BARGAINING FOR EQUALITY

Mapping the inequality challenges facing Europe

Working Paper

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September 2022

European Commission

With financial support from the European Union

(Grant agreement no. VS/2021/0209)

September 2022

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Please refer to this publication as follows:
Blaziene, I. & Mieziene, R. (2022) Mapping the inequality challenges facing Europe. Working Paper. Leuven: BFORE project VS/2021/0209.

This publication is also available via https://hiva.kuleuven.be/sites/bfore

This publication is part of the BFORE 'Bargaining for Equality - Strengthening collective bargaining systems to ensure fair wages and address income inequality in Europe' project, which has received funding by the European Commission, DG Employment, Social Affairs and Inclusion, within the EU Programme for Employment and Social Innovation (EaSI) under the Grant agreement no. VS/2021/0209.

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1. Types of inequalities

Inequality has always been one of the major political issues in Europe and across the globe. Although there is a very long history of economic inequality research, interest in this topic has grown significantly since the economic recession of 2008-2009 (Peterson, 2017[1]). Since then, the inequality in Europe increased substantially (ETUI, 2021[2]). Studies have shown that inequality negatively affects population's health, social and economic development as well as psychological well-being of the society (Buttrick et al, 2017[3]; Seo et al, 2020[4]; Drabo, 2011[5]), therefore our aim should be narrowing the inequality gaps between and within the countries. Inequality embraces many different dimensions (social, economic, health, educational, etc.), many of which has changed greatly, both historically and geographically (Alacevich & Soci, 2018[6]). In 2020, the Greater Manchester Independent Inequalities Commission developed a framework showing the ways in which different kinds of inequalities interact. In their model, Commission singled out socio-economic inequalities, demographic inequalities and geographic inequalities (Figure 1).

Figure 1. Model of interacting inequalities

Source: The Greater Manchester Independent Inequalities Commission: The Next Level: Good Lives for All in Greater Manchester (2020)

1 Peterson E. W.F. (2017) Is Economic Inequality Really a Problem? A Review of the Arguments. Social Sciences 6, No. 4: 147. https://doi.org/10.3390/socsci6040147

2 ETUI (2021) Benchmarking Working Europe 2021. Unequal Europe. Brussels, ETUI. https://www.etui.org/sites/default/files/2021-12/01-ETU%20BM2021-Small.pdf

3 Buttrick N. R., Heintzelman S. J., Oishi S. (2017) Inequality and well-being, Current Opinion in Psychology. Volume 18, December 2017, p. 15-20, https://doi.org/10.1016/j.copsyc.2017.07.016

4 Seo H-J, Kim H, Lee YS. (2020) The Dynamic Relationship between Inequality and Sustainable Economic Growth. Sustainability 12(14): 5740. https://doi.org/10.3390/su12145740

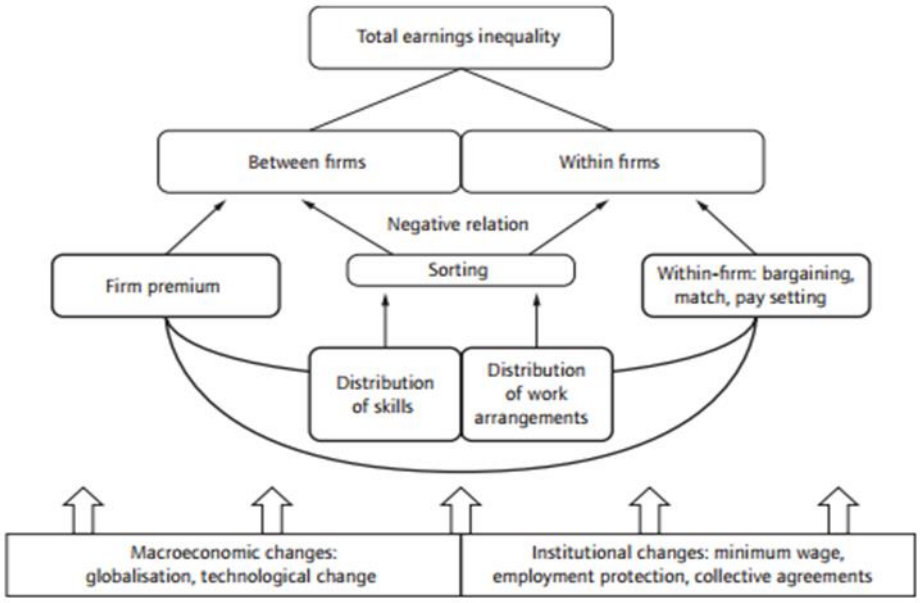
5 Drabo A. (2011) Impact of Income Inequality on Health: Does Environment Quality Matter? Environment and Planning A: Economy and Space 43(1): 146-165. doi:10.1068/a43307

6 Alacevich M., Soci A. (2018) Inequality: a short history. Washington D.C.: Brookings Institution Press.

Despite the wide range of inequalities that exist, one component that takes place alongside other inequalities and poses dramatic challenges to modern societies is economic inequality (Alacevich & Soci, 2018). Economic inequality includes the distribution of both income and wealth and these economic variables tend to be 'related to such inherently valuable attributes as good health, longevity, education, and general satisfaction and happiness' (Peterson, 2017, p. 2). When looking at economic inequality, researchers usually distinguish between wage (also sometimes referred to as pay or earnings), income and wealth inequality (Atkinson & Morelli, 2014[7]; Trapeznikova, 2019[8]).

Wage or earnings inequality refers 'to differences in wages paid to different people' (Trapeznikova, 2019). According to Zwysen (2022[9]), three main components can drive the changes in earnings inequality within and between firms: sorting (division of skills and work arrangements/the composition of workers); firm premium (the differences in how firms pay similar workers - performance pay schemes, bonuses, etc.); and pay setting mechanism and bargaining power (Figure 2).

Figure 2. Conceptual framework of earnings inequality



Source: Zwysen W. (2022) Wage inequality within and between firms. Macroeconomic and institutional drivers in Europe. Working paper 2022.02. ETUI

In a perfectly competitive market, wages reflect differences in skills (between low- or high-skilled workers) and productivity among workers, differences in the nature of the job (Trapeznikova, 2019; Zwysen, 2022). However, research shows that in recent decades 'changes are disproportionately driven by differences in pay between workplaces rather than differences between colleagues within a workplace' (Zwysen, 2022, p. 5).

Besides the mentioned three components, the overall rise in wage inequality is often attributed to macroeconomic factors such as technological change and globalisation that encourage polarisation in the labour market (e.g. increasing the demand for high-skilled workers; widening the gap between companies in their productivity and revenue because of different abilities to take up technological innovations, etc.) (Zwysen, 2022). In addition to macroeconomic factors, institutional factors also

7 Atkinson A. B., Morelli S. (2014) Chartbook of economic inequality. ECINEQ. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2422269

8 Trapeznikova, I. (2019) Measuring income inequality. IZA World of Labor: 462 doi: 10.15185/izawol.462

9 Zwysen W. (2022) Wage inequality within and between firms. Macroeconomic and institutional drivers in Europe. Working paper 2022.02. ETUI.

matter. Many studies point out that institutional changes such as rate of unionisation or wage setting mechanisms, collective bargaining power are important factors that have an impact on wage inequality. Declining trade union power and collective bargaining systems as well as weaker institutional framework (labour protection laws and minimum-wage setting mechanisms) are associated with higher wage inequality, and vice versa (Garnero, 2020[10]; Ramos et al[11]; Bosch & Weinkopf, 2017[12]; Zwysen, 2022).

Another dimension of economic inequality that is probably the most widely discussed among different actors is income inequality, which shows 'the extent to which income is distributed unevenly across people or across households' (Trapeznikova, 2019). According to Heshmati (2004, p. 4), 'income inequality refers to the inequality of the distribution of individuals, household or some per capita measure of income'. Income inequality is typically measured by the market (gross) or net income indicators and by tracking changes in the income shares of the populations (e.g. quintiles) (Dabla-Norris et al, 2015[13]). When analysing income inequality, researchers can distinguish between individual versus family (household) income, pre-tax versus after-tax (disposable) income, and labour earnings versus capital income. Income inequality is closely related to wage inequality since labour earnings (wages, salaries, bonuses, etc.) is the main component of income inequality. As wages are a major part of income (especially at the lower end of the distribution), their increases may reduce income inequalities (EC, 2017[14]). Other sources of income include capital income derived from dividends, interest on savings accounts, rent from real estate, social and other government transfers (Trapeznikova, 2019).

The third dimension of economic inequality is wealth inequality, which measures the differences in wealth distribution across population. While income refers to the flow of money over a given period, an individual's wealth represents the stock of all assets that a person holds (e.g. financial assets, such as bonds and stocks, property, and savings (Trapeznikova, 2019). Wealth inequality is sometimes referred to as the distribution of personal wealth (material assets) that can be sold in the marketplace (Davies & Shorrocks[15]). Wealth is usually defined as the current market value of all the assets owned by the household, net of all their debts (Zucman, 2016[16]). It is important to note that the dimensions of income and wealth are not perfectly correlated. Research shows that the correlation between labour earnings, income, and wealth is positive but below one (De Nardi & Fella, 2017[17]). According to several studies, the concentration of wealth is much higher than that of earnings and income. According to the World Bank, wealth inequality is significantly higher than income inequality and it is particularly high in EU17-North (Ireland, the United Kingdom, Finland, Denmark and Sweden) and EU17-Continental countries (Austria, France, Belgium, Luxembourg, Germany and the Netherlands)[18] (Inchauste & Karver, 2018[19]). However, wealth inequality is much more difficult to measure due to the lack of credible data sources. According to Zucman (2016), the ideal source of wealth distribution would be wealth tax declarations for the entire population, however no country has such data today.

10 Garnero A. (2020) The impact of collective bargaining on employment and wage inequality: Evidence from a new taxonomy of bargaining systems.
European Journal of Industrial Relations 27(2): 185-202.

11 Ramos R., Sanromá E., Simón H. (2021) Collective bargaining levels, employment and wage inequality in Spain, Journal of Policy Modeling. https://doi.org/10.1016/j.jpolmod.2021.09.006.

12 Bosch G., Weinkopf C. (2017) Reducing Wage Inequality: The Role of the State in Improving Job Quality. Work and Occupations 44(1): 68-88. doi:10.1177/0730888416683756

13 Dabla-Norris E., Kochhar K., Suphaphiphat N., Ricka F., Tsounta E. (2015) Causes and Consequences of Income Inequality-A Global Perspective. IMF.

14 EC (European Commission) (2017) Wage developments and wage setting systems. European Semester Thematic Factsheet.

15 Davies J.B., Shorrocks A.F. (2000) Chapter 11. The distribution of wealth. Handbook of Income Distribution 1: p. 605-675, https://doi.org/10.1016/S1574-0056(00)80014-7

16 Zucman (2016) Wealth inequality. The Stanford Center on Poverty and Inequality, https://inequality.stanford.edu/sites/default/files/Pathways-SOTU-2016-Wealth-Inequality-3.pdf

17 De Nardi M., Fella G. (2017) Saving and wealth inequality. Review of Economic Dynamics 26: p. 280-300, https://doi.org/10.1016/j.red.2017.06.002

18 In this study EU-17 included EU-15 + Cyprus and Malta.

19 Inchauste G., Karver J. (2018) Understanding Changes in Inequality in the EU Background to 'Growing United: Upgrading Europe's Convergence Machine'. The World Bank report.

In addition to economic inequality, Therborn (2012) also distinguishes 'existential' inequality that arises from unequal social treatment of persons or 'unequal socio-economic positions as a result of racial, gender, or other types of discrimination based on personal characteristics' (Peterson, 2017; Therborn, 2012[20]). It has given rise to a range of egalitarian movements - feminist, anti-racist, nationalist and others. However, this type of inequality has received little systematic analysis so far (Therborn, 2018[21]).

In this study we are mainly focusing on wage and income inequality, as well as to some extent - depending on data availability - on inequality on the basis of socio-economic characteristics such as gender.

