of 5% or more between women and men doing work of equal value. This paper asks how the published national gap relates to the comparisons the Directive requires. Using Eurostat's Structure of Earnings Survey 2022, the gap in each of the 27 Member States is split, with symmetric weights, into a part due to the sectors women and men work in and a part within sectors. Sector cells rebuild every published national gap to within half a point. The within-sector gap exceeds the published gap in 22 countries and is 14.6% for the EU against a published 12.2%, because women are over-represented in sectors that pay above average. The difference is largest where the headline is smallest, as in Italy and Romania. Where earnings by enterprise size are published, the gap is wider in enterprises of 250 or more, which employ half the workforce covered. Employers benchmarking against the national figure should expect their first reports to show wider gaps.

Version 1.0. JEL: J16, J31, J71, K31. Data, code and a reproducible build: github.com/D0M3N1C0X/where-pay-transparency-bites. Every figure in the text and tables is generated by that code; the test suite checks the abstract against it.

1 Introduction

Directive (EU) 2023/970 (*Directive (EU) 2023/970 of the European Parliament and of the Council of 10 May 2023 to Strengthen the Application of the Principle of Equal Pay for Equal Work or Work of Equal Value Between Men and Women Through Pay Transparency and Enforcement Mechanisms* 2023) turns the gender pay gap from a national statistic into an obligation for employers. Those with 250 or more workers report seven indicators every year from 7 June 2027, those with 150 to 249 every three years from the same date, and those with 100 to 149 from 2031 (Article 9). Where a gap of at least 5% in any category of workers is neither justified on objective, gender-neutral criteria nor remedied within six months, the employer must carry out a joint pay assessment with workers' representatives (Article 10).

The benchmark most employers and commentators have at hand is the unadjusted gap Eurostat publishes for each country. In 2024 it was 11.1% for the EU, down from 15.8% in 2010. That figure compares all women and all men in the economy. The Directive compares women and men within one employer and, for the joint pay assessment, within categories of workers doing the same work or work of equal value.

This paper asks how far apart those two comparisons are likely to be. It splits the published 2022 gap in each Member State into a part due to where women and men work and a part due to how they are paid within the same sector, and it measures how much of the workforce falls under the first reporting wave. Decompositions of the gap are well established, including on the same survey with microdata (Leythienne and Ronkowski 2018; Blau and Kahn 2017). The contribution here is narrower and practical: a fully repro-

ducible decomposition on public tables, reconciled with the published figures for every country, and read against the Directive’s timetable.

2 Data

Sources. Two Eurostat sources, downloaded through the dissemination API on 2026-09-17 and stored as snapshots with the build:

- the unadjusted gender pay gap series (`earn_gr_gpgr2`, with breakdowns by economic control and by age), 2007 to 2024;
- the Structure of Earnings Survey (SES) 2022: numbers of employees and mean gross hourly earnings in euro by sex, economic activity, occupation and enterprise size (`earn_ses22_02, _13, _18, _47, _53, _54`).

Scope. The analysis follows the definition of the published gap: enterprises with ten or more employees, NACE Rev. 2 sections B to S excluding O, mean gross hourly earnings including paid overtime and excluding non-regular payments (Eurostat 2026). Cells are the 17 sections in that scope; ISCO-08 major groups; or sections crossed with major groups.

Confidentiality. Eurostat suppresses cells that could identify respondents. A country enters a decomposition only if the cells with both a count and a wage cover at least 95% of each sex’s employees and rebuild the published 2022 gap within 0.5 percentage points. With sector cells, all 27 countries pass; with occupation cells, 6; with sector-by-occupation cells, 10. Earnings by enterprise size are complete for 6 countries; employee counts by size are complete for all.

