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Net disposable household income per inhabitant is less dispersed than GDP per inhabitant across NUTS 2 regions in all 22 multi-region EU member states, in 2014 and 2023

A descriptive study of 239 regions using Eurostat regional accounts, with detailed results for Czechia

Working paper 1.0.0.

Abstract

Are differences between regions within EU member states smaller when regions are compared on household disposable income rather than on GDP? We use frozen Eurostat regional accounts for the 244 NUTS 2 regions of the 27 member states, in purchasing power standards (PPS) per inhabitant, and describe within-country dispersion in the 22 countries with more than one region. In 2023 the median ratio of the highest to the lowest regional value is 2.39 for GDP per inhabitant and 1.38 for net disposable household income per inhabitant, and the median unweighted coefficient of variation across a country's regions falls from 27.5% to 11.0%. The highest-to-lowest ratio and both coefficients of variation are lower for disposable income than for GDP in all 22 countries in 2014 and 2023. The capital-to-rest ratio is also numerically lower, with medians of 1.76 for GDP and 1.25 for disposable income in 2023, but a lower ratio does not necessarily indicate a smaller distance from parity. In Czechia in 2023, Praha's GDP per inhabitant is 2.60 times that of the rest of the country; its disposable income per inhabitant is 1.31 times as high. The values are published estimates, reported in increments of 100 PPS and partly provisional or estimated. PPS remove price differences between countries, not between regions of one country, and disposable income excludes social transfers in kind. The comparison is descriptive and does not attribute the difference between the measures to commuting, taxation or transfers.

Why compare GDP and household income across regions?

Eurostat's metadata describe regional GDP as the measure used to compare the economic activity of regions and as the most important indicator for selecting regions eligible for support under the investment for growth and jobs goal of EU regional policy. Eurostat regional accounts metadata. Expressed per inhabitant, it divides production located in a region by the people who live there. Eurostat's regional yearbook notes that GDP is recorded where it is generated, the place of work, whereas income is recorded where people live, and that part of the income generated in wealthy regions may be attributed to commuters from surrounding regions, citing Praha and Střední Čechy as an example. Eurostat, Economy at regional level.

GDP per inhabitant and residents' income can therefore diverge for accounting reasons alone. We ask how much smaller, if at all, within-country regional differences are when the same regions are compared on disposable income instead of GDP, not whether any level of difference is fair or which policies produce it.

Data, definitions and source vintage

Three Eurostat datasets were retrieved on 30 September 2026 from the dissemination API in JSON-stat format and preserved byte for byte with SHA-256 checksums: GDP at current market prices by NUTS 2 region (nama_10r_2gdp, updated 10 February 2026), income of households by NUTS 2 region (nama_10r_2hhinc, items B5N and B6N, updated 20 May 2026) and the average annual population used for regional GDP (nama_10r_3popgdp, updated 10 February 2026). The NUTS 2024 table and the Urban Audit 2024 city table come from Eurostat's GISCO service. All three datasets use exactly the 244 NUTS 2 codes of the 2024 classification for the member states, including codes that exist only in that version.

GDP (G) is the result of the production activity of resident producer units in the region, compiled from the output or income side. Net primary income of households (P, B5N) combines compensation of employees received by households, net operating surplus and mixed income, and net property income. Net disposable income (H, B6N) is primary income minus current taxes on income and wealth and net social contributions, plus social benefits other than social transfers in kind and other net current transfers. It excludes social transfers in kind, such as services provided by government free of charge, which is why Eurostat advises against using regional disposable income to compare regions of different countries. Eurostat, Regional household income statistics. We compare regions only within countries.

All measures are Eurostat's published values in PPS (EU27 from 2020) per inhabitant. The PPS is an artificial currency unit; values in PPS are obtained by dividing an aggregate in national currency by the country's purchasing power parity (PPP). Eurostat PPS glossary). Regional PPPs are not available: for a given country and year the same PPP is applied to all regions. Eurostat regional accounts metadata. Within a country, year and measure, scaling all regions by a common PPP preserves ratios before rounding; ratios calculated from separately rounded published values can differ slightly. This invariance does not apply to ratios of household income to GDP, because the two measures use different conversion factors. Per-inhabitant values are reported in increments of 100 PPS. Status flags mark all 2023 GDP and population values for Germany, Greece, Spain and France as provisional, German household income in both years as estimated, household income for Greece, Spain, France,

Malta and the Netherlands in 2023 as provisional, and Greek values in 2014 as provisional. No value used carries a break-in-series flag.

Analytical choices

An internal analysis plan, committed before any dispersion statistic was computed, fixed the frame, measures, years, quantities and checks. The analyst had already inspected coverage and read Eurostat articles reporting related findings, so the direction of some comparisons was anticipated. This is exploratory description with a documented workflow, not preregistration or blinded confirmation.