20 Therborn G. (2012). The Killing Fields of Inequality. Int J Health Serv. 42: 579-589. 10.3898/136266209789024960

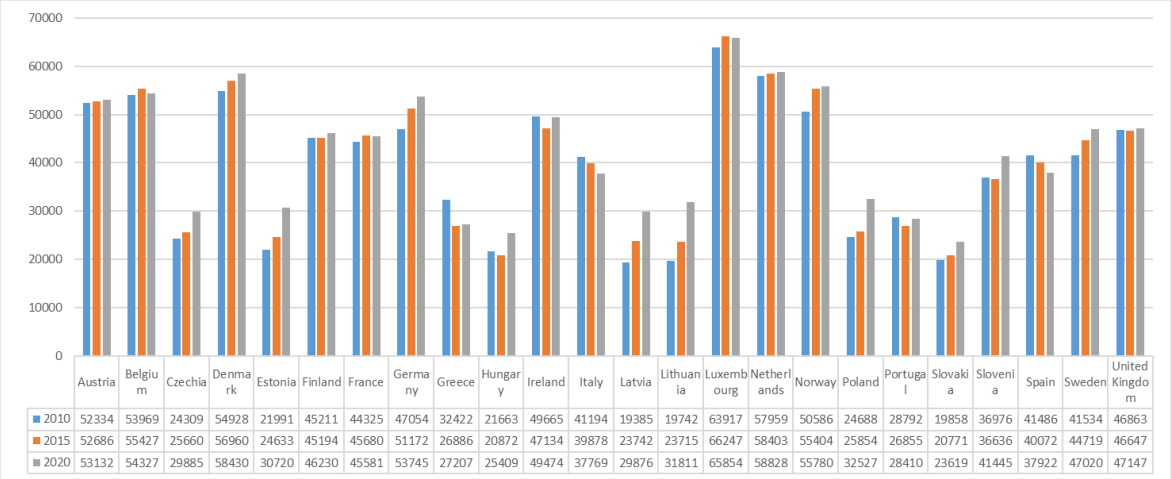
21 Therborn G. (2018) How the dimensions of human inequality affect who and what we are, 8 July. Available at: https://theconversation.com/how-the-dimensions-of-human-inequality-affect-who-and-what-we-are-137296

2. Wage (earnings) inequality in EU27, Norway and the UK

According to a recent ETUI study, wage or earnings inequality within Europe followed two main trends over the period from 2002 to 2018: (1) an increase in the between-country variance in earnings in 2004 and in 2007 (after accession of the new member states), followed by a convergence in earnings since then; and (2) an increase in inequality within countries driven by a large increase in inequality between firms, particularly in post-crisis period in 2010 and in 2014. A large increase in the variation in annual earnings was determined by an increase in non-standard forms of work such as temporary work and a greater variation in hours worked (Zwysen, 2022).

As we can see from the Figure 3, average annual wages in EU countries in 2020 (in 2020 constant prices at 2020 USD PPPs) varied from 23,619 USD in Slovakia to 65,854 USD in Luxembourg. According to OECD data, during the last decade the most increase in annual wages was recorded in the Baltic countries: in Lithuania (61%), Latvia (54%), Estonia (39%); and the least - in Greece (-16%), Italy (-8%) and Spain (-8%). This data confirms Zwysen's (2022) conclusion, that during the last decade member states that joint EU in 2004 and 2007 moved towards convergence in earnings.

Figure 3. Average annual wages* in EU countries (in 2020 constant prices at 2020 USD PPPs)



	Austria	Belgium	Czechia	Denmark	Estonia	Finland	France	Germany	Greece	Hungary	Ireland	Italy	Latvia	Lithuania	Luxembourg	Netherlands	Norway	Poland	Portugal	Slovakia	Slovenia	Spain	Sweden	United Kingdom
2010	52334	53969	24309	54928	21991	45211	44325	47054	32422	21663	49665	41194	19385	19742	63917	57959	50586	24688	28792	19858	36976	41486	41534	46863
2015	52686	55427	25660	56960	24633	45194	45680	51172	26886	20872	47134	39878	23742	23715	66247	58403	55404	25854	26855	20771	36636	40072	44719	46647
2020	53132	54327	29885	58430	30720	46230	45581	53745	27207	25409	49474	37769	29876	31811	65854	58828	55780	32527	28410	23619	41445	37922	47020	47147

Source: OECD, https://stats.oecd.org, * per full-time and full-year equivalent employee in the total economy

While speaking about inequality within the countries, the research shows that the minimum wages (MW) is one of the factors that are shaping wage inequality, and the MW is a commonly used policy tool to assist low paid workers by providing a binding wage floor (Redmond et al, 2020[22]; Zwysen, 2022). According to Lin & Yun (2016), increasing the MW reduces inequality by decreasing the earnings gap between the median and the bottom decile (Lin & Yun, 2016[23]). Similar conclusions were drawn by

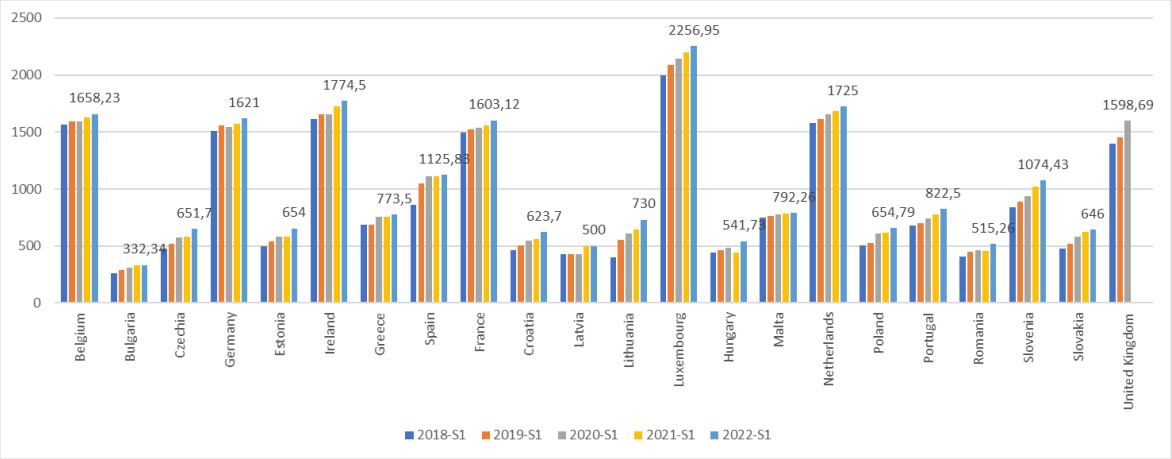
22 Redmond P., Doorley K., McGuinness S. (2020) The Impact of a Minimum Wage Change on the Distribution of Wages and Household Income. IZA DP No. 12914.

23 Lin C., Yun M.-S. (2016) The Effects of the Minimum Wage on Earnings Inequality: Evidence from China. Research in Labor Economics (Income Inequality Around the World) 44: 179-212.

Redmond et al. (2020). According to the authors, the MW was effective at increasing the wages of low-paid workers and in reducing hourly wage inequality in Ireland. The authors investigated a MW change that occurred in Ireland in 2016 (when minimum hourly rate of pay increased from €8.65 per hour to €9.15 per hour) and concluded that in the absence of a MW change, around 10% of workers in 2016 would have earned on or below the 2016 MW rate (€9.15 per hour) (Redmond et al, 2020). The impact of MW on wage inequality is confirmed by the German example. Germany introduced a statutory MW in 2015, that resulted in substantial decrease in wage inequality in Germany by raising wages in typically low-wage sectors, particularly in east Germany (Herzog-Stein et al, 2020[24]; ETUI, 2021).

As one may see from the Figure 4, the MW was rising in all EU member states with statutory MW over the last five years. The highest MW in 2022 was set in Luxembourg (€2,256), the lowest – in Bulgaria (€332). In Austria, Cyprus, Denmark, Finland, Italy, and Sweden there is no statutory MW, but sectoral minimum wages are set through collective bargaining (Detragiache et al, 2020[25]).

Figure 4. Monthly minimum wages in EU and the UK in 2018-2022 (1st half)



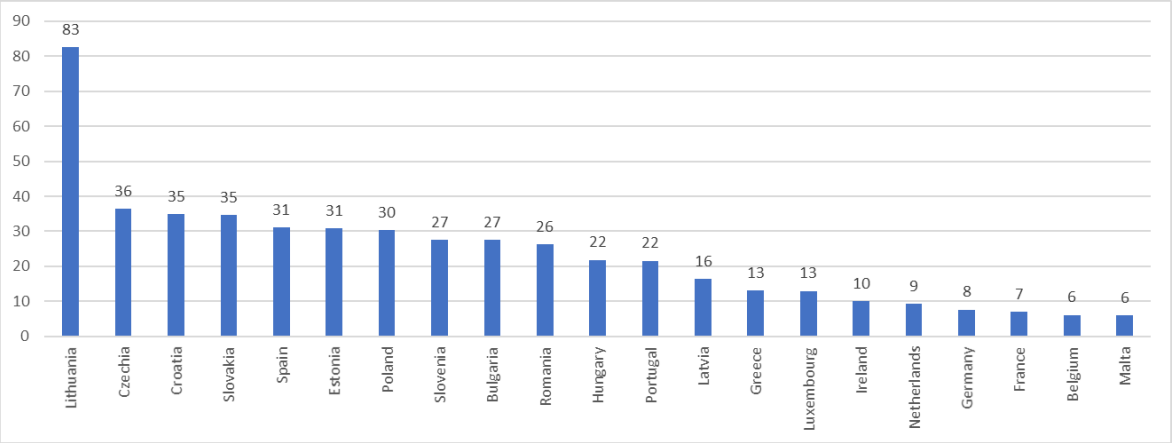
Source: Eurostat (earn_mw_cur)

Looking at the change over the last five years, the fastest growth in MW has been in Lithuania (83%). However, it should be noted that the real MW growth in this country is lower; such a high indicator is a result of a tax reform implemented in Lithuania which, as from 1 January 2019, consolidated social insurance contributions paid by the employer and the employee and shifted them onto the employee, resulting in a 1.289 times increase in gross wages in the country. Over the last five years, a rapid growth in MW (over 30%) has also been observed in Czechia, Croatia, Slovakia, Spain, and Estonia (Figure 5).

24 Herzog-Stein A., Lübker M., Pusch T., Schulten T., Watt A., Zwiener R. (2020) Fünf Jahre Mindestlohn - Erfahrungen und Perspektiven: Gemeinsame Stellungnahme von IMK und WSI anlässlich der schriftlichen Anhörung der Mindestlohnkommission 2020, Policy Brief 42.

25 Detragiache E., Ebeke C.H., Jirasavetakul L.-B. F., Kirabaeva K., Malacrino D., Misch F., Park H.W., Shi Y. (2020) A European Minimum Wage: Implications for Poverty and Macroeconomic Imbalances. International Monetary Fund, Volume 2020: Issue 059, https://doi.org/10.5089/9781513545073.001

Figure 5. The increase in monthly minimum wages in EU over 2018-2022

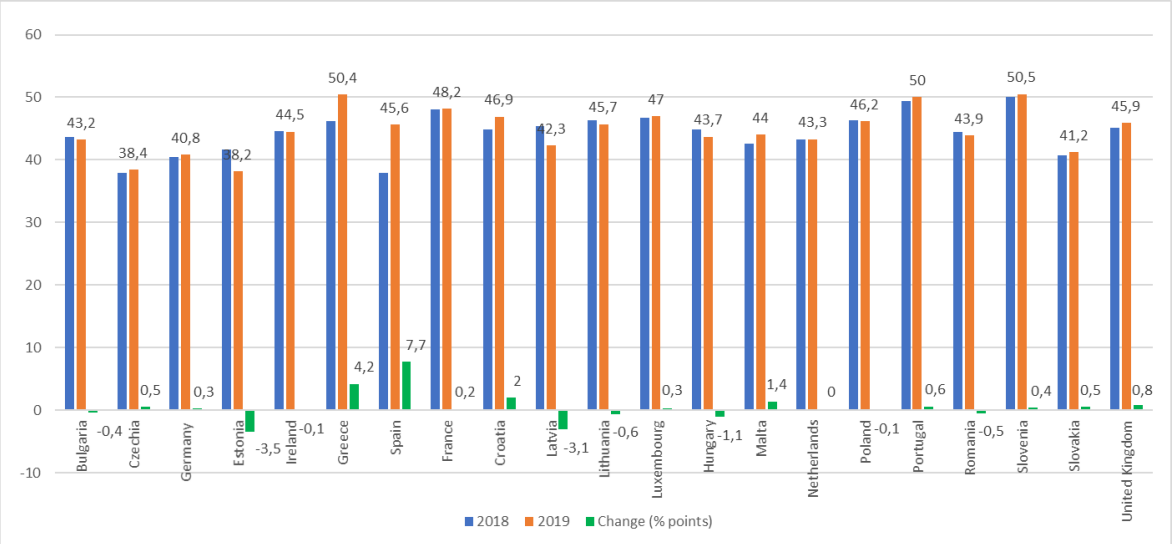


Source: Eurostat (earn_mw_cur)

Except absolute MW rates, for inequality analysis researchers often use so called Kaitz index which is defined as a ratio of the MW to the median or average wage of the working population. Small values of the Kaitz index indicate that the MW is far from the centre of the earnings distribution and therefore its impact is potentially low; conversely, a high Kaitz index shows that the MW is close to the centre of the distribution, thus it potentially affects a larger number of employees (Garnero et al; 2014). According to ETUI (2021), wage inequality during the period 2010-2019 increased in most of the countries where the Kaitz Index decreased and in the countries without a statutory MW (ETUI, 2021). A similar conclusion was drawn by Zwysen (2022). According to the author, inequality between and within firms tends to decline as the bite of the MW - where it is present - increases (Zwysen, 2022).

