An introduction to inequality in Europe

Tackling inequalities in Europe: the role of social investment

Disclaimer

Acknowledgements

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Overview of Key Findings

The European continent is by far the richest, and on the whole, most equal continents in the world; but inequality is on the rise. On this diverse continent, there have been many countries and whole regions which are experiencing surges in inequality; and in many cases starting well before the 2008 financial crisis. Unchecked increases in inequality will hamper the opportunities of lower-income groups and can threaten the social fabric of our societies.

Inequality is on the rise in Europe – the continent has been seeing multiple inequality measures on the rise for the last decade and a half. For instance, in 2014, on average, a person in the top 20% of the income distribution was likely to have 5 times more than someone in the bottom 20% (as opposed to 4.6 times in 2000).

Southern and Central-Eastern Europe are the most unequal – these regions have experienced large economic setbacks and are presently the most unequal in Europe. While Central-Eastern Europe has gradually begun "repairing" some of the surges in inequality in recent years, in Southern Europe inequality measures are only gaining more speed in their deterioration.

Equality progress is being rolled back or slowed – some regions and countries that have had historically low levels of inequality (e.g. Nordic countries) are now slowing down the pace in tackling inequality and, in some highly equal countries, inequality is on a continuous rise.

There is an overall increase in poverty risk for bottom quintiles – in many countries the rise in inequality has been highly correlated to a sharp increase in the risk-of-poverty rates for lower-income quintiles. Thus tackling inequality often means addressing the issues faced by the most vulnerable in European societies.

Income mobility is declining across the continent – those in the bottom 40% are today less likely to move out of their socio-economic group than they were before 2008. The lack of opportunity to escape one's economic situation, despite one's effort, points to a possibility of governments' underproviding the resources to facilitate mobility.

Inequalities between income groups persist – the bottom 40 are more likely to report worse health outcomes than the rich, are less likely to have completed secondary education levels, and find housing costs to be overwhelming since the 2008 crisis. When countries intervene to ensure these socio-economic disparities are minimised (e.g. more investment in healthcare and educational access, and provision of social housing/housing allowances), people in lower-income groups see increases in economic and personal well-being over the course of their lives.

The reasons for the increase in inequality are different – Central-Eastern European countries have seen inequality increase since their transition to market economies. Most countries (East, West, South, and North) have seen income inequality widen because of technological changes (preference for high-skilled labour), labour regulatory changes and, to a small degree, globalisation.

Chapter 1: Inequality across Europe

This chapter provides a broad quantitative, empirical/theoretical and historical overview of how income inequality is shaping within Europe.

The chapter is divided into three sections:

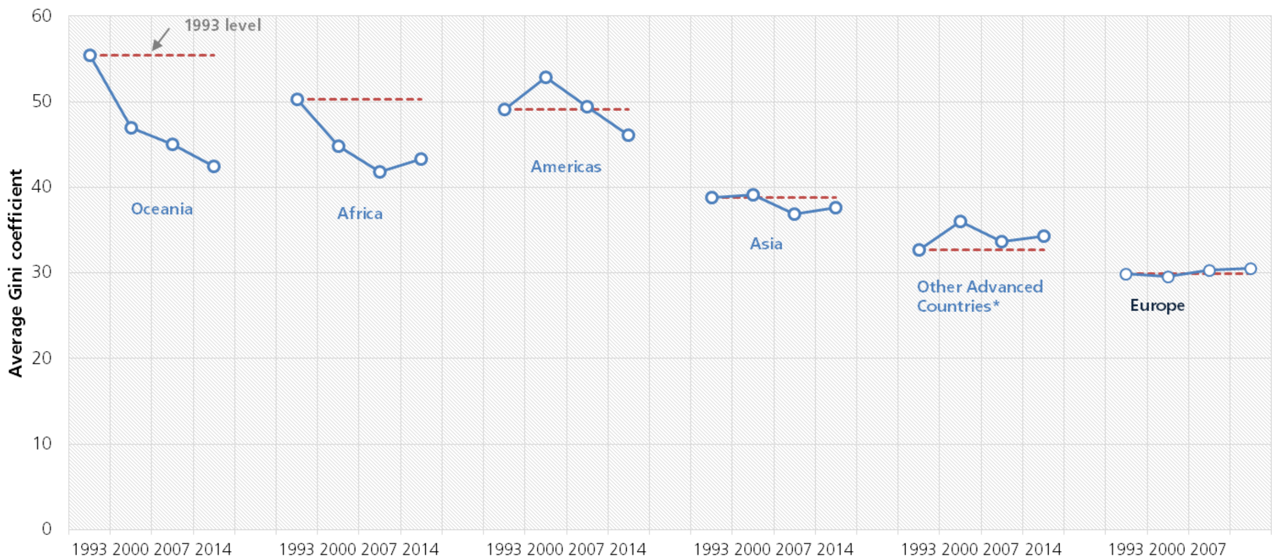
- **Section 1.1** – This section provides various statistics and analyses to show the different measures of inequality in the various regions of Europe and how they grew or decreased prior to the recession (2000-2008) and after (2008-2014).
- **Section 1.2** – This section presents a brief literature review which offers the reader a cursory understanding of why low inequality helps support economic growth and political stability.
- **Section 1.3** – The chapter concludes with an empirical and historical perspective of what has driven inequality in Europe (globalisation, technological change, and policy shifts) over the last few decades – with sub-sections dedicated to understanding inequality during Central-Eastern Europe's transition to market-economies and the run-up to the 2008 financial crisis.