3 Method

Let n_{gc} be the number of employees of sex $g \in \{M, F\}$ in cell c , $s_{gc} = n_{gc} / \sum_c n_{gc}$ the employment share, and w_{gc} mean hourly earnings, so that the mean for each sex is $\bar{W}_g = \sum_c s_{gc} w_{gc}$. The difference in means splits exactly into

$$\bar{W}_M - \bar{W}_F = \underbrace{\sum_c (s_{Mc} - s_{Fc}) \frac{w_{Mc} + w_{Fc}}{2}}_{\text{between cells}} + \underbrace{\sum_c \frac{s_{Mc} + s_{Fc}}{2} (w_{Mc} - w_{Fc})}_{\text{within cells}}.$$

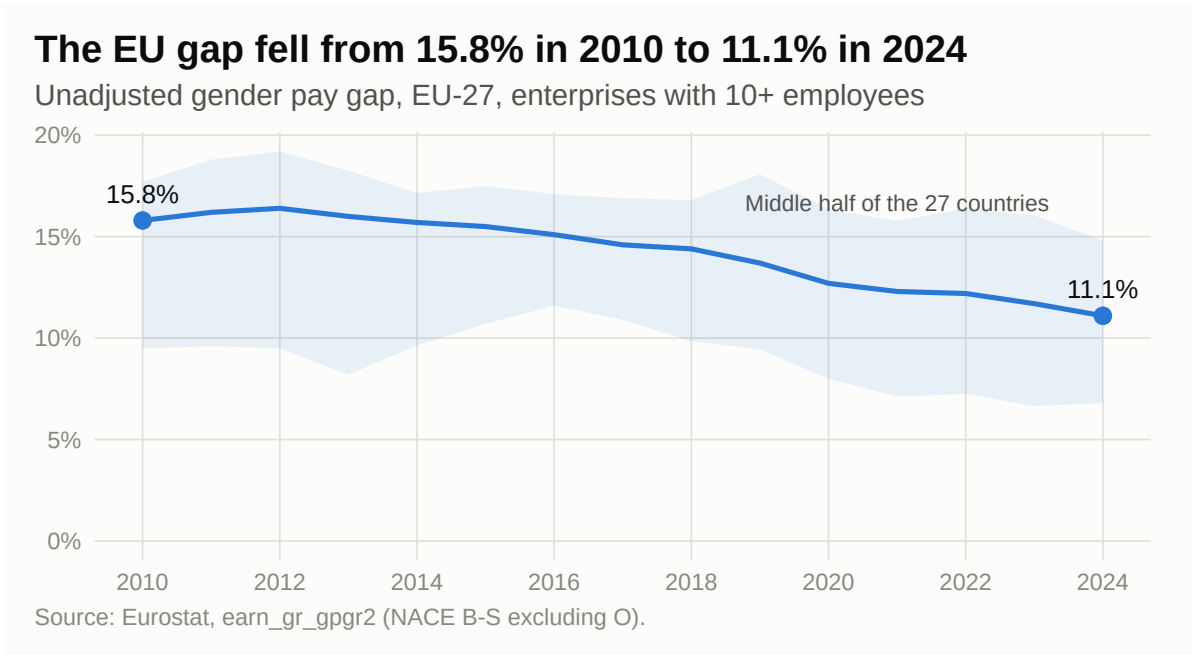
Dividing by $\bar{W}_M$ expresses both parts in points of the gap as Eurostat defines it. The averaged weights follow Reimers (1983) and avoid the index-number problem of the one-sided split of Oaxaca (1973) and Blinder (1973), in which the result depends on whose wages value the differences in composition. The one-sided splits are reported as a robustness check; the symmetric one is their mean.

This is an aggregate decomposition: it uses cell means, not individual records, and it attributes nothing to education, experience or hours. The within-cell part is therefore not an adjusted gap or an estimate of discrimination. It measures how different the pay of women and men is once they are compared inside the same broad sector, which is the direction in which the Directive moves the comparison.

When a cell has no employees of one sex, the other sex’s wage is used for both, so the cell adds nothing within and contributes only through composition. The EU figure is the employee-weighted mean of the national figures, which is how Eurostat compiles the published EU gap (Eurostat 2026).