As one may see in Figure 6, in 2019 the highest Kaitz index (50% and over) was found in Slovenia, Greece and Portugal, the lowest - in Estonia, Czechia and Germany (40.8% and lower). The most rapid growth of Kaitz index in 2019 comparing to 2018 was recorded in Spain (increased by 7.7 percentage points) and Greece (by 4.2 percentage points). The most significant decrease of MW comparing to mean gross earnings was in Estonia (decreased by -3.5 percentage points) and in Latvia (by -3.1 percentage points).

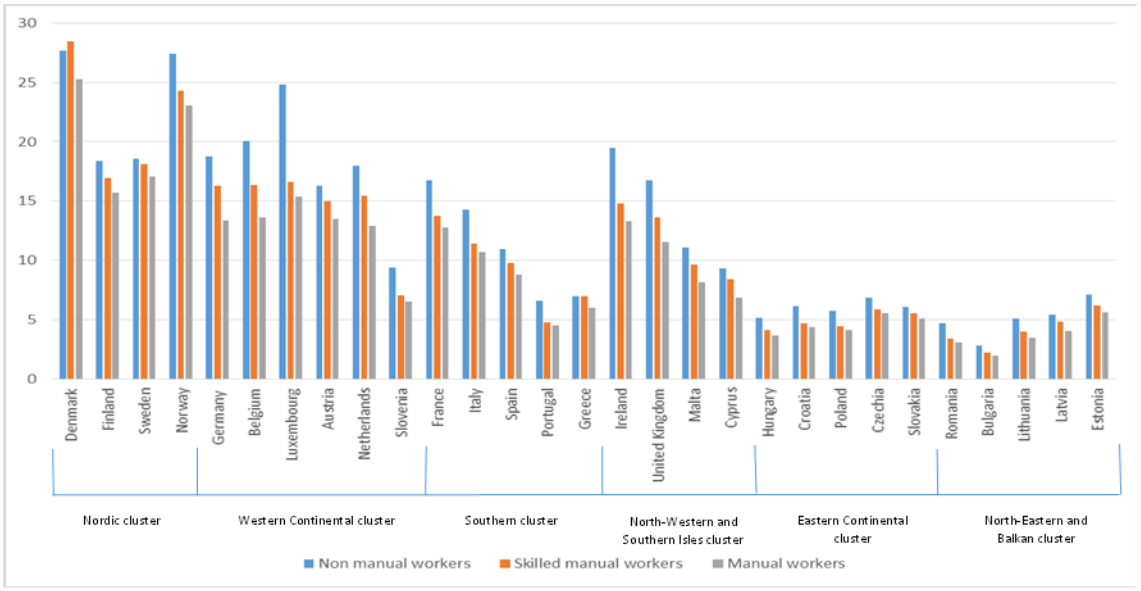
Figure 6. Monthly minimum wage as a proportion of the mean gross monthly earnings in EU in 2018-2019



Source: Eurostat (earn_mw_avgr2)

As it was already mentioned, in a perfectly competitive market, wages should reflect differences in skills between low- or high-skilled workers and productivity among workers (Zwysen, 2022). In Figure 7 median hourly earnings (in euro) by occupations are presented; unfortunately, the latest data available is for year 2018. According to Eurostat methodics, non-manual workers category covers: managers, professionals, technicians and associate professionals, clerical support workers and service and sales workers; the skilled manual workers category covers: skilled agricultural, forestry and fishery workers; manual workers category covers: craft and related trades workers, plant and machine operators and assemblers, elementary occupations. As one may derive from Figure 7, the highest difference in hourly earnings among non-manual workers and manual workers is recorded in Luxembourg, Ireland, the UK, Germany, Belgium, France, Italy; the lowest - in Slovakia, Greece, Sweden. Comparing situation in different country clusters, one may see that the lowest difference in median hourly earnings between non-manual workers and manual workers is in countries attributed to the Nordic cluster and Eastern Continental cluster; the highest - in countries attributed to the Western Continental cluster.

Figure 7. Median hourly earnings by occupations in different country clusters in EU27, Norway and the UK in 2018 (in euro)



Source: Eurostat, Structure of earnings survey (earn_ses_hourly)

According to OECD (2017), wage gap by age should also be considered an important issue when analysing wage inequality. According to the authors, although younger generations usually are richer as compared to previous generations, this trend might change. The millennial generation has been particularly hard hit by the Great Recession of 2008-2009 and its aftermath and this reduced their prospects for stable careers. Authors conclude that the future elderly population will experience old age in much more varied ways and will be exposed to growing disparities because of digitalisation, automation and further technical progress (OECD, 2017[26]). According to OECD data, currently rather high wage differences in the EU member states are recorded by age. In Table 1, one may see a wage gap in the EU countries by age. According to the OECD methodology, wage gap is defined as the difference between median earnings of 25-54-year-olds and that of 15-24-year-olds as well as of 25-54-year-olds and that of 55-64. Earnings refer to gross earnings of full-time dependent employees. A positive number means that seniors/youth earn X% less than prime-age workers; a negative number means that seniors/youth earn X% more than prime age workers. As we can see from the Table 1, in all EU countries for which data is available 15-24 age old persons earn less than prime age workers (25-54-year-olds). The smallest wage gap among these age groups is recorded in countries that joined EU in 2004 and later and in which average earnings are lower comparing to other EU countries (in Latvia -12.6%, Bulgaria -15.4%; Romania -17.8%). The largest wage gap between 25-54-year-olds and that of 15-24-year-olds in 2018 was in Ireland (39.6%), the Netherlands (37.8%) and Denmark (37.7%).

26 OECD (2017) Preventing Ageing Unequally, OECD Publishing, Paris.

Table 1. Wage gap by age in EU in 2018 (%) (median earnings)

	25-54-year-olds and that of 15-24-year-olds	25-54-year-olds and that of 55-64-year-olds
Austria	25.8	-11.2
Belgium	25.6	-18.8
Denmark	37.7	-0.2
Estonia	19.1	19.6
Finland	26.7	-0.8
France	24.8	-9.1
Germany	32.8	-10.0
Hungary	21.9	2.7
Ireland	39.6	-5.5
Italy	19.8	-16.8
Latvia	12.6	21.3
Lithuania	18.5	13.2
Luxembourg	30.4	-7.8
Netherlands	37.8	-14.0
Portugal	20.9	-1.1
Slovakia	21.5	6.1
Slovenia	25.4	-9.6
Spain	27.8	-11.0
Bulgaria	15.4	7.2
Croatia	25.2	-5.2
Cyprus	34.1	-9.7
Malta	24.4	11.1
Romania	17.8	-3.7

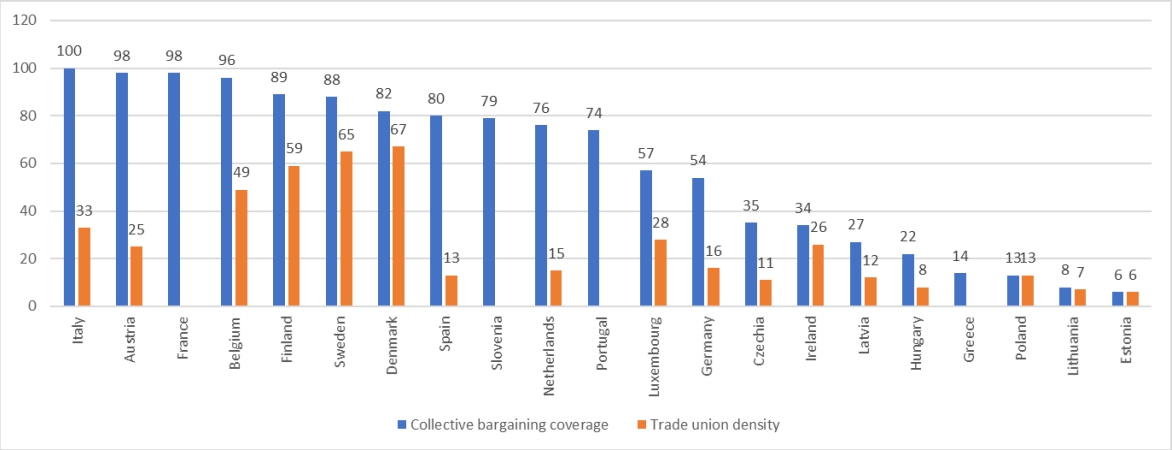
Source : OECD, https://stats.oecd.org

As regards the wage gap between people aged 25-54 and those aged 55-64, there exists much greater heterogeneity between countries. In some countries, earnings of older workers exceed that of prime age workers. Such countries include Belgium (-18.8%), Italy (-16.8%), the Netherlands (-14%), Spain (-11%), etc. In other countries, earnings of older workers are significantly lower than that of prime age workers. In this group of countries, the Baltic countries, in particular Latvia and Estonia, stand out, where the earnings of older workers are by 21.3% and 19.6% lower, respectively, than that of people aged 55-64 (Table 1).

Another important factor that is shaping wage inequality is collective bargaining and trade union density. Reserach shows that the variance of wages is lower in countries which have greater union density and a higher number of workers covered by collective pay agreements. Wage inequality is on average lower in those countries where there is a high rate of union density (Italy, Sweden, Belgium) and higher where union density and collective bargaining coverage are quite low (the Baltic states) (Zwysen, 2022). Garnero et al (2014) explored the link between different institutional features of MW systems and earnings inequalities across European countries and concluded that both a national statutory minimum and, in countries with sectoral minima, higher collective bargaining coverage is significantly associated with lower levels of wage inequalities and a smaller fraction of workers paid below the prevailing minima (Garnero, 2014).

Figure 8 presents collective bargaining coverage and trade union density in EU in 2019 (or most recent data available). The highest bargaining coverage (or the percentage of employees with the right to bargain) in EU in 2019 was in Italy, Austria France and Belgium (96% and over), the lowest - in Estonia (6%) and Lithuania (8%). The highest trade union density in 2019 (or most recent data available) was in the Nordic countries - Denmark (67%), Sweden (65%) and Finland (59%), the lowest - again, in Estonia and Lithuania (6% and 8%, accordingly).

Figure 8. Collective bargaining coverage and trade union density in EU in 2019 (or most recent data available) (%)



Source: OECD, https://stats.oecd.org

Wage inequality is also tightly connected with in-work poverty since low pay is one of the main factors contributing to the incidence of in-work poverty in European households. According to Eurostat, individuals are considered poor (or at risk of poverty) if they live in households with equivalised income below 60% of the national household median. Individuals are considered employed if they were working for at least seven months during the income reference period of one year (McKnigh et al, 2016[27]). As we can see in Table 2, in 2020, the highest in-work at-risk-of-poverty rate was recorded in Norway (23.7%), Romania (23.3%) and Denmark (21%); the lowest - in Czechia (1.3%), Belgium (3.1%), Malta (3.4%). The largest increase (of 14.7 percentage points) in the in-work at-risk-of-poverty rate in the period from 2010 to 2020 was recorded in Estonia, the country with the lowest bargaining coverage and the lowest trade union density. The largest decrease (8.1 percentage points) in the share of the working poor over the mentioned period was in Sweden that has the second highest trade union density in Europe.

27 McKnigh A., Stewart, Himmelweit S. M., Palillo M. (2016) Low pay and in-work poverty: preventative measures and preventative approaches. European Commission.