1.1. Income inequality is on the rise in Europe

When looking at income inequality on a global level, there is some room for optimism. Today in many regions around the world income inequality levels, as measured by the Gini coefficient[1], are lower than they were in the early 1990s (see figure 1). The three most unequal regions in 1993, Oceania, Africa, and the Americas, all saw income inequality in 2014 well below their 1993 levels – although the trend is recent, in the Americas and Africa it has begun to reverse. Asia, with its economic gains in recent decades at present has inequality levels lower than the 1993 levels, but they are slowly sliding back.

Strikingly, the advanced economies of the world (excluding those in Europe) have seen consistently higher levels of inequality in the last couple of decades, despite a drop just before the 2008 crisis. **Europe, which is the most equal region in the world, has seen inequality gradually but steadily increase since 2000.**

Figure 1 - Gini Coefficient, Regional Averages, 1993, 2000, 2007, 2014



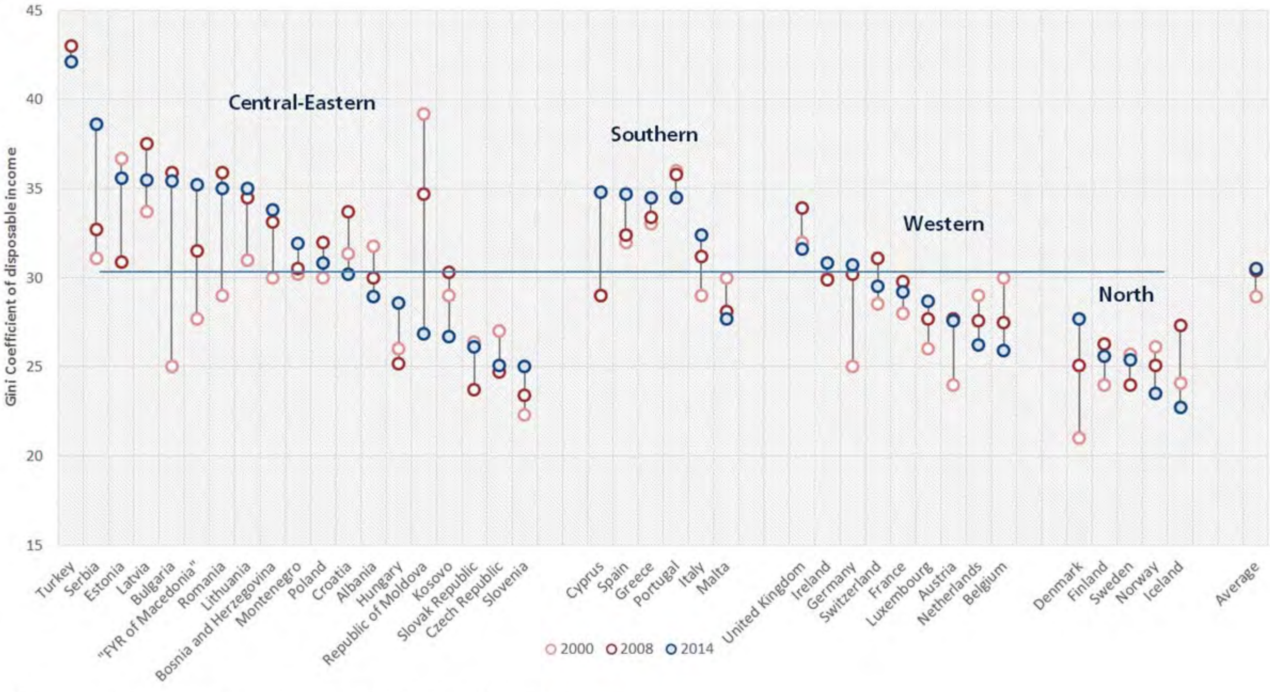
*Australia, Canada, Japan, South Korea, New Zealand, Taiwan, United Sates of America
Data Source - EuroStat, World Income Inequalities Database, and CEB Staff Calculations