4 Results

4.1 The published gap

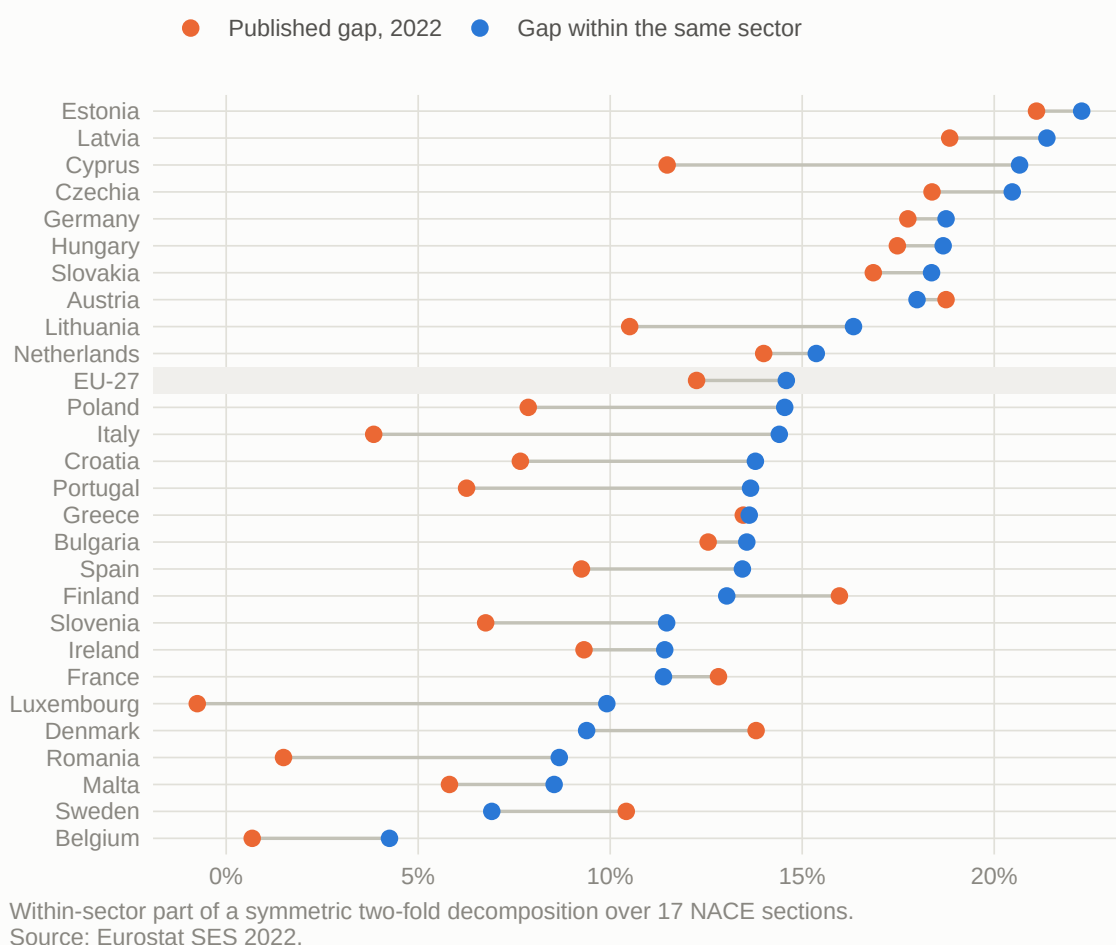


The EU gap fell from 15.8% in 2010 to 11.1% in 2024, narrowing in 24 of 27 countries and widening in Croatia and Slovenia. In 2024 it ranged from -0.8% (Luxembourg) to 18.8% (Estonia).

4.2 Between and within sectors

The published gap understates the gap inside sectors

Gender pay gap on mean hourly earnings, enterprises with 10+ employees, 2022



For the EU, the published 2022 gap of 12.2% splits into –2.3 points between sectors and 14.6% within them. The between-sector part is negative in 22 countries, and the within-sector gap exceeds the published one in 22. The difference is largest in Luxembourg, Italy, Cyprus, Portugal, Romania (Table A1).

The negative composition effect has a simple source. Women are concentrated in sections with above-average hourly earnings, above all education (P) and health and social work (Q). In Italy 22% of women in scope work in education against 5% of men, and 18% in health and social work against 6%; composition lowers the Italian gap by 10.6 points, leaving 14.4% within sectors. A low headline can also reflect selection into employment, since where fewer women work those who do tend to have higher-wage characteristics (Olivetti and Petrongolo 2008). The decomposition does not separate the two explanations, but both imply that the national figure understates the gap employers will measure among their own staff.