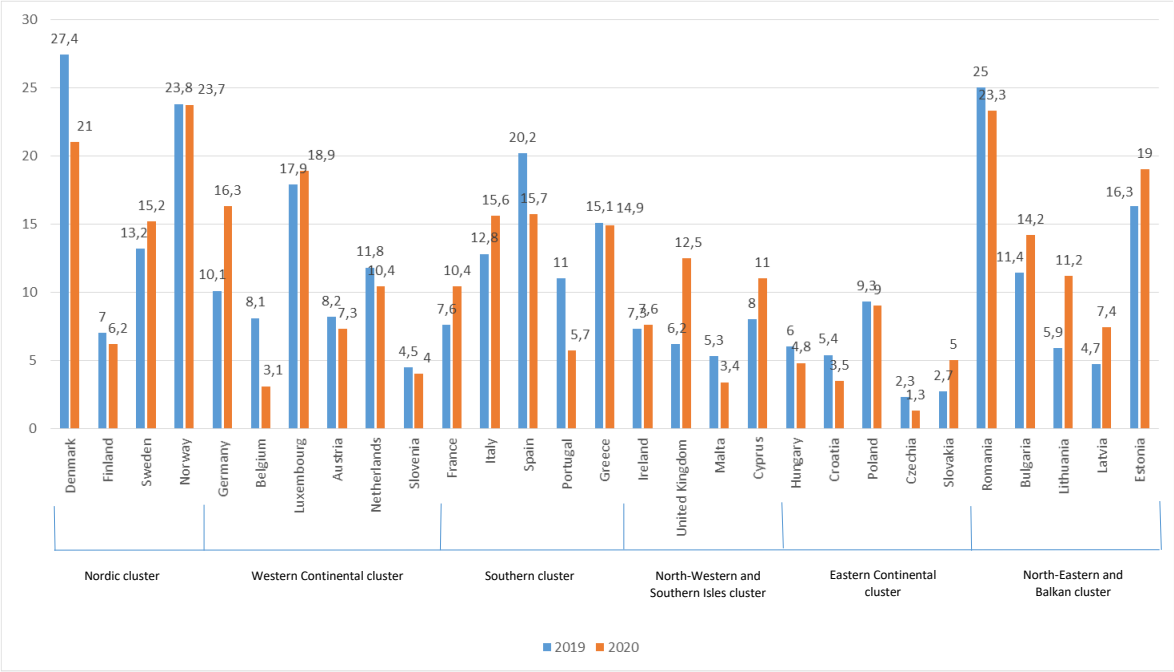
Table 2. In-work at-risk-of-poverty rate in EU27, Norway and the UK in 2010-2020

Time	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
EU - 27 (from 2020)	11.8	11.7	11.7	12.1	13.5	12.5	13.2	12.2	12.0	11.6	:
Belgium	4.5	6.6	3.5	2.7	6.9	6.6	4.8	9.0	4.6	8.1	3.1
Bulgaria	7.5	10.5	11.3	6.5	9.6	10.5	13.5	14.7	15.4	11.4	14.2
Czechia	2.6	2.4	5.2	3.1	1.3	1.8	3.1	1.5	3.9	2.3	1.3
Denmark	24.5	19.9	23.8	22.0	17.7	19.3	21.5	19.1	30.8	27.4	21.0
Germany	10.6	9.6	10.3	11.5	13.7	11.5	14.0	12.6	13.4	10.1	16.3
Estonia	4.3	10.3	9.3	7.2	10.2	12.4	7.4	18.4	14.4	16.3	19.0
Ireland	5.6	11.5	10.2	3.2	9.0	6.1	5.0	9.3	6.2	7.3	7.6
Greece	11.9	12.9	13.3	18.1	20.2	19.2	19.0	14.1	14.6	15.1	14.9
Spain	14.9	12.1	12.3	15.5	21.3	24.7	18.3	19.0	15.4	20.2	15.7
France	12.2	11.2	12.0	12.5	12.8	10.2	12.8	9.8	8.7	7.6	10.4
Croatia	7.6	7.6	5.5	9.1	6.3	5.8	8.5	7.3	4.8	5.4	3.5
Italy	12.8	15.1	13.2	13.7	16.4	12.8	14.4	12.3	12.8	15.6	:
Cyprus	8.5	10.1	9.0	10.7	6.4	15.0	10.2	13.7	6.8	8.0	11.0
Latvia	8.0	8.3	5.6	9.6	6.5	9.6	8.5	7.0	4.9	4.7	7.4
Lithuania	11.8	6.1	5.8	7.0	6.5	11.9	9.1	13.4	11.0	5.9	11.2
Luxembourg	9.1	11.8	10.2	11.9	13.1	13.9	9.3	13.0	11.6	17.9	18.9
Hungary	6.4	6.2	5.2	9.5	6.6	14.2	8.6	6.6	7.9	6.0	4.8
Malta	4.9	5.3	3.7	3.7	2.4	3.5	3.6	4.6	3.8	5.3	3.4
Netherlands	6.9	8.0	3.2	5.8	7.5	7.1	7.1	10.5	10.3	11.8	10.4
Austria	8.0	9.4	12.5	9.8	8.0	9.9	12.4	8.4	8.6	8.2	7.3
Poland	12.2	11.0	11.6	11.7	10.9	10.3	10.9	11.4	11.6	9.3	9.0
Portugal	8.2	11.7	11.0	13.6	13.3	10.6	12.0	11.0	11.8	11.0	5.7
Romania	23.7	31.6	30.5	28.4	32.8	33.5	31.2	28.2	22.7	25.0	23.3
Slovenia	3.6	3.4	6.1	7.5	9.9	7.0	7.0	5.4	6.5	4.5	4.0
Slovakia	4.1	5.5	5.6	3.3	4.6	6.1	2.7	3.8	3.1	2.7	5.0
Finland	8.7	7.9	8.9	7.6	6.0	7.5	4.8	4.2	6.3	7.0	6.2
Sweden	23.3	16.9	16.3	19.4	19.3	18.3	16.0	13.7	15.2	13.2	15.2
Norway	21.6	25.3	18.6	23.6	20.1	22.6	23.3	23.9	27.4	23.8	23.7
United Kingdom	5.6	9.2	11.7	7.5	10.6	11.7	8.4	6.2	12.5	:	:

Source: Eurostat, EU-SILC survey (ilc_iw01)

Analysis of the share of the working poor in different country clusters (Figure 9) shows that the lowest rates were in the Eastern Continental cluster in 2020. The North-Eastern and Balkan cluster demonstrated high rates, moreover rates that in the countries belonging to this cluster the in-work at-risk-of-poverty rate increased significantly in 2020 as compared with 2019 (except Romania). In 2020, in comparison with 2019, the in-work at-risk-of-poverty rate decreased significantly in Denmark, Portugal and Spain, whereas increases in the rate were observed in Germany, the UK and Lithuania.

Figure 9. In-work at-risk-of-poverty rate in EU27, Norway and the UK in 2019-2020* (%)



Source: Eurostat, EU-SILC survey (ilc_iw01), * data for the UK is for 2017-2018, for Italy – 2018-2019

3. Income inequality in EU27, Norway and the UK

There are many different measures of income inequality. However, one of the most common indicators is the quintile ratio (or S80/S20 ratio) that compares the income shares of the richest and the poorest quintile of the population (Dauderstädt, 2022[28]). According to Eurostat, the income quintile share ratio or the S80/S20 ratio is calculated as the ratio of total income received by the 20% of the population with the highest income (the top quintile) to that received by the 20% of the population with the lowest income (the bottom quintile). Income quintile share ratio S80/S20 is calculated for gross market income, net market income and disposable income.

Gross income refers to the total income earned by an individual on a paycheck before taxes and other deductions. It comprises all incomes received by an individual from all sources - including wages, rental income, interest income, and dividends[29]. In 2020, in the EU income quintile share ratio S80/S20 for gross market income ranged from 4.49 in Slovakia to 18.42 in Ireland (Table 3). Over the past decade, the highest income inequality among EU countries was recorded in 2014, when the average EU-27 ratio S80/S20 for gross market income was 10.41. This ratio fell from 10.41 to 8.86 between 2014 and 2020. However, in 2020, some EU countries recorded a rather significant increase in inequality measured by gross market income compared with the previous year. For example, in 2020, as compared with 2019, the income quintile share ratio S80/S20 for gross market income increased from 8.28 to 18.14 in Germany; in Ireland - from 16.61 to 18.42; in France - from 8.11 to 10.88. Over the period at issue, the largest reduction in gross market income inequality was seen in Denmark (from 11.14 to 9.92) and Sweden (from 10.59 to 9.58).

28 Dauderstädt M. (2022) International Inequality and the COVID-19 Pandemic. Intereconomics 57 (1): 40–46. Available at: https://www.intereconomics.eu/contents/year/2022/number/1/article/international-inequality-and-the-covid-19-pandemic.html

29 https://corporatefinanceinstitute.com/resources/knowledge/accounting/gross-income/

Table 3. Income quintile share ratio S80/S20 for gross market income in EU27, Norway and the UK in 2010-2020

Time	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
EU - 27 (from 2020)	9.87	10.18	9.86	10.31	10.41	10.09	9.88	9.32	8.97	8.86	:
Belgium	10.86	12.00	12.43	11.59	11.99	11.99	11.69	11.22	10.32	10.59	10.22
Bulgaria	7.58	7.97	8.04	8.53	8.80	9.69	11.02	11.97	11.35	11.48	11.56
Czechia	5.76	5.75	5.71	5.53	5.85	5.80	5.75	5.28	5.00	5.03	5.02
Denmark	17.89	14.95	12.46	13.78	15.12	13.72	12.40	12.05	11.22	11.14	9.92
Germany	10.21	10.25	9.45	9.97	10.80	10.50	10.10	9.08	9.03	8.28	18.14
Estonia	8.13	9.17	8.57	8.75	10.54	9.55	8.40	8.28	7.67	7.59	8.35
Ireland	88.38	87.80	81.15	95.47	63.05	38.46	28.72	25.04	19.52	16.61	18.42
Greece	7.55	8.02	8.87	9.47	8.02	7.74	7.83	7.44	7.26	6.93	6.89
Spain	10.68	11.92	12.18	13.32	14.90	14.08	13.02	12.23	10.54	10.28	9.61
France	8.46	8.56	7.90	7.88	7.61	7.91	8.03	7.78	7.72	8.11	10.88
Croatia	11.40	12.45	12.43	11.56	11.08	11.35	8.78	8.79	8.58	7.82	7.22
Italy	7.79	8.53	8.31	8.68	8.76	8.87	9.84	9.16	9.31	9.49	:
Cyprus	6.23	5.95	6.54	7.18	8.05	8.55	8.57	7.67	7.54	7.03	6.37
Latvia	11.02	11.12	10.48	10.15	9.97	9.44	9.02	9.07	10.01	9.50	9.08
Lithuania	12.38	12.36	10.19	10.91	9.85	12.26	11.65	11.55	11.33	10.40	10.75
Luxembourg	8.29	7.72	8.61	9.90	8.95	7.74	7.89	7.93	9.11	8.43	9.29
Hungary	8.23	8.87	9.20	8.75	8.64	7.85	8.86	8.48	8.89	7.99	8.31
Malta	7.47	6.97	7.15	7.45	7.33	7.31	7.06	6.75	6.68	6.23	7.14
Netherlands	7.94	8.32	8.37	8.26	9.27	9.58	9.22	9.18	9.19	8.75	8.74
Austria	9.26	8.92	8.71	8.68	8.70	8.42	8.72	9.24	8.65	8.72	8.80
Poland	7.04	6.89	6.81	6.76	6.69	6.76	6.42	6.74	6.37	6.40	5.58
Portugal	9.98	9.67	10.44	11.08	12.31	11.17	11.01	10.40	8.99	8.58	8.29
Romania	10.31	10.66	10.82	11.27	12.48	14.16	13.31	11.23	11.71	12.73	12.07
Slovenia	6.96	7.31	7.21	7.58	7.59	7.28	7.08	6.69	6.46	6.25	6.20
Slovakia	5.66	5.60	5.20	5.09	5.72	4.73	4.77	5.00	4.35	4.72	4.49
Finland	9.38	10.02	9.49	9.03	9.57	9.73	10.64	10.14	10.09	9.65	9.66
Sweden	9.45	10.08	9.39	9.56	10.43	9.98	10.18	9.86	9.86	10.59	9.58
Norway	8.64	8.59	8.15	7.79	7.15	8.61	8.96	9.55	9.01	8.66	9.04
United Kingdom	17.73	17.42	20.71	19.34	17.53	19.03	16.62	13.84	13.47	:	:

Source: Eurostat, EU-SILC survey (ilc_di11a)

Net income refers to the amount a business or an individual makes after deducting costs, allowances and taxes[30]. In 2020, the lowest ratio S80/S20 for net market income was in Slovakia (4.05), the highest - in Germany (14.45) (Table 4). As shown in Table 4, national values varied widely in Europe in 2020, ranging from above 10 (for Ireland, Germany, Bulgaria, France, Luxemburg) to around five and below (for Czechia, Slovenia and Slovakia).