1 The Gini index measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. The Gini index measures the area between the Lorenz curve and the hypothetical line of absolute equality, expressed as a percentage of the maximum area under the line. **A Gini index of 0 represents perfect equality and 1, perfect inequality (i.e. one person holds all the wealth).** (ILO 2012)

Given the heterogeneity of countries in Europe, the steady increase in income inequality is not universal, but 23 out of 39 countries are less equal than they were fourteen years ago. The regional disparities are stark (see figure 2 below), with Central-Eastern and Southern European countries typically more unequal than their Western and Northern counterparts. The different country-specific economic, social, political, and regulatory environments (see section 1.2 for literature on the drivers of recent income inequality in Europe) affect within-country income inequality.

Overall, inequality in Europe is on the rise. On average, European countries in 2014 had a Gini-coefficient of 30.52, up from 30.4 in 2008 and 29.56 in 2000 (see Table 1). The increase after the onset of the 2008 financial recession (between 2008 and 2014) was 0.11 Gini points, a much slower pace relative to the speed of change between 2000 and 2008, when inequality increased by 0.88 points.

Figure 2 - Gini coefficient values, European regional averages (2000, 2008, 2013)



Data Source - EuroStat, World Income Inequalities Database, and CEB Staff Calculations

Central-Eastern Europe – A case of economic convergence and rising inequality

Central-Eastern European is a representation of the continent's diversity, with some countries being among the most equal countries in Europe and others being the most unequal. The region has the largest concentration of countries with above average inequality – 11 in total (see figure 2). In Central-Eastern Europe the underlying reasons for the disparity are various (see section 1.3 for historical overview), but from a purely macroeconomic perspective a number of arguments emerge that show-case **a region enjoying large economic gains prior to the recession with concurrent increases in inequality – Since the Great Depression, economic growth has slowed but inequality levels still remain high.**

The Pre-Recessionary period (2000 to 2008)

In the pre-recessionary years, inequality in Central-Eastern Europe rose noticeably, with an average Gini coefficient increasing by 1.88 points from 29.8 in 2000 to 3.14 in 2008 (see Table 1, next page), well above the European average increase of 0.85 points. In part, this jump in inequality reflects the social changes that occurred as countries transitioned to market economies and began to economically converge towards "Western[2]" Europe.

[2] Only in this instance, for ease of overall comparison, the term Western includes the countries of Southern, Western, and Northern Europe (they are divided throughout the rest of the paper).

The average annualised GDP growth rate for the region stood at 4.7% between 2000 and 2008 (well above the European average of 2.2%). Almost all Central-Eastern European countries saw high growth rates that were often correlated with a sharp increase in income inequality (with a few exceptions, such as Slovak Republic, Estonia, Czech Republic, Hungary, and Albania). During this era of high GDP growth, many countries also experienced high annualised growth rates of real median incomes[3]. Thus, despite growing income inequality, the overall population also benefitted with personal economic gains. For instance, Lithuania and Latvia (the two fastest growing economies in the region) saw real median incomes grow at an annualised rate of 18.9% and 17.5% respectively (both countries also saw their Gini coefficients increase, by 3.5 and 3.8 points respectively).