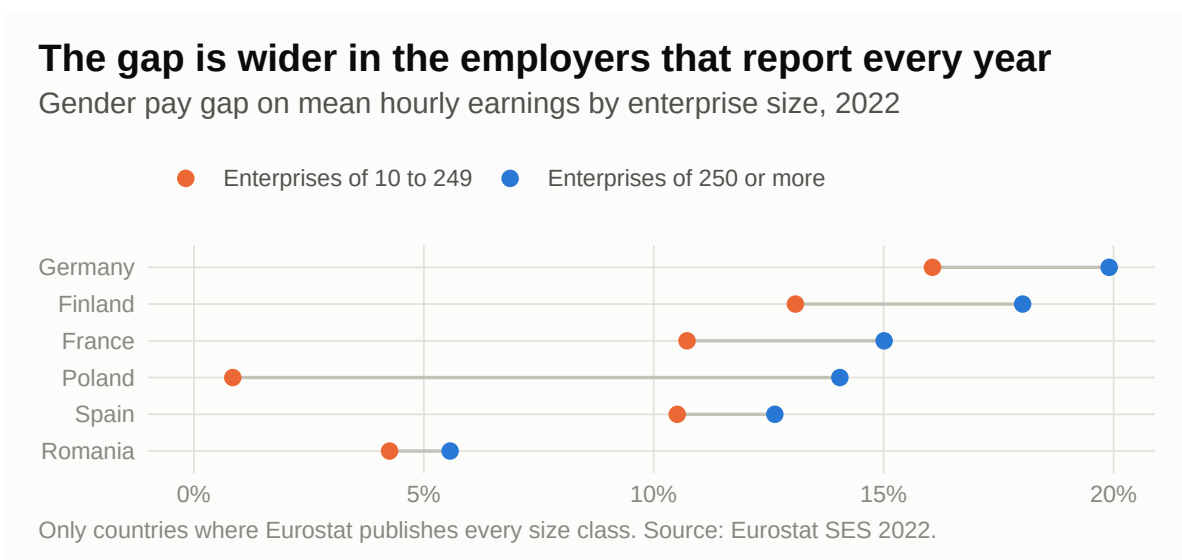
4.3 Finer cells

Country	Published gap	Within occupation	Within sector and occupation
Austria	18.7	15.6	14.5
Bulgaria	12.6		13.7
Czechia	18.4		15.9

Country	Published gap	Within occupation	Within sector and occupation
Denmark	13.8	11.6	8.1
Finland	16.0		9.5
Germany	17.7	16.4	13.2
Greece	13.5	14.5	11.9
Hungary	17.5		16.8
Italy	3.8		14.1
Romania	1.5	13.1	12.0
Slovenia	6.8	14.2	

With finer cells the within part stays between 8.1% and 16.8%. In low-headline countries it confirms a wide gap among women and men in similar work; in high-headline countries such as Austria and Germany, occupations account for part of the gap and the within part falls a few points below the headline.