30 https://www.bankrate.com/taxes/what-is-net-income/

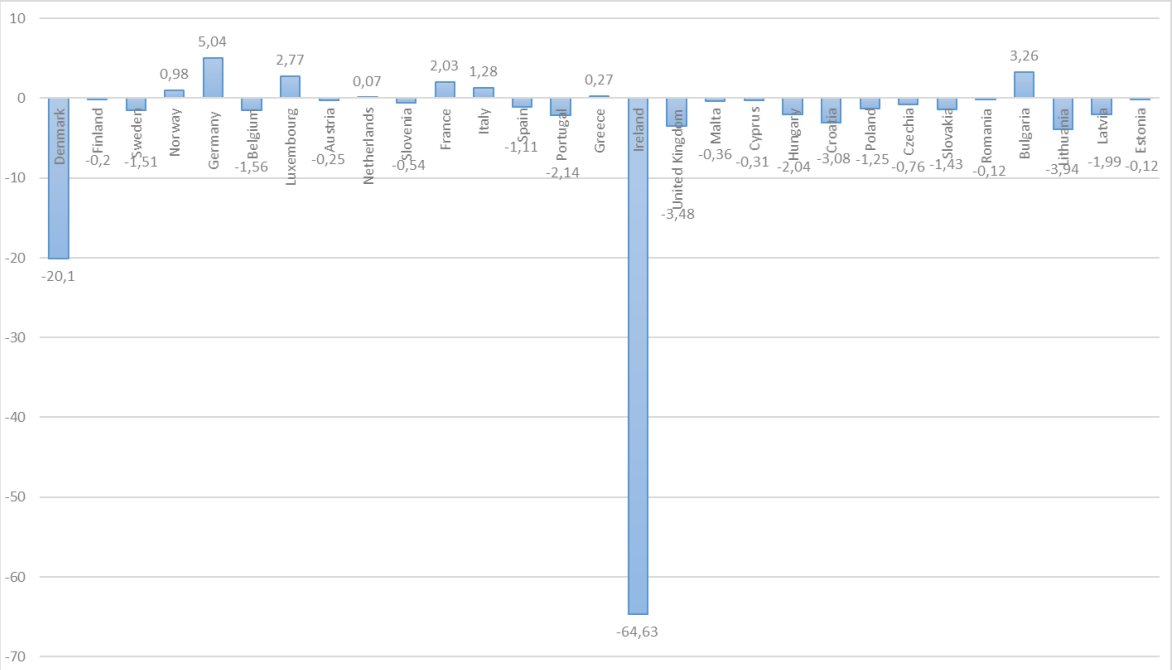
Table 4. Income quintile share ratio S80/S20 for net market income in EU27, Norway and the UK in 2010-2020

Time	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
EU - 27 (from 2020)	8.96	9.09	8.65	9.09	9.40	8.91	8.62	8.15	8.04	7.78	:
Belgium	8.98	9.76	10.49	9.32	9.58	9.87	9.64	9.22	8.24	7.66	7.42
Bulgaria	7.21	8.01	7.60	8.38	8.55	9.44	10.16	11.47	10.70	10.74	10.47
Czechia	4.96	4.86	4.79	4.67	4.96	4.90	4.83	4.47	4.20	4.22	4.20
Denmark	28.52	17.20	13.59	14.67	15.17	12.99	10.90	10.69	9.65	9.51	8.42
Germany	9.41	9.60	8.46	9.25	11.21	9.87	9.37	8.33	9.21	9.00	14.45
Estonia	7.20	8.03	7.69	7.74	9.34	8.42	7.52	7.32	6.71	7.05	7.08
Ireland	78.00	69.30	64.10	75.84	46.26	28.36	20.58	18.02	13.74	11.93	13.37
Greece	6.44	7.09	7.76	8.42	8.08	7.98	8.29	7.61	7.21	6.94	6.71
Spain	9.23	10.35	10.64	11.53	13.23	12.27	11.31	10.35	8.88	8.56	8.12
France	8.02	7.93	7.37	7.36	7.19	7.41	7.40	7.68	7.59	7.35	10.05
Croatia	9.24	10.43	10.74	9.76	9.54	9.42	7.54	7.28	7.31	6.58	6.16
Italy	6.26	6.85	6.73	7.12	7.10	7.22	7.90	7.21	7.50	7.54	:
Cyprus	5.80	5.48	5.94	6.40	7.13	7.27	7.27	6.48	6.44	6.03	5.49
Latvia	9.63	9.47	8.97	8.57	8.53	8.18	7.66	7.79	8.54	8.03	7.64
Lithuania	12.83	11.67	9.20	10.44	9.17	11.07	10.80	10.54	10.12	9.41	8.89
Luxembourg	7.45	7.17	7.89	9.43	8.53	7.25	7.99	7.26	9.38	9.00	10.22
Hungary	7.29	9.17	8.36	8.40	8.22	7.46	7.38	7.19	6.97	5.00	5.25
Malta	6.36	5.84	5.97	6.36	6.08	6.15	6.00	5.69	5.64	5.32	6.00
Netherlands	6.44	7.02	6.82	6.42	6.88	6.77	6.82	6.72	6.76	6.43	6.51
Austria	7.32	7.14	6.93	6.90	6.98	6.89	7.01	7.31	6.85	7.10	7.07
Poland	6.71	6.65	6.48	6.46	6.46	6.51	6.23	6.57	6.25	6.12	5.46
Portugal	8.48	8.22	8.46	9.04	9.44	8.63	8.29	7.96	6.86	6.60	6.34
Romania	8.81	9.30	9.16	9.65	10.44	11.82	10.74	9.24	10.07	9.11	8.69
Slovenia	5.40	5.67	5.62	5.85	6.05	5.74	5.61	5.26	5.11	5.03	4.86
Slovakia	5.48	5.41	5.14	5.05	5.38	4.78	4.76	4.44	3.89	4.46	4.05
Finland	7.91	8.29	7.79	7.31	7.82	7.88	8.56	8.13	8.06	7.71	7.71
Sweden	11.44	12.02	10.45	10.45	11.75	10.91	10.87	10.47	10.48	10.92	9.93
Norway	8.17	9.93	7.61	6.68	6.54	7.91	8.81	9.68	10.99	8.52	9.15
United Kingdom	16.11	15.05	17.68	15.46	15.46	15.35	14.24	13.74	12.63	:	:

Source Eurostat, EU-SILC survey (ilc_di11b)

Analysis of the change in the income quintile share ratio S80/S20 for net market income in the EU-27, Norway and the UK from 2010 to 2020, shows that over the last decade the gap between the highest and the lowest income groups reduced most of all in Ireland (by -64%) and Denmark (-20%); this gap has also narrowed in Lithuania (by 3.9%), Croatia (by 3%), Portugal (2.1%) and other countries. In contrast, the gap increased slightly in Germany (by 5%), Bulgaria (3.2%), Luxembourg (2.7%), France (2%), and other countries (Figure 10).

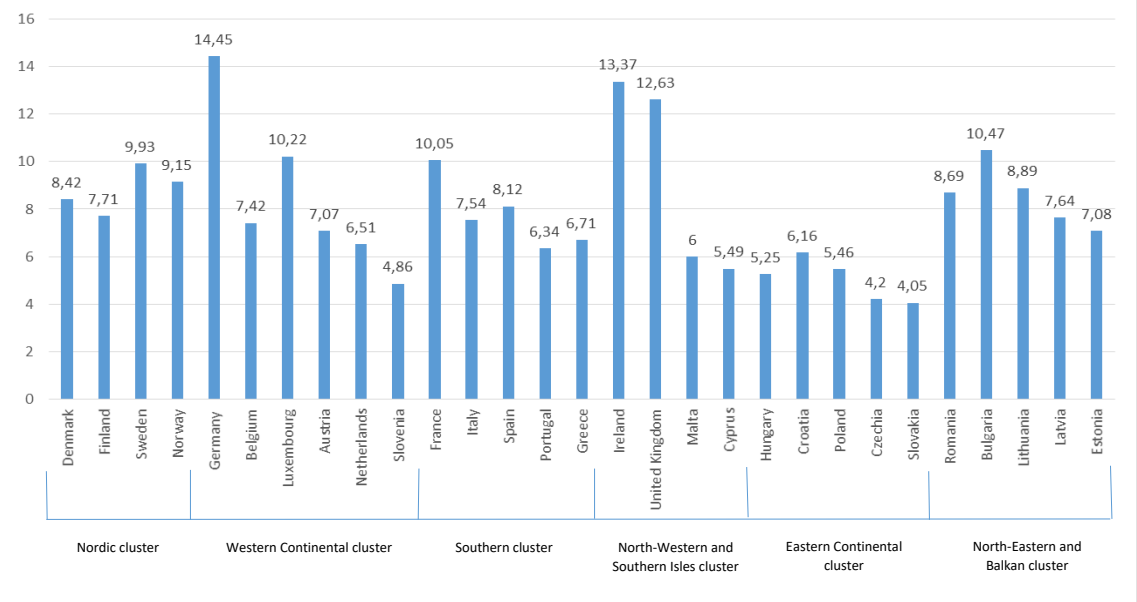
Figure 10. Change in income quintile share ratio S80/S20 for net market income in EU27, Norway and the UK from 2010 to 2020



Source: Eurostat, EU-SILC survey (ilc_di11b), * data for the UK is for 2018, for Italy - 2019

When analysing the quintile share ratio S80/S20 for net market income in different industrial relations regimes and country clusters, we can see that the lowest income inequality is in the Eastern Continental cluster, which is dominated by the industrial relations regime of transitioned post-socialist economies. According to 2020 data, the indicator ranges from 4.05 to 6.16 in this cluster (Figure 11). As for the North-Western and Southern Isles cluster, which is dominated by the industrial relations regime of liberal pluralism, Ireland and the UK are outstanding for particularly high inequality, while Malta and Cyprus have approximately twice as low income quintile share ratio S80/S20.

Figure 11. Income quintile share ratio S80/S20 for net market income in different country clusters in EU27, Norway and the UK in 2020*



Source: Eurostat, EU-SILC survey (ilc_di11b), * data for the UK is for 2018, for Italy – 2019

Further we will look at income quintile share ratio S80/S20 for disposable income or income inequality after redistribution. According to Eurostat[31], disposable income refers to personal income received from work plus any other income received at a household level. Disposable household income includes: a) all income from work (employee wages and self-employment earnings); b) private income from investment and property; c) transfers between households; d) all social transfers received in cash including old-age pensions. In 2020, ratio S80/S20 for disposable income ranged from 3.03 in Slovakia to 8.01 in Bulgaria (Table 5). Except Bulgaria high S80/S20 ratio for disposable income in 2020 was recorded in Romania (6.62), Germany (6.47), Latvia (6.27), Lithuania (6.14); low - in Slovenia (3.32), Czechia (3.34), Belgium (3.65).

31 https://ec.europa.eu/eurostat/cache/metadata/en/ilc_esms.htm

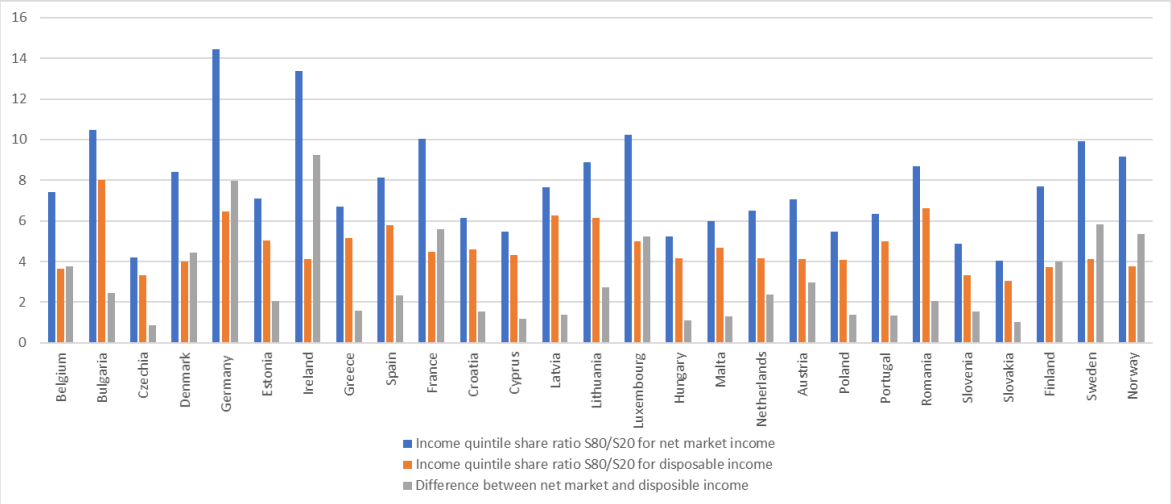
Table 5. Income quintile share ratio S80/S20 for disposable income in EU27, Norway and the UK in 2010-2020