Additional indicators of income inequality increased; namely the average **Palma ratio**[4] and the **20/80 ratio**[5]. The Palma ratio examines the share of the top quintile relative to the bottom four quintiles, and changes in the ratio explain much of the dynamics of inequality. A ratio above 1 indicates that the top 10% have more income than the bottom 40%, and are more likely to see larger gains during periods when national income grows – (see footnote 3). The Palma ratio in Central-Eastern Europe consistently stayed above 1.0 in all time periods, and dramatically increased from 1.169 (2000) to 1.3030 (2008).). While most countries saw surges in the Palma ratio before the recession, in some countries such as Estonia, Republic of Moldova, Poland, Hungary, Slovak Republic and Slovenia the ratio declined (the latter two having Palma ratios closer to levels seen in the more equitable Northern region).

The same story emerges when examining the 80/20 ratio – another measure of inequality that looks at the income distribution ratio between the top 20% and the bottom 20%. On average in Central-Eastern Europe, the ratio increased from 4.9 (2000) to 5.6 (2008) – indicating that those in the top 20% had incomes that were 5.6 times larger than those in the bottom 20%.

The sharp increases in inequality measures meant that, while most people saw economic benefits and gains from higher economic growth (as reflected in increases in real median incomes)[6], the top income groups often benefitted to a much greater extent.

Post-Recessionary period (2008-2014)

The macro-economic picture after the onset of the 2008 financial crisis was starkly different. The annualised GDP growth rate dropped to 1.6% (2008-2014, see table 1). This positive growth was mostly driven by relatively healthy GDP growth in Poland (2.9%), Albania (2.3%) and a handful of other moderately growing economies. Almost every other country either saw noticeable GDP stagnation or, at worst, contractions (Croatia has a contraction rate of -2.2%).

Real median income growth declined from previously robust levels – growing at a reduced annualised rate of 1.2% (2008-2014). The drops in real median income growth were dramatic for some countries. In Estonia, Latvia and Lithuania, between 2004/05 and 2008, one could expect to see median income levels grow annually by 13.8%, 18.9%, and 17.9%, respectively; after the crisis (between 2008 to 2015) those figures dropped to 4.5%, 1.6%, and 2.7%.

Inequality measures did not paint an optimistic picture. The average Gini coefficient in the region still increased, by 0.19, from 31.7 (2008) to 31.9(2014). For some countries, such as Bosnia & Herzegovina, Lithuania, "the former Yugoslav Republic of Macedonia", Montenegro, Serbia, and Slovenia, this was a continuation of a growing Gini coefficient since 2000. For the Czech Republic, Estonia, Hungary, and Slovak Republic, all of which had made gains in decreasing the Gini coefficient, the trend reversed and, in some cases, eliminated any gains made since 2000.

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3 When data are available – median income data are not available for many of the Central-Eastern European economies.

4 **The Palma ratio** is an alternative form of measuring income inequality over the standard and widely used Gini coefficient. The basis for the Palma ratio is that changes in inequality are typically determined by the richest 10% and the poorest 40% because those within the 50% and 90% (income quintiles 5-9) income levels often have a stable half of a nation's gross national income, irrespective of country and time, relative to those in the 40% (bottom 4 quintiles) and the top 10% (top quintile), which have more dynamic changes in income shares – empirical evidence has shown that inequality is the result of changes in these "tail-ends" of the income distribution. Thus when the ratio is above 1, it means that inequality is on the rise as the changes in income inequality are being "absorbed" more by the richest 10% of the population.

5 **The 80.20 ratio** is a measure of the inequality of income distribution. It 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) – example, if the 80/20 ratio for a country is 4, it means that those in the 80th percentile have incomes that are 4 times higher than those in the 20th percentile.