The primary year is 2023, the latest in which all 244 regions have G, P, H and population; household income for 2024 covers 63 regions in 12 countries. The comparison year is 2014, the earliest complete year; 2012 and 2013 lack Mayotte. The capital region is the NUTS 2 region containing the city flagged as capital in the Urban Audit 2024 table. For each of the 22 countries with at least two regions, each measure and each year we calculate three dispersion measures: the ratio of the highest to the lowest regional value; the coefficient of variation (CV), the population standard deviation divided by the unweighted mean of regional values, so that every region counts equally; and the population-weighted CV. We also calculate the capital ratio, the capital region's value divided by the population-weighted mean of the country's other regions. The capital ratio is directional, not a dispersion measure: 1 means parity with the rest of the country, and a lower value can lie farther from parity. For each region we report disposable income as a percentage of GDP. CV levels are shown to one decimal place; CV changes and sensitivity differences are shown to two decimal places, in percentage points.

One statement in the plan proved wrong: that one national PPP converts both GDP and household income. A check added after the first results shows that published euro and PPS totals imply nearly constant conversion factors within each country and measure, with a maximum regional spread of about 4.0 parts per million in 2023, consistent with rounding, but that the factor for household income differs from that for GDP in most countries. Dispersion, which uses one measure at a time, is unaffected. The ratio of disposable income to GDP is computed directly from published national-currency totals, avoiding cross-measure PPP conversion. This correction, the checks added after the first results and the revisions made after an independent review are recorded in addenda to the plan; post hoc checks are labeled below.

The 244 regions are the complete set of published units, not a sample. We report no p values or confidence intervals; sensitivity checks describe dependence on choices, not uncertainty.

Disposable income is less dispersed than GDP in every multi-region country

Country	Regions	Highest/lowest, GDP	Highest/lowest, disposable income	CV %, GDP	CV %, disposable income	Capital ratio, GDP	Capital ratio, disposable income
Belgium (BE)	11	2.63	1.33	31.6	9.5	1.74	0.89
Bulgaria (BG)	6	2.47	1.86	38.1	25.4	2.20	1.75
Czechia (CZ)	8	3.18	1.42	45.5	11.5	2.60	1.31
Denmark (DK)	5	1.90	1.16	24.4	5.6	1.64	1.14
Germany (DE)	38	2.37	1.41	21.7	7.5	1.08	0.93
Ireland (IE)	3	2.41	1.09	33.2	3.8	1.35	1.01
Greece (EL)	13	2.27	1.50	23.7	14.2	1.78	1.24
Spain (ES)	19	2.08	1.64	20.4	14.7	1.47	1.29
France (FR)	27	5.59	3.49	26.5	17.6	1.87	1.28
Croatia (HR)	4	2.49	1.27	37.2	9.3	2.03	1.22
Italy (IT)	21	2.90	1.89	28.6	17.4	1.18	1.04
Lithuania (LT)	2	1.96	1.32	32.4	13.8	1.96	1.32
Hungary (HU)	8	3.44	2.15	51.6	27.0	2.89	1.86
Netherlands (NL)	12	1.86	1.19	19.0	4.9	1.41	1.07
Austria (AT)	9	1.69	1.12	14.8	3.1	1.20	0.92
Poland (PL)	17	2.92	1.60	32.0	11.1	2.24	1.35
Portugal (PT)	9	2.33	1.35	25.1	10.4	1.83	1.27
Romania (RO)	8	3.88	2.46	52.7	34.0	3.00	2.15
Slovenia (SI)	2	1.53	1.03	21.0	1.4	1.53	1.03
Slovakia (SK)	4	2.78	1.64	46.4	21.7	2.43	1.57
Finland (FI)	5	1.50	1.33	16.3	11.0	1.45	1.27
Sweden (SE)	8	1.77	1.28	18.4	8.1	1.53	1.23

2023. Highest/lowest is the ratio of the highest to the lowest regional value; CV is the equal-region coefficient of variation. The capital ratio divides the capital region by the population-weighted rest of

the country; it is directional, and 1 means parity. In Lithuania and Slovenia, with two regions each, the two ratios coincide.

In each of the 22 countries, the highest-to-lowest ratio and both CVs are lower for disposable income than for GDP, in 2023 and in 2014:

Dispersion measure, 22 countries	Median 2023, GDP	Median 2023, primary income	Median 2023, disposable income	Disposable income less dispersed than GDP, 2023	Same, 2014
Highest/lowest ratio	2.39	1.61	1.38	22 of 22	22 of 22
CV %, equal regions	27.5	15.4	11.0	22 of 22	22 of 22
CV %, population-weighted	29.4	15.3	12.0	22 of 22	22 of 22

Across countries in 2023, the median ratio of the equal-region disposable-income CV to the equal-region GDP CV is 0.42, ranging from 0.06 in Slovenia to 0.72 in Spain. The two largest highest-to-lowest ratios for disposable income are 3.49 in France, where Ile de France and Mayotte are the extremes on both measures, and 2.46 in Romania. For GDP the ratio ranges from 1.50 in Finland to 5.59 in France.