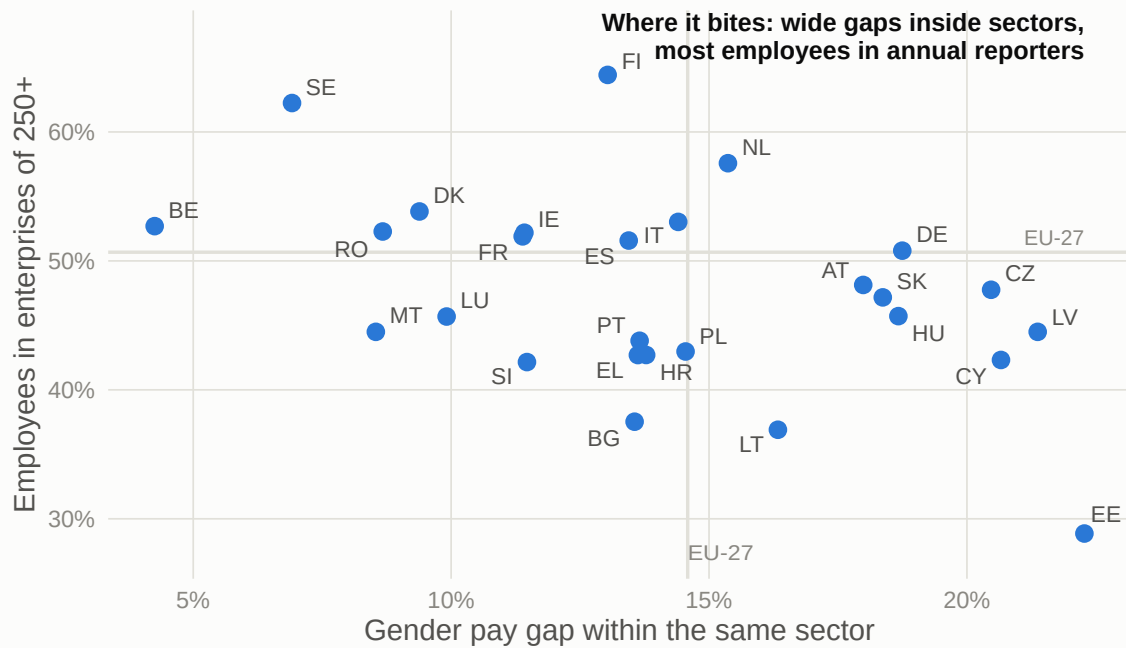
4.4 Enterprise size



Enterprises of 250 or more employ 51% of employees in scope across the EU, from 29% in Estonia to 64% in Finland; enterprises of 50 to 249 employ a further 24%. SES size classes do not separate the Directive's 100 and 150 thresholds. In all 6 countries with complete earnings by size, the gap is wider in enterprises of 250 or more.

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Within-sector gender pay gap (x) and share of employees in enterprises of 250 or more (y), 2022

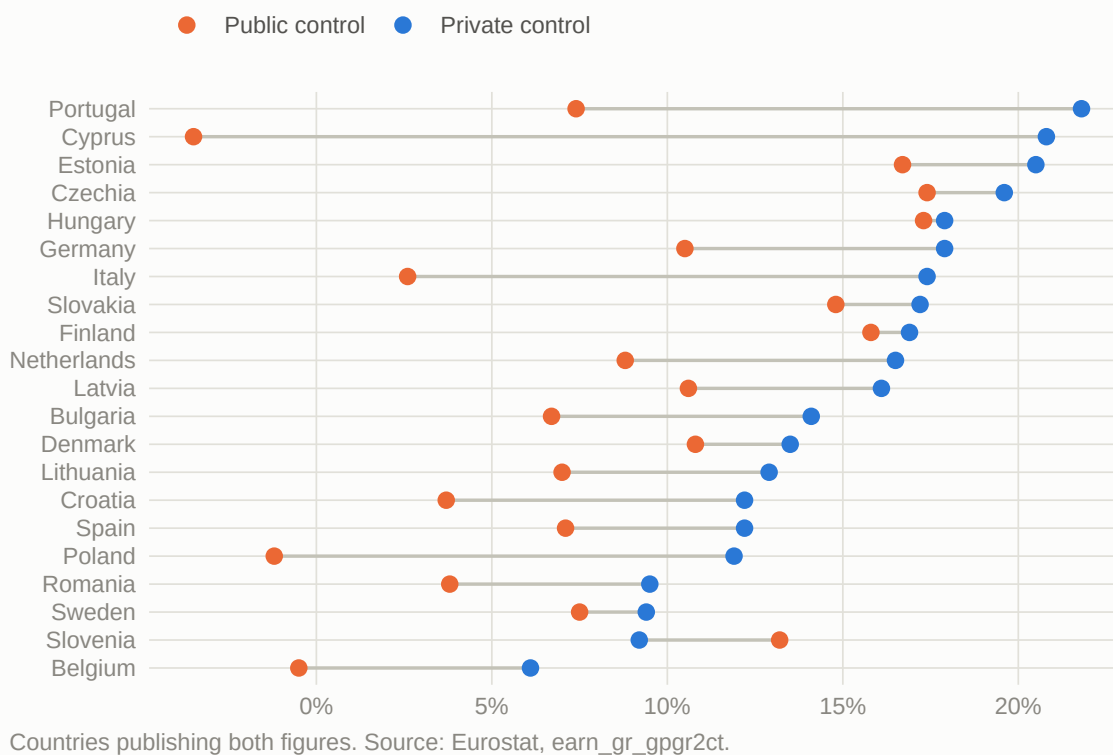


Germany and Netherlands combine a within-sector gap above the EU value with an above-average share of employees in annual reporters. Estonia, Latvia, Cyprus, Czechia, Hungary, Slovakia, Austria, Lithuania have wide within-sector gaps but more employment in mid-sized enterprises, where reporting is three-yearly or later.

4.5 Economic control and age

The private sector carries the wider gap

Unadjusted gender pay gap by economic control of the enterprise, 2024



In 20 of 21 countries the gap is smaller under public control (the exception is Slovenia). Across countries, the median gap rises from 4.4% under 25 to 13.8% at 45-54.