6 When data were available for comparison.

Table 1 - Central-Eastern Europe GDP/Real Median Incomes/Gini Coefficient in Europe

	GDP - EUR millions - (in 2010 EUR)			Annualised Growth Rate of GDP - (2010 EUR)		Real Median Income (in 2015 EUR)			Annualised Growth Rate of Real Median Income		Gini Coefficient			Absolute Change in Gini coefficient	
	2000	2008	2014	'00-'08	'08-'14	2000	2008	2015/16	'00-'08	'08-'16	2000	2008	2014	'00-'08	'08-'14
Central-Eastern Europe (avg-->)	74 450.99	107 758.54	118 405.47	4.7%	1.6%	4 682	5 291	5 824	4.2%	1.2%	29.8	31.7	31.9	1.88	0.19
Albania	5 229.70	8 393.50	9 622.80	6.1%	2.3%	-	-	-	-	-	31.7	30.0	29.0	-1.8	-1.0
Bosnia and Herzegovina	-	-	-	-	-	-	-	-	-	-	29.9	33.1	33.8	3.2	0.8
Bulgaria	24 410.80	39 134.30	39 833.10	6.1%	0.3%	-	2 381	3 189	-	3.7%	25.0	35.9	35.4	10.9	-0.5
Croatia	35 287.70	49 433.20	43 215.40	4.3%	-2.2%	-	6,277 +	5 762	-	1.5%	31.3	33.7	30.2	2.4	-3.5
Czech Republic	114 387.10	160 639.20	161 738.60	4.3%	0.1%	5,193**	6 668	7 784	8.7%	2.0%	27.0	24.7	25.1	-2.3	0.4
Estonia	10 662.00	16 876.40	17 223.20	5.9%	0.3%	3,871*	6 484	8 578	13.8%	3.6%	36.7	30.9	35.6	-5.8	4.7
Hungary	80 466.70	104 521.70	104 581.80	3.3%	0.0%	4,997**	5 358	4 751	2.4%	-1.5%	26.0	25.2	28.6	-0.8	3.4
Kosovo	-	-	-	-	-	-	-	-	-	-	29.0	30.3	26.7	1.4	-3.6
Latvia	12 275.30	21 582.60	20 626.90	7.3%	-0.8%	3,083**	5 187	6 368	18.9%	2.6%	33.7	37.5	35.5	3.8	-2.0
Lithuania	18 320.70	32 371.00	33 061.80	7.4%	0.4%	2,861**	4 687	5 606	17.9%	2.3%	31.0	34.5	35.0	3.5	0.5
Moldova (Republic of)	-	-	-	-	-	-	-	-	-	-	39.2	34.4	26.8	-4.8	-7.6
Montenegro	-	-	3 307	-	-	-	-	-	-	-	30.2	30.5	31.9	0.3	1.4
Poland	246 226.60	339 629.50	404 276.70	4.1%	2.9%	3,155**	4 786	5 917	14.9%	2.7%	30.0	32.0	30.8	2.0	-1.2
Romania	82 976.60	137 482.20	137 564.20	6.5%	0.0%	-	2 495	2 474		-0.1%	29.0	35.9	35.0	6.9	-0.9
Serbia	19 310.20	30 545.10	30 084.20	5.9%	-0.3%	-	-	2 521	-	-	31.1	32.7	38.6	1.6	5.9
Slovak Republic	41 894.50	68 022.30	73 529.60	6.2%	1.3%	3,463**	5 310	6 985	15.3%	3.5%	26.4	23.7	26.1	-2.7	2.4
Slovenia	27 888.10	38 837.50	36 211.50	4.2%	-1.2%	10,835**	11 945	12 346	3.3%	0.4%	22.3	23.4	25.0	1.1	1.6
"the former Yugoslav Republic of Macedonia"	5 302.80	6 902.00	7 723.80	3.3%	1.9%	-	-	-	-	-	27.7	31.5	35.2	3.8	3.7
Turkey	392 126.10	562 007.60	771 886.50	4.6%	5.4%	-	2 903	3 438	-	2.9%	-	43.0	42.1	-	-0.9
Northern Europe (avg-->)	193 582.48	230 885.48	237 808.74	2.2%	0.5%	27 596	30 760	27 782	1.4%	-1.3%	24.4	25.6	25.0	1.2	-0.6
Southern Europe (avg-->)	466 703.57	541 340.90	492 858.35	1.9%	-1.6%	11 419	13 564	12 242	2.2%	-1.3%	31.5	31.7	33.1	0.2	1.4
Western Europe (avg-->)	815 242.40	942 750.74	979 608.90	1.8%	0.6%	20 428	23 394	25 916	1.7%	1.3%	28.7	29.5	28.9	0.8	-0.6
Europe Average	352 849.09	419 193.89	417 248.70	2.2%	-0.1%	15 072	16 256	15 798	-	-0.4%	29.30	30.41	30.52	1.10	0.11