Time	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
EU - 27 (from 2020)	4.89	4.99	4.98	5.05	5.22	5.22	5.16	5.03	5.05	4.99	5.24
Belgium	3.92	3.86	3.95	3.81	3.81	3.83	3.85	3.84	3.79	3.61	3.65
Bulgaria	5.86	6.46	6.12	6.59	6.81	7.11	7.69	8.23	7.66	8.10	8.01
Czechia	3.47	3.54	3.49	3.40	3.50	3.51	3.50	3.40	3.32	3.34	3.34
Denmark	4.41	3.98	3.94	4.01	4.12	4.08	4.06	4.08	4.11	4.09	4.00
Germany	4.49	4.46	4.30	4.60	5.12	4.80	4.62	4.49	5.07	4.89	6.47
Estonia	5.01	5.35	5.41	5.54	6.48	6.21	5.56	5.42	5.07	5.08	5.03
Ireland	4.70	4.63	4.82	4.73	4.90	4.50	4.45	4.63	4.23	4.03	4.13
Greece	5.61	5.96	6.63	6.60	6.46	6.51	6.55	6.11	5.51	5.11	5.15
Spain	6.16	6.28	6.47	6.29	6.81	6.87	6.60	6.59	6.03	5.94	5.77
France	4.43	4.61	4.54	4.48	4.27	4.29	4.32	4.31	4.23	4.27	4.48
Croatia	5.54	5.58	5.36	5.34	5.12	5.16	5.00	5.03	5.00	4.76	4.61
Italy	5.38	5.73	5.64	5.85	5.78	5.84	6.27	5.92	6.09	6.01	:
Cyprus	4.54	4.34	4.67	4.91	5.37	5.20	4.88	4.56	4.29	4.58	4.31
Latvia	6.84	6.50	6.47	6.32	6.48	6.51	6.20	6.30	6.78	6.54	6.27
Lithuania	7.35	5.84	5.32	6.05	6.10	7.46	7.06	7.28	7.09	6.44	6.14
Luxembourg	4.10	3.97	4.13	4.59	4.42	4.26	4.62	4.56	5.18	5.34	4.99
Hungary	3.41	3.94	4.00	4.29	4.33	4.30	4.26	4.27	4.35	4.23	4.16
Malta	4.33	4.01	3.94	4.14	4.05	4.15	4.22	4.21	4.28	4.18	4.69
Netherlands	3.65	3.75	3.61	3.58	3.83	3.82	3.93	3.99	4.05	3.94	4.15
Austria	4.34	4.12	4.20	4.11	4.13	4.05	4.09	4.29	4.04	4.17	4.11
Poland	4.98	4.95	4.92	4.88	4.91	4.92	4.76	4.56	4.25	4.37	4.07
Portugal	5.56	5.68	5.82	6.01	6.23	6.01	5.88	5.75	5.22	5.16	4.99
Romania	6.11	6.24	6.60	6.83	7.24	8.32	7.20	6.45	7.21	7.08	6.62
Slovenia	3.42	3.46	3.44	3.60	3.70	3.60	3.56	3.42	3.38	3.39	3.32
Slovakia	3.80	3.81	3.73	3.58	3.93	3.54	3.63	3.49	3.03	3.34	3.03
Finland	3.61	3.69	3.69	3.59	3.62	3.56	3.58	3.54	3.65	3.69	3.72
Sweden	3.85	3.95	3.98	3.97	4.15	4.06	4.25	4.27	4.13	4.33	4.12
Norway	3.42	3.28	3.21	3.25	3.41	3.50	3.69	3.90	3.71	3.81	3.78
United Kingdom	5.35	5.34	4.98	4.63	5.06	5.23	5.12	5.40	5.63	:	:

Source Eurostat, EU-SILC survey (ilc_di11)

The difference between the value for net market income and that for disposable income indicates the effectiveness of redistribution (Dauderstädt, 2022). As we can see from the Figure 12, in 2020, the highest effectiveness of redistribution was in Ireland (9.24), Germany (7.98) and the Scandinavian countries, whereas the redistribution was weaker in Central Eastern European countries. On the other hand, in some Central Eastern European countries net market income inequality is low (e.g. in Czechia, Slovakia, Slovenia) thus no need for major distribution.

Figure 12. The difference between income quintile share ratio S80/S20 for net market income and for disposable income in EU27 and Norway in 2020



Source Eurostat, EU-SILC survey (ilc_di11b) and (ilc_di11), data for the UK is not available

Another commonly used indicator of income inequality by researchers is the Gini coefficient. The Gini coefficient most often is used complementarily with the S80/S20 ratio. The Gini index is an indicator 'that attempts to summarise, in a single number, the degree of dispersion across the entire distribution' (Hasell et al, 2019[32]). In contrast to the share ratio S80/S20, the Gini coefficient is more sensitive to transfers in the middle of the distribution and is less affected by the extreme values of income distribution (OECD, 2013[33]; Schmid & Stein, 2013[34]).

According to the definition of the Eurostat[35], the Gini coefficient is the 'relationship of cumulative shares of the population arranged according to the level of equivalised disposable income, to the cumulative share of the equivalised total disposable income received by them'. Values of the Gini coefficient can range from 0 to 1 (or from 0 to 100%). If the value was 0, income would be distributed perfectly equally (each person receives the same income); if the value was 1, income would be distributed perfectly unequally (all income goes to one person). The closer the Gini coefficient is to 1 (or 100%), the more unequal the income distribution is in the country (OECD, 2016[36]).

As one may see in Table 6, in 2020, the Gini coefficient ranged from 20.9% in Slovakia to 40.0% in Bulgaria. In 2020, the lowest income inequality measured by Gini coefficient was recorded in Slovakia, Slovenia and Czechia as well as in the Scandinavian countries (around 27% and lower) whereas the

32 Hasell J., Morelli S., Roser M. (2019) Recent trends in income inequality. Eds. Salvatore Vaccarella, Joannie Lortet-Tieulent, Rodolfo Saracci, David I. Conway, Kurt Straif, and Christopher P. Wild. in "Reducing social inequalities in cancer: evidence and priorities for research", IARC Scientific Publications, No. 168.

33 OECD (2013), OECD Guidelines for Micro Statistics on Household Wealth, OECD Publishing. http://dx.doi.org/10.1787/9789264194878-en

34 Schmid K.D, Stein U. (2013) Explaining Rising Income Inequality in Germany, 1991-2010. Macroeconomic Policy Institute. https://www.boeckler.de/pdf/p_imk_study_32_2013.pdf

35 https://ec.europa.eu/eurostat/databrowser/view/tessi190/default/table?lang=en

36 OECD (2016), 'Income inequality', in Society at a Glance 2016: OECD Social Indicators, OECD Publishing, Paris. DOI: https://doi.org/10.1787/soc_glance-2016-16-en

highest income inequality was in the countries, which joined EU in 2004 and later (Bulgaria, Lithuania, Latvia, Romania) and Germany (around 33% and higher). During the last decade average value of Gini coefficient in EU-27 actually remained unchanged, though in some countries income inequality increased significantly (e.g. in Bulgaria - by +6.8 percentage points; in Germany - +5.1 percentage points; in Hungary - +3.9 percentage points), whilst in others - significantly decreased (e.g. in Slovakia - by -5 percentage points; in Poland – -3.9 percentage points; in Croatia – -3.3 percentage points).

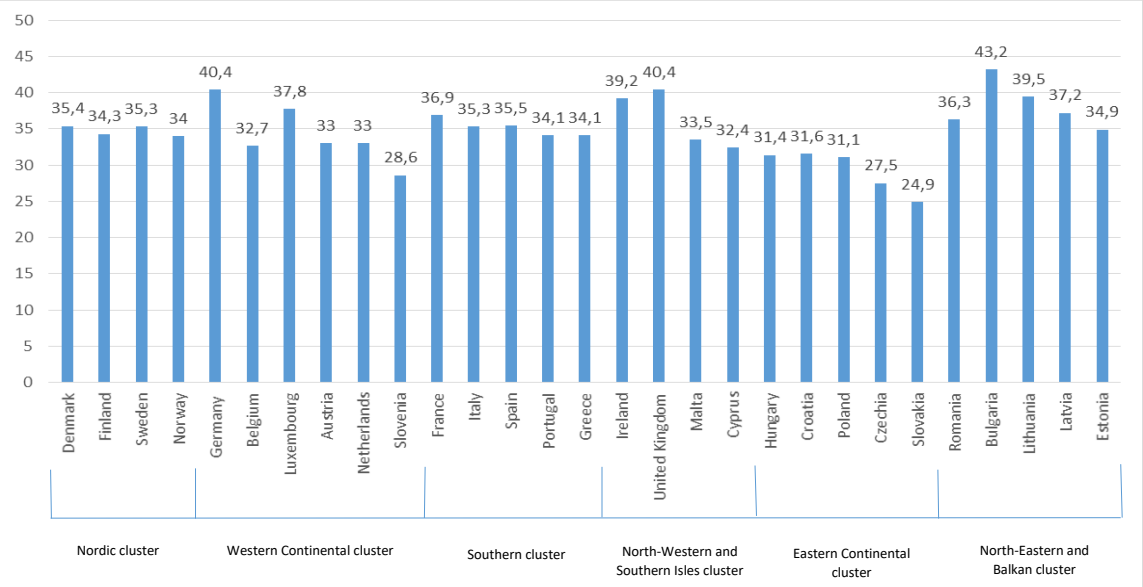
Table 6. Gini coefficient of equivalised disposable income in EU27, Norway and the UK in 2010-2020

Time	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
EU - 27 (from 2020)	30.2	30.5	30.4	30.6	30.9	30.8	30.6	30.3	30.4	30.2	:
Belgium	26.6	26.3	26.5	25.9	25.9	26.2	26.3	26.1	25.7	25.1	25.4
Bulgaria	33.2	35.0	33.6	35.4	35.4	37.0	37.7	40.2	39.6	40.8	40.0
Czechia	24.9	25.2	24.9	24.6	25.1	25.0	25.1	24.5	24.0	24.0	24.2
Denmark	26.9	26.6	26.5	26.8	27.7	27.4	27.7	27.6	27.8	27.5	27.3
Germany	29.3	29.0	28.3	29.7	30.7	30.1	29.5	29.1	31.1	29.7	34.4
Estonia	31.3	31.9	32.5	32.9	35.6	34.8	32.7	31.6	30.6	30.5	30.5
Ireland	30.7	29.8	30.4	30.7	31.0	29.7	29.6	30.6	28.9	28.3	28.7
Greece	32.9	33.5	34.3	34.4	34.5	34.2	34.3	33.4	32.3	31.0	31.1
Spain	33.5	34.0	34.2	33.7	34.7	34.6	34.5	34.1	33.2	33.0	32.1
France	29.8	30.8	30.5	30.1	29.2	29.2	29.3	28.8	28.5	29.2	29.3
Croatia	31.6	31.2	30.9	30.9	30.2	30.4	29.8	29.9	29.7	29.2	28.3
Italy	31.7	32.5	32.4	32.8	32.4	32.4	33.1	32.7	33.4	32.8	:
Cyprus	30.1	29.2	31.0	32.4	34.8	33.6	32.1	30.8	29.1	31.1	29.3
Latvia	35.9	35.1	35.7	35.2	35.5	35.4	34.5	34.5	35.6	35.2	34.5
Lithuania	37.0	33.0	32.0	34.6	35.0	37.9	37.0	37.6	36.9	35.4	35.1
Luxembourg	27.9	27.2	28.0	30.4	28.7	28.5	29.6	29.2	31.3	32.3	31.2
Hungary	24.1	26.9	27.2	28.3	28.6	28.2	28.2	28.1	28.7	28.0	28.0
Malta	28.6	27.2	27.1	28.0	27.7	28.1	28.6	28.2	28.7	28.0	30.3
Netherlands	25.5	25.8	25.4	25.1	26.2	26.7	26.9	27.1	27.4	26.8	28.2
Austria	28.3	27.4	27.6	27.0	27.6	27.2	27.2	27.9	26.8	27.5	27.0
Poland	31.1	31.1	30.9	30.7	30.8	30.6	29.8	29.2	27.8	28.5	27.2
Portugal	33.7	34.2	34.5	34.2	34.5	34.0	33.9	33.5	32.1	31.9	31.2
Romania	33.5	33.5	34.0	34.6	35.0	37.4	34.7	33.1	35.1	34.8	33.8
Slovenia	23.8	23.8	23.7	24.4	25.0	24.5	24.4	23.7	23.4	23.9	23.5
Slovakia	25.9	25.7	25.3	24.2	26.1	23.7	24.3	23.2	20.9	22.8	20.9
Finland	25.4	25.8	25.9	25.4	25.6	25.2	25.4	25.3	25.9	26.2	26.5
Sweden	25.5	26.0	26.0	26.0	26.9	26.7	27.6	28.0	27.0	27.6	26.9
Norway	23.6	22.9	22.5	22.7	23.5	23.9	25.0	26.1	24.8	25.4	25.3
United Kingdom	32.9	33.0	31.3	30.2	31.6	32.4	31.5	33.1	33.5	:	:

Source: Eurostat, EU-SILC survey (ilc_di12)

While analysing the Gini coefficient in different country clusters, one may see, that the lowest values of this coefficient are recorded in the Eastern Continental cluster, the highest - in the North-Eastern and Balkan cluster (Figure 13).