Net primary income is recorded where recipients live but before taxes and transfers. In 2023, primary income is less dispersed than GDP in 20 of 22 countries on the highest-to-lowest ratio and both CVs, the exceptions being Bulgaria and Finland; disposable income is less dispersed than primary income in all 22 on those three measures. For each of the three measures the median for primary income lies between those for GDP and disposable income, and it falls more in the step from GDP to primary income than in the step from primary to disposable income. That first step combines a change of place, from where production happens to where income recipients live, with a change of concept, from all value added to the income households receive; these data cannot separate the two.

Capital regions

The capital ratio is numerically lower for disposable income than for GDP in all 22 countries in both years, but a lower ratio is not always a smaller gap:

Capital ratio, 22 countries	Median, GDP	Median, primary income	Median, disposable income	Disposable income ratio lower than GDP ratio	Disposable income ratio closer to 1 than GDP ratio
2014	1.79	1.39	1.23	22 of 22	21 of 22
2023	1.76	1.39	1.25	22 of 22	22 of 22

Its distance from 1 is smaller for disposable income than for GDP in all 22 countries in 2023 and in 21 of 22 in 2014. The exception is Germany in 2014, where the Berlin ratio is 0.97 for GDP and 0.89 for disposable income, so the lower value lies farther from parity. From

primary to disposable income, the ratio also moves farther from 1 in Austria, Belgium and Germany in 2023, where both ratios are below 1.

In 2023 the capital region has the highest GDP per inhabitant in its country in 19 of 22 countries, the exceptions being Germany, Italy and Austria, but the highest disposable income in 14. In Austria (0.92), Belgium (0.89) and Germany (0.93) the capital region's disposable income per inhabitant is below that of the rest of the country, although its GDP per inhabitant is above it. In 20 of 22 countries the capital region has the lowest ratio of disposable income to GDP in its country; in Germany the lowest is Hamburg, in Italy the Provincia Autonoma di Bolzano/Bozen.

Czechia

Region	GDP, PPS per inhabitant	GDP index, EU27 = 100	Primary income, PPS per inhabitant	Disposable income, PPS per inhabitant	Disposable income as % of GDP
Praha (CZ01)	75,700	197	25,600	21,900	31.6
Střední Čechy (CZ02)	31,500	82	21,200	18,800	65.1
Jihozápad (CZ03)	29,400	77	18,400	16,700	62.0
Severozápad (CZ04)	23,800	62	17,000	15,400	70.9
Severovýchod (CZ05)	28,400	74	17,800	16,400	63.1
Jihovýchod (CZ06)	32,800	85	19,000	17,200	57.5
Střední Morava (CZ07)	28,300	74	17,500	16,200	62.8
Moravskoslezsko (CZ08)	27,000	70	16,900	15,800	63.9

2023. The last column uses national-currency totals. Dividing the two PPS columns gives a lower figure for every region, because the frozen files imply a euro-per-PPS factor for Czech household income 1.09 times that for Czech GDP.

In 2023, Praha's GDP per inhabitant, 75,700 PPS, stands at 197 on Eurostat's index with the EU27 average at 100 and is 3.18 times that of Severozápad, the lowest Czech region. Its disposable income per inhabitant, 21,900 PPS, is 1.42 times Severozápad's 15,400 PPS. Praha's disposable income equals 31.6% of its GDP; in the other seven regions the ratio lies between 57.5% and 70.9%. The Czech equal-region CV falls from 45.5% for GDP to 11.5% for disposable income, a ratio of 0.25, against the 22-country median of 0.42.

Czechia	Highest/lowest, GDP	Highest/lowest, disposable income	CV %, GDP	CV %, disposable income	Praha ratio, GDP	Praha ratio, disposable income
2014	3.07	1.54	45.0	14.1	2.60	1.38
2023	3.18	1.42	45.5	11.5	2.60	1.31

Czechia	Highest/lowest, GDP	Highest/lowest, disposable income	CV %, GDP	CV %, disposable income	Praha ratio, GDP	Praha ratio, disposable income
2024, supplementary	3.14	1.52	43.9	14.0	2.53	1.39

The 2024 row uses household income values for 2024 as published in the frozen release, available for all eight Czech regions but for only 63 of the 244 EU regions. Regional accounts are revised, so the latest year may change.