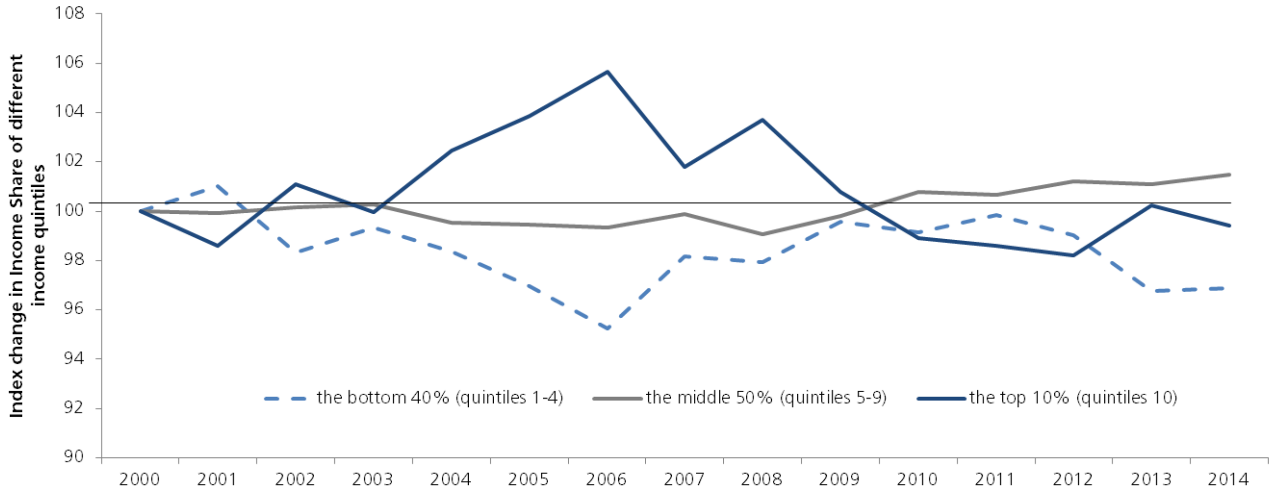
^2001
‡ 2003
* 2004
**2005 +2010
Source - Eurostat, World Income Inequalities Database, and CEB Staff Calculations

> 2.5%	(High Growth)
1% to 2.5%	(Moderate Growth)
0% to 1%	(Stagnation - Low Growth)
< 0%	(Contraction)

> - 0 Declining Inequality
< + 0 Growing Inequality

However, the Palma ratio, on average, dropped from 1.303 (2008) to 1.247 (2014), In part this was a reflection of the fact that the top 10% saw their share of income drop after the recession relative to the bottom 40%, but this trend has recently begun to reverse (see figure 3 below) – while the middle 50% (quintiles 5-9) have seen slightly positive but not dramatic deviations from their share of national income since 2000.

Figure 3 - Index change in Income Share of Bottom 40%, Middle 50%, and Top 10% (year 2000 = 100)



Source - CEB Staff Calculation based on Eurostat data

The 80/20 ratio also dropped, by 0.11 from 5.6 (2008) to 5.5 (2014). However, similar to the Palma ratio, the drop in most countries rarely made up for the larger increases prior to the recession – aside from Kosovo, "the former Yugoslav Republic of Macedonia". Estonia, Hungary, Slovak Republic, and Slovenia, the trend of reducing the 80/20 ratio reversed and, in some cases, the gains in reducing the ratio have not only been lost, but have surpassed 2000 levels.