5 Robustness

Reference wages. Valuing composition at men's wages, the within-sector gap exceeds the published one in 22 countries; at women's wages, in 19. The one-sided within parts differ from the symmetric one by at most 5.4 points.

Reconciliation. Sector cells rebuild every published national gap; the largest difference is 0.42 points. The EU figure rebuilt as an employee-weighted mean matches the published 12.2%; pooling EU earnings instead gives 13.2%, because it mixes countries' wage levels.

Cell size. The within part is sensitive to how coarse the cells are, as the finer decompositions show. Categories of workers inside an employer are much narrower than any cell here, so the within part should be read as a guide to direction, not to the size of the gaps employers will report.

6 Implications

Three points follow for employers and advisers preparing the first reports. First, the national gap is a poor benchmark: in most Member States the comparison the Directive requires is closer to the within-sector view, which is wider. Second, the difference is largest where the headline is smallest, so employers in Luxembourg, Italy, Cyprus, Portugal, Romania, Poland, Croatia and Lithuania have the most reason not to be reassured by it. Third, the first wave covers half of the workforce in scope and, where it can be measured, the wider gaps. A dry run on current payroll, as in the Pay Transparency Readiness Kit (Perroni 2026), is the practical way to find out before June 2027.

7 Limitations

The SES 2022 predates the Directive and excludes public administration (section O), which the Directive covers, and enterprises with fewer than ten employees. Enterprises are statistical units and may not coincide with the legal employers that report. The analysis uses published cell means, so it cannot control for individual characteristics, and suppressed cells restrict the finer decompositions to a subset of countries. Gaps are in mean hourly earnings; the Directive also asks for medians, annual pay and complementary or variable components.

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Appendix: country results

Country	Published 2022	Rebuilt 2022	Between	Within	Coverage %	In 250+ %	Published 2024
Austria	18.7	18.7	0.8	18.0	100.0	48.1	17.6
Belgium	0.7	0.7	-3.6	4.3	100.0	52.7	0.7
Bulgaria	12.6	12.6	-1.0	13.6	100.0	37.5	12.0
Croatia	7.7	7.7	-6.1	13.8	100.0	42.7	6.6
Cyprus	11.9	11.5	-9.2	20.7	98.4	42.3	11.8
Czechia	18.4	18.4	-2.1	20.5	100.0	47.8	18.5
Denmark	13.8	13.8	4.4	9.4	100.0	53.8	14.0
Estonia	21.1	21.1	-1.2	22.3	100.0	28.9	18.8
Finland	16.0	16.0	2.9	13.0	100.0	64.4	16.3
France	12.8	12.8	1.4	11.4	100.0	51.9	11.8
Germany	17.7	17.8	-1.0	18.7	100.0	50.8	15.6
Greece	13.5	13.5	-0.2	13.6	100.0	42.7	13.4
Hungary	17.5	17.5	-1.2	18.7	100.0	45.7	16.9
Ireland	9.3	9.3	-2.1	11.4	100.0	52.2	8.3
Italy	3.8	3.8	-10.6	14.4	100.0	53.0	5.3
Latvia	18.9	18.8	-2.5	21.4	100.0	44.5	13.9
Lithuania	10.5	10.5	-5.8	16.3	100.0	36.9	10.0
Luxembourg	-0.7	-0.8	-10.7	9.9	99.1	45.7	-0.8
Malta	5.8	5.8	-2.7	8.5	99.7	44.5	4.9
Netherlands	14.0	14.0	-1.4	15.4	100.0	57.6	11.2
Poland	7.8	7.9	-6.7	14.5	100.0	43.0	4.0
Portugal	6.3	6.3	-7.4	13.7	100.0	43.8	7.0
Romania	1.5	1.5	-7.2	8.7	100.0	52.3	3.7
Slovakia	16.8	16.9	-1.5	18.4	100.0	47.2	15.7
Slovenia	6.8	6.8	-4.7	11.5	100.0	42.2	8.0
Spain	9.2	9.3	-4.2	13.4	100.0	51.6	7.3
Sweden	10.4	10.4	3.5	6.9	100.0	62.2	11.2
EU-27	12.2	12.2	-2.3	14.6		50.7	11.1