Figure 13. Gini coefficient of equivalised disposable income in different country clusters in EU27, Norway and the UK in 2020*



Source: Eurostat, EU-SILC survey (ilc_di12), data for the UK is for 2018, for Italy – 2019

It should be noted that Table 6 and Figure 13 provide data on household disposable incomes and their distribution after social transfers. Therefore, income inequality before redistribution is not clear in these countries. It is possible that low income inequality in some countries is due to high redistributions within the countries rather than to an equal distribution of income from work. To clarify this situation, the Gini coefficient of equivalised disposable income before social transfers should be analysed. Table 7 shows the Gini coefficient of equivalised disposable income before social transfers in European countries in 2010-2020. It should be noted that for the purpose of calculating disposable income, pensions are excluded from social transfers as they are considered lifetime earnings.

As one may see from the Table 7, Gini coefficient before social transfers is even higher. In 2020, the values of the Gini coefficient before social transfers ranged from 24.9% in Slovakia to 43.2% in Bulgaria. Except Bulgaria, in 2020 especially high income inequality before social transfers was registered in Germany (40.4%), Lithuania (39.5%), Ireland (39.2%); low (except Slovakia) - in Czechia (27.5%), Slovenia (28.6%).

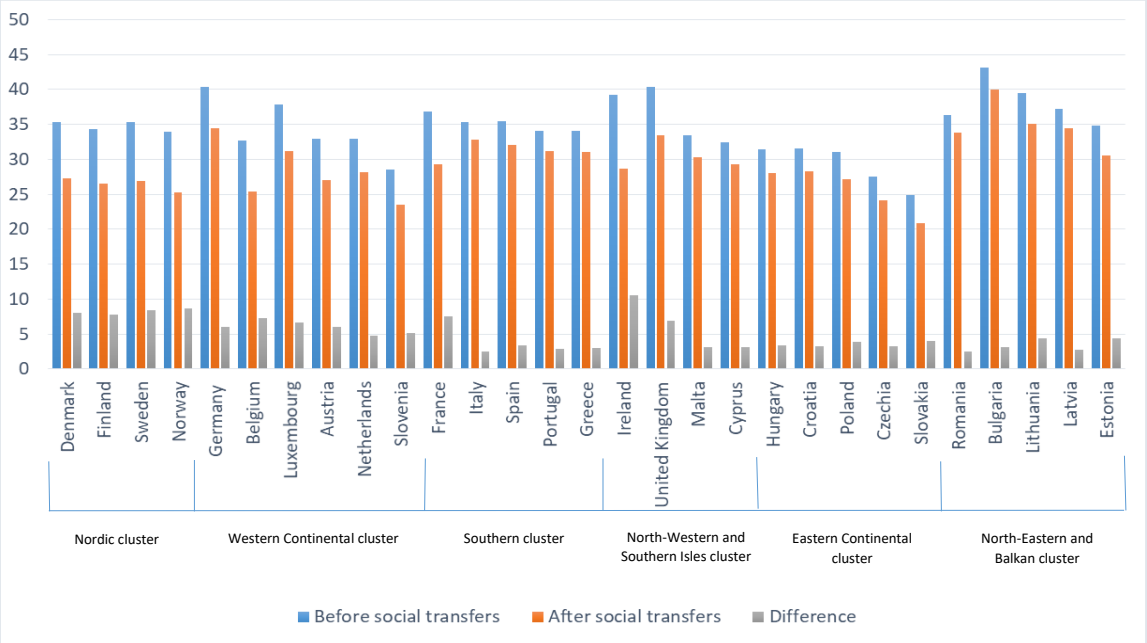
Table 7. Gini coefficient of equivalised disposable income before social transfers in EU27, Norway and the UK in 2010-2020

Time	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
EU - 27 (from 2020)	35.5	35.9	35.4	35.8	36.1	35.9	35.7	35.2	35.2	34.8	:
Belgium	34.8	34.8	35.1	34.0	34.5	34.6	34.4	34.0	32.7	32.7	32.7
Bulgaria	35.9	37.5	35.9	38.1	38.0	40.1	40.3	43.4	43.3	44.1	43.2
Czechia	29.8	29.6	29.1	28.8	29.6	29.4	29.2	28.2	27.3	27.4	27.5
Denmark	38.0	37.7	37.1	37.6	38.2	37.2	36.9	36.7	36.0	35.7	35.4
Germany	35.9	35.8	34.5	36.2	37.1	36.3	35.9	35.0	36.6	35.2	40.4
Estonia	35.3	35.9	35.9	36.3	39.2	38.1	36.2	35.2	34.1	34.7	34.9
Ireland	46.8	46.4	46.1	46.5	45.5	42.7	41.7	41.6	39.3	38.9	39.2
Greece	34.9	35.6	36.6	37.0	37.0	36.5	36.8	36.0	35.2	34.3	34.1
Spain	37.7	38.9	38.7	38.8	39.9	39.4	39.1	38.1	37.0	36.6	35.5
France	36.3	36.9	36.0	35.8	35.1	35.3	35.3	35.2	34.9	35.2	36.9
Croatia	37.0	37.6	37.5	37.3	36.5	36.8	34.3	34.1	33.8	33.0	31.6
Italy	33.7	34.6	34.6	35.2	34.8	34.8	35.6	34.9	35.7	35.3	:
Cyprus	33.5	32.6	34.1	35.5	37.5	37.2	36.5	34.7	34.0	34.2	32.4
Latvia	39.0	38.5	38.8	38.3	38.5	37.9	37.0	37.0	38.2	38.0	37.2
Lithuania	42.4	39.4	37.7	40.2	39.4	42.1	41.0	41.3	40.6	39.7	39.5
Luxembourg	34.9	34.0	35.3	38.1	35.5	34.7	35.6	34.7	37.5	37.5	37.8
Hungary	32.9	35.8	34.9	35.4	35.4	34.3	34.2	33.9	34.1	30.3	31.4
Malta	33.0	31.6	31.8	32.8	32.5	32.6	32.8	32.0	32.1	31.2	33.5
Netherlands	31.8	32.4	32.0	31.4	32.3	32.8	32.7	32.6	32.7	32.0	33.0
Austria	34.4	34.0	33.6	33.3	33.9	33.6	33.6	33.8	32.9	33.8	33.0
Poland	34.7	34.5	34.2	33.9	34.0	33.8	32.9	33.6	32.7	32.8	31.1
Portugal	38.3	38.5	38.7	38.4	38.7	37.8	37.5	36.9	35.2	34.7	34.1
Romania	37.4	37.7	37.2	37.9	38.2	40.4	38.1	36.5	38.0	37.3	36.3
Slovenia	29.8	30.0	30.1	30.6	31.0	30.3	30.1	29.3	28.8	29.1	28.6
Slovakia	30.0	29.9	29.1	28.3	30.0	27.3	27.7	26.2	24.3	26.4	24.9
Finland	33.9	34.5	34.2	33.6	34.1	33.9	34.6	34.3	34.4	34.2	34.3
Sweden	35.1	35.9	34.9	35.0	36.3	35.8	36.4	36.7	35.7	36.0	35.3
Norway	33.0	34.4	31.8	31.1	31.2	32.7	34.0	35.0	34.5	33.7	34.0
United Kingdom	42.0	42.0	40.7	39.8	40.2	40.9	39.7	40.9	40.4	:	:

Source Eurostat, EU-SILC survey (ilc_di12c)

When comparing the Gini coefficient of equivalised disposable income before and after social transfers, we can see that social transfers reduce income inequality the most in Ireland (by 10.5 percentage points) and in the countries belonging to the Nordic cluster - Norway (8.7), Sweden (8.4), Denmark (8.1) and Finland (7.8) (Figure 14). The lowest redistributive effects can be seen in Romania (2.5 percentage points), Latvia (2.7) and Portugal (2.9). It can be noted that redistribution is considerably lower in the Eastern Continental and Southern clusters (with the exception of France) and in the North-Eastern and Balkan cluster.

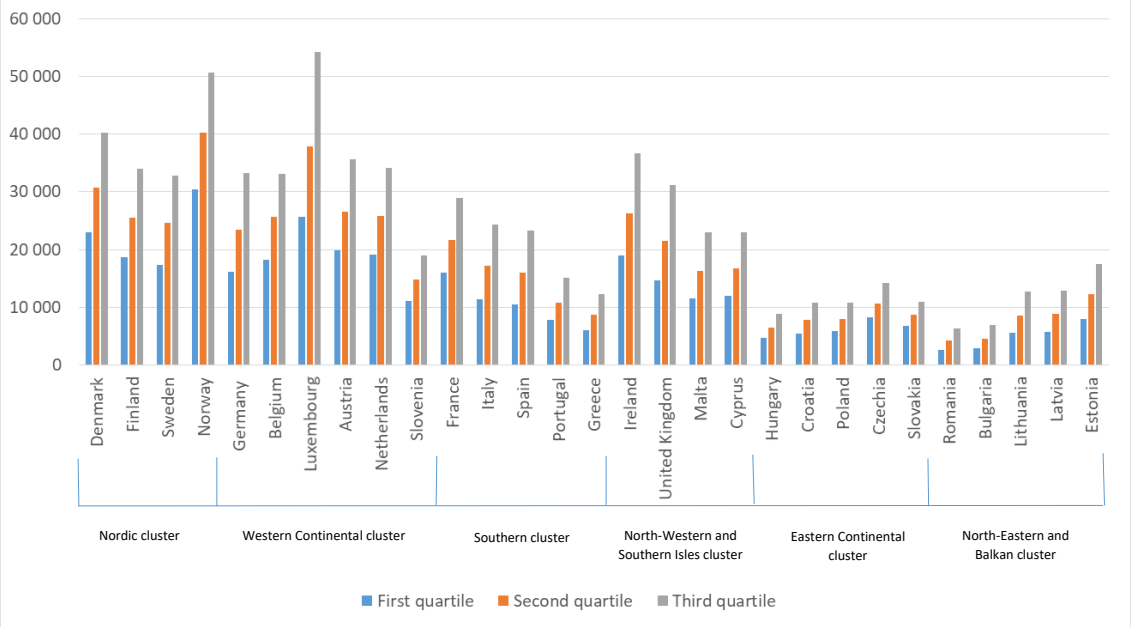
Figure 14. Gini coefficient of equivalised disposable income before and after social transfers in different country clusters in EU27 and Norway in 2020*



Source: Eurostat, EU-SILC survey (ilc_di12) and (ilc_di12c) *Data for the UK is for 2018, for Italy – 2019. Pensions are excluded from social transfers

According to OECD (2013), another approach used in income analysis can be 'based on a ranking of the units of analysis from the lowest to the highest, then dividing them into equally sized groups' (OECD, 2013, p. 167), i.e. deciles, quantiles or quartiles. In the Figure 15, the population's income is divided into four equally sized groups - quartiles.

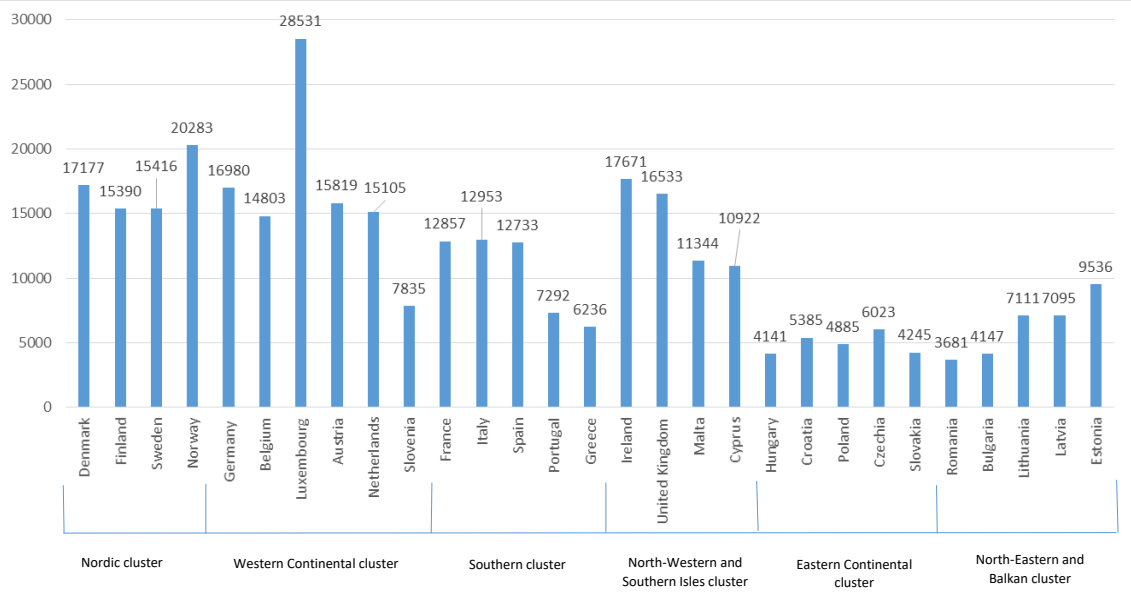
Figure 15. Distribution of income by quartiles in different country clusters in EU27, the UK and Norway in 2020*



Source: Eurostat, EU-SILC survey (ilc_di01), data for the UK is for 2018, for Italy – 2019

As we can see from the Figure 16, in 2020, the largest difference between the third and the first income quartiles was in Luxembourg, the smallest in Romania. Here again, according to the most equal income distribution by the difference between the third and the first income quartiles are Eastern Continental cluster.