The Praha ratio for disposable income was 1.38 in 2014 and 1.31 in 2023, while the GDP ratio was 2.60 in both years; in the supplementary 2024 values it is 1.39. These Praha ratios are all above 1, so here a lower value also means a smaller distance from parity.

Change between 2014 and 2023

Changes over nine years are mixed. The equal-region CV of GDP fell in 12 countries and rose in 10, with a median change of -0.26 percentage points; that of disposable income rose in 12 and fell in 10, with a median change of 0.14 percentage points. The highest-to-lowest GDP ratio rose in 13 countries and fell in 9.

Sensitivity and validation

Excluding the eight NUTS 2 regions that correspond to the outermost regions listed by the European Commission (FRY1 to FRY5, ES70, PT20, PT30) lowers France's highest-to-lowest ratio from 5.59 to 2.19 for GDP and from 3.49 to 1.40 for disposable income; disposable income remains less dispersed on all three measures in all 22 countries. Recomputing from published euro values instead of PPS changes no count; the largest differences in 2023 are 0.024 in a highest-to-lowest ratio, 0.21 percentage points in the equal-region CV, 0.22 percentage points in the population-weighted CV and 0.007 in a capital ratio, consistent with rounding. Recomputing implied per-inhabitant values from the published aggregate totals in millions divided by population changes no count either (largest differences 0.018 in a highest-to-lowest ratio, 0.14 percentage points in the equal-region CV, 0.14 percentage points in the population-weighted CV and 0.005 in a capital ratio), and every published per-inhabitant value lies within 50 PPS of the recomputed value, consistent with rounding to the nearest 100 PPS. Between measures, the household income conversion factor ranges from 0.97 times the GDP factor in Sweden to 1.16 times in Ireland and differs by more than 1% in 25 of 27 member states.

In the 17 multi-region countries without any flagged GDP or disposable income value in 2023, disposable income is less dispersed on all three measures and its capital ratio is numerically lower. Eurostat's household income article quotes population-weighted dispersion for 2023 in selected countries: 7 of 12 quoted values match ours to one decimal, and the others differ by at most 0.29 percentage points (28.4 here against 28.1 quoted for disposable income in Bulgaria). Its statement that disposable income is less dispersed than primary income in every country is reproduced on the population-weighted CV for all 20 countries with more than two regions. A post hoc check reproduces all 19 of the article's quoted ratios of primary income to GDP in euro terms to one decimal, from 30.8% in Southern (Ireland) to 96.2% in

Península de Setúbal (Portugal). A second post hoc check removes the capital region: in the 20 countries with at least three regions, disposable income remains less dispersed than GDP in all 20 on the highest-to-lowest ratio and the equal-region CV (median equal-region CVs 14.4% and 7.3%), and in 19 of 20 on the population-weighted CV, the exception being Finland (3.9% against 3.6%).

Who is missing?

Cyprus, Estonia, Latvia, Luxembourg and Malta consist of a single NUTS 2 region each, so their internal differences cannot be measured at this level. Extra-regio territories, such as embassies and offshore production, have no resident population and are excluded; their GDP was at most 0.81% of national GDP (Denmark) in 2023. No value is missing for the 244 regions in 2014 or 2023.

Interpretation and limits

In Eurostat's published regional accounts, regional differences within each multi-region EU country are smaller in net disposable household income per inhabitant than in GDP per inhabitant, on three dispersion measures and in both years. How much smaller varies widely between countries. The capital ratio is also lower for disposable income in every country, but it is a directional comparison: in Germany in 2014 the lower disposable income ratio lies farther from parity.

Several readings would go beyond this evidence. GDP per inhabitant is not income, so a large GDP gap is not a statement about residents' incomes. The move from GDP to disposable income combines the place of measurement, the household share of value added and redistribution through taxes, contributions and transfers; this study does not estimate how much each contributes. PPS remove national, not regional, price differences, so residents of a region with higher local prices may have less purchasing power than its PPS value suggests; the data contain no regional price levels. Disposable income excludes social transfers in kind, and as a national accounts balance for the household sector it differs from the household-level concept in Eurostat's living conditions glossary.

Results depend on how regions are drawn. Praha and Wien each consist of a single NUTS 3 region, the city itself, whereas Eastern and Midland in Ireland contains three NUTS 3 regions and Yugozapaden in Bulgaria five. Single regions can set a country's highest-to-lowest ratio: Mayotte is the lowest French region on both measures and Ciudad de Melilla the lowest Spanish region on GDP. Equal-region and population-weighted CVs answer different questions, and neither measures inequality between persons. The values are Eurostat estimates, partly provisional or estimated, and this frozen vintage may later be revised. The analysis ranks no country or region as better or worse.

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