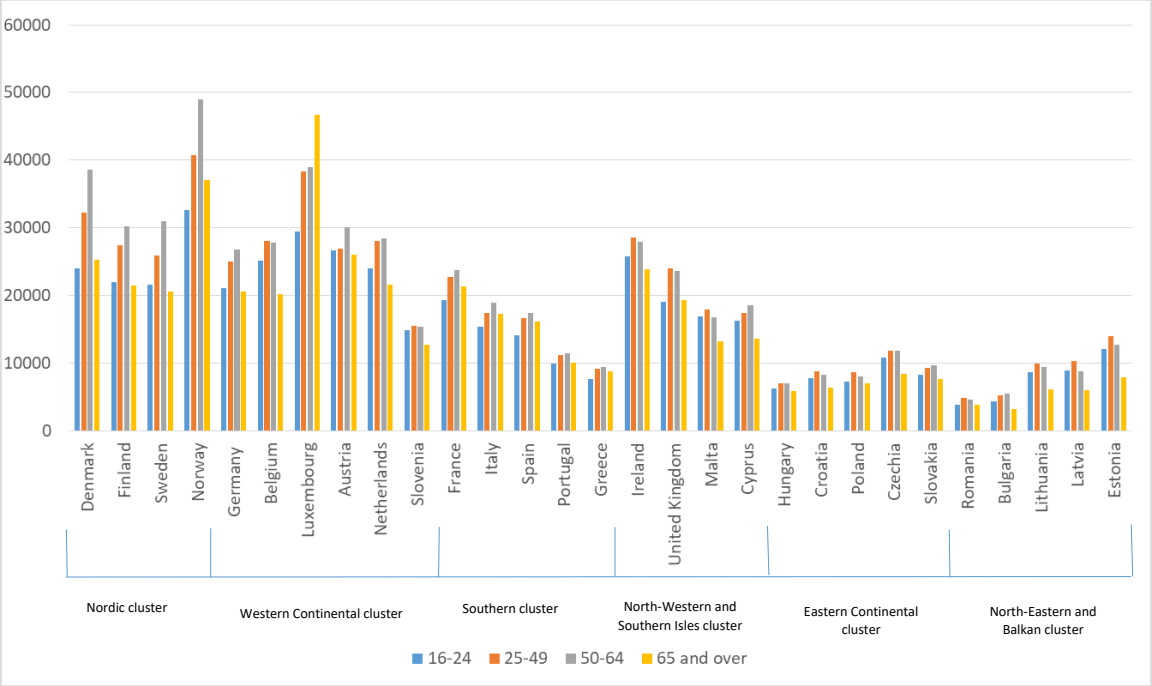
Figure 16. The difference between the third and the first income quartiles in different country clusters in EU27, the UK and Norway in 2020*



Source: Eurostat, EU-SILC survey (ilc_di01), data for the UK is for 2018, for Italy - 2019

Analysis of median income by age shows considerable heterogeneity between countries. The general trend is that the 16-24 age group has the lowest median income in all countries analysed. Luxembourg stands out among all countries as having the highest median income among those aged 65 and over, while other countries show a significant drop in income of the oldest age group over 65. This trend is particularly pronounced in the North-Eastern and Balkan cluster, as well as in the Nordic cluster. Similar median incomes are recorded across all age groups in Greece, Austria, Slovenia, and Poland. The Nordic cluster represents quite high income inequalities by age groups, with the highest median income seen among people aged 50-64.

Figure 17. Median income by age in different country clusters in EU27, the UK and Norway in 2020*



Source: Eurostat, EU-SILC and ECHP surveys (ilc_di03), data for the UK is for 2018, for Italy - 2019

4. Inequality on the basis of socio-economic characteristics

When analysing inequality trends, it is important to not only measure differences between the bottom and the top of the income/wage distribution but also the differences on the basis of socio-economic characteristics of population (e.g. between women and men). One of the indicators showing the wage gap between women and men is the unadjusted gender pay gap (GPG). The unadjusted gender pay gap is defined as the difference between the average gross hourly earnings of men and women expressed as a percentage of the average gross hourly earnings of men.

As one may see in Table 8, in 2020, women's gross hourly earnings were on average by 13% below those of men in the EU. GPG on average in EU countries decreased from 15.8% to 13% over the last decade; in 2020 as compared to 2019 decreased from 13.7% to 13%. In 2020, the GPG varied among the EU Member States, with the highest differences observed in Latvia (22.3%), Estonia (21.1%), Austria (18.9%) and Germany (18.3%) and the smallest in Luxembourg (0.7%), Romania (2.4%), Slovenia (3.1%), and Italy (4.2%) (Eurostat, 2022[37]).

37 Eurostat (2022) Gender pay gap in the EU down to 13.0%. https://ec.europa.eu/eurostat/en/web/products-eurostat-news/-/edn-20220307-2

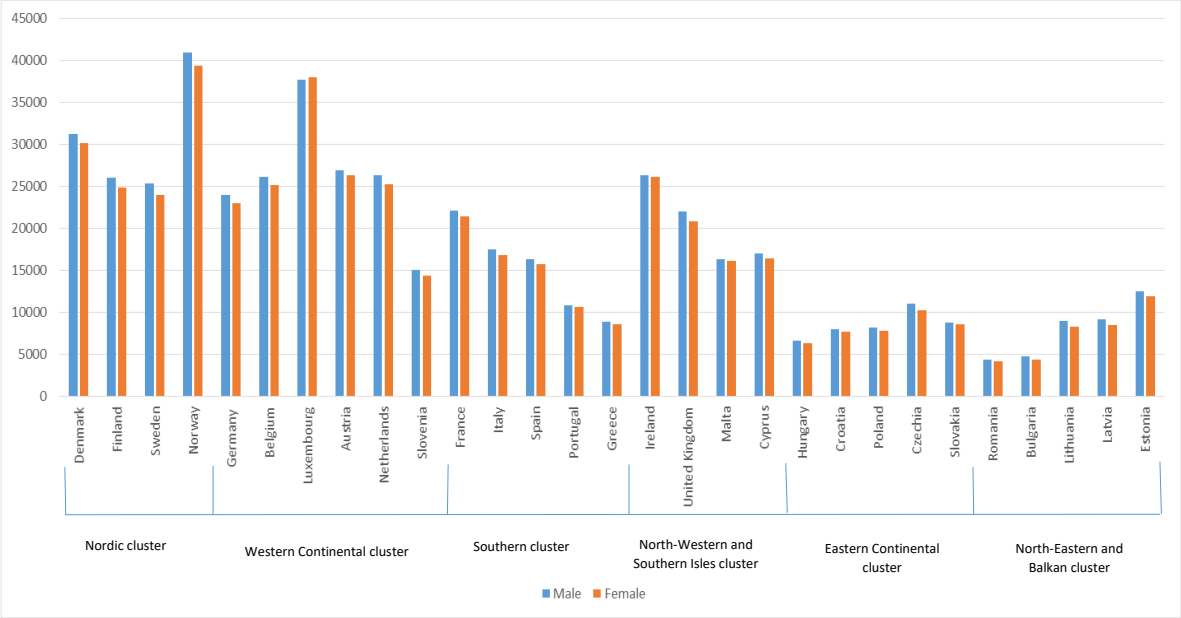
Table 8. Gender pay gap in EU27, the UK and Norway in 2010-2020

Time	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
EU – 27 (from 2020)	15.8	16.2	16.4	16.0	15.7	15.5	15.1	14.6	14.4	13.7	13.0
Belgium	10.2	9.4	8.3	7.5	6.6	6.4	6.0	5.8	5.8	5.8	5.3
Bulgaria	13.0	13.2	15.1	14.1	14.2	15.5	14.6	14.3	13.9	14.1	12.7
Czechia	21.6	22.6	22.5	22.3	22.5	22.5	21.5	21.1	20.1	19.2	16.4
Denmark	17.1	16.4	16.8	16.5	16.0	15.1	15.1	14.8	14.6	14.0	13.9
Germany	22.3	22.4	22.7	22.1	22.3	21.8	21.1	20.4	20.1	19.2	18.3
Estonia	27.7	27.3	29.9	29.8	28.1	26.7	24.8	24.9	21.8	21.7	21.1
Ireland	13.9	12.7	12.2	12.9	13.9	13.9	14.2	14.4	11.3	:	:
Greece	15.0	:	:	:	12.5	:	:	:	10.4	:	:
Spain	16.2	17.6	18.7	17.8	14.9	14.1	14.8	13.5	11.9	9.4	9.4
France	15.6	15.7	15.6	15.5	15.5	15.6	15.9	16.3	16.7	16.2	15.8
Croatia	5.7	:	:	7.7	8.7	:	11.6	12.3	11.4	11.5	11.2
Italy	5.3	5.7	6.5	7.0	6.1	5.5	5.3	5	5.5	4.7	4.2
Cyprus	16.8	16.1	15.6	14.9	14.2	13.2	12.3	11.2	10.4	10.1	9.0
Latvia	15.5	14.1	14.9	16.0	17.3	18.4	19.7	19.8	19.6	21.2	22.3
Lithuania	11.9	11.5	11.9	12.2	13.3	14.2	14.4	15.2	14.0	13.3	13.0
Luxembourg	8.7	7.9	7.0	6.2	5.4	4.7	3.9	2.6	1.4	1.3	0.7
Hungary	17.6	18.0	20.1	18.4	15.1	14.0	14.0	15.9	14.2	18.2	17.2
Malta	7.2	7.7	9.5	9.7	10.6	10.7	11.6	13.2	13.0	11.6	10.0
Netherlands	17.8	18.8	18.0	17.2	17.0	16.1	15.6	15.1	14.7	14.6	14.2
Austria	24.0	23.5	22.9	22.3	22.2	21.8	20.8	20.7	20.4	19.9	18.9
Poland	4.5	5.5	6.4	7.1	7.7	7.3	7.1	7.0	8.5	6.5	4.5
Portugal	12.8	12.9	15.0	13.3	14.9	16.0	13.9	10.8	8.9	10.9	11.4
Romania	8.8	9.6	6.9	4.9	4.5	5.6	4.8	2.9	2.2	3.3	2.4
Slovenia	0.9	3.3	4.5	6.3	7.0	8.2	8.1	8.4	9.3	7.9	3.1
Slovakia	19.6	20.1	20.8	18.8	19.7	19.7	19.2	20.1	19.8	18.4	15.8
Finland	20.3	19.1	19.2	18.8	18.4	17.5	17.5	17.1	16.9	16.6	16.7
Sweden	15.4	15.6	15.5	14.6	13.8	14.0	13.3	12.5	12.1	11.8	11.2
Norway	16.1	15.7	14.7	15.5	14.5	16.0	14.5	13.7	13.2	13.2	13.4
United Kingdom	23.3	21.8	22.6	21.0	20.9	21.0	20.7	20.8	19.8	:	:

Source: Eurostat (tesem180) * data for the UK is for 2018, for Italy - 2019

As shown in Figure 17, female median income is slightly higher only in Luxembourg, while other countries have higher median income among men. A larger difference between male and female median income is observed in the Nordic cluster; a much more equal distribution of income between men and women can be seen in the Southern cluster and the Eastern Continental cluster.

Figure 18. Median income by sex in different country clusters in EU27, the UK and Norway in 2020* (EUR)



Source: Eurostat (ilc_di03), * data for the UK is for 2018, for Italy - 2019

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