Table 2 - Central-Eastern Europe - Alternative inequality measures - Palma Ratio, 20/80 Ratio, and risk of poverty

	Palma Ratio			Absolute Change in Palma Ratio		80/20 Ratio			Absolute Change in 20/80 Ratio		Risk of Poverty bottom 25% income quartile		Change	Risk of Poverty of 25% to 50% income quartile		Change
	2000	2008	2014	'00-'08	'08-'14	2000	2008	2014	'00-'08	'08-'14	2007	2014	'7-'14	2007	2014	'7-'14
Central-Eastern Europe (avg-->)	1.169	1.303	1.247	0.13	-0.06	4.95	5.56	5.45	0.61	-0.11	86.9	91.2	4.25	35.9	34.0	-1.92
Albania	1.22	1.11	1.04	-0.10	-0.07	4.8	4.4	4.3	-0.44	-0.12	-	-		-	-	-
Bosnia and Herzegovina	1.12	-	1.33	-	-	4.4		5.7	-	-	-	-		-	-	-
Bulgaria	1.15	1.51	1.46	0.36	-0.05	5.0	6.4	6.8	1.42	0.33	100.0	100.0	*Maximum*	74	51.5	-22.50
Croatia	1.20	1.37	1.07	0.18	-0.30	4.8	5.3	5.1	0.48	-0.23	-	98.6		-	25.3	
Czech Republic	0.81	0.86	0.88	0.06	0.02	3.3	3.4	3.5	0.17	0.07	59.0	57.3	-1.70	11	8.5	-2.50
Estonia	1.52	1.15	1.44	-0.37	0.29	6.4	5.0	6.5	-1.41	1.45	97.6	100.0	2.40	7.8	21.3	13.50
Hungary	0.97	0.87	1.04	-0.10	0.17	3.9	3.6	4.4	-0.29	0.78	78.9	87.9	9.00	31	34.6	3.60
Kosovo	1.05	1.21	0.93	0.16	-0.28	4.2	5.0	3.9	0.82	-1.16			0.00	-	-	-
Latvia	1.44	1.64	1.45	0.20	-0.19	6.0	7.3	6.5	1.37	-0.83	100.0	100.0	0.00	37.1	32.8	-4.30
Lithuania	1.20	1.39	1.41	0.18	0.03	5.1	6.1	6.1	1.09	-0.05	97.2	97.3	0.10	22.2	21.3	-0.90
Moldova (Republic of)	1.54	1.40	0.94	-0.14	-0.46	6.3	5.8	3.8	-0.55	-2.01	-	-		-	-	-
Montenegro		1.14	1.24	1.14	0.10		4.7	4.8	4.66	0.13	-	-		-	-	-
Poland	1.29	1.23	1.14	-0.06	-0.09	5.2	5.1	4.9	-0.07	-0.22	92.6	88.0	-4.60	35.2	18.6	-16.60
Romania	1.07	1.50	1.38	0.43	-0.12	4.4	7.0	7.3	2.58	0.23	100.0	100.0	*Maximum*	64.7	52.8	-11.90
Serbia	-	1.03	1.70	-	0.67	-	-	6.7	-	-	-	100.0		-	57.6	
Slovak Republic	0.83	0.80	0.90	-0.04	0.10	3.4	3.3	3.9	-0.03	0.55	66.8	70.2	3.40	18.6	10.4	-8.20
Slovenia	0.85	0.78	0.84	-0.07	0.06	3.5	3.4	3.7	-0.19	0.36	64.3	77.5	13.20	10.7	13.1	2.40
"the former Yugoslav Republic of Macedonia"	1.45	2.29	1.39	0.84	-0.90	8.3	9.3	7.2	0.97	-2.14	-	100.0		-	60.1	-
Turkey	-	2.16	2.10	-	-0.07	-	9.2	8.8	-	-0.41	100.0	100.0	0.00	82.8	68.1	-14.70
Northern Europe (avg-->)	0.860	0.890	0.858	0.030	-0.032	3.56	3.70	3.63	0.13	-0.07	63.8	64.8	1.04	8.4	7.6	-0.78
Southern Europe (avg-->)	1.197	1.205	1.296	0.008	0.091	5.12	5.22	5.79	0.10	0.57	92.3	93.5	1.25	15.4	27.1	11.65
Western Europe (avg-->)	1.015	1.094	1.048	0.08	-0.05	4.20	4.49	4.43	0.29	-0.06	77.3	80.2	2.96	10.84	12.50	1.66
Europe Average	1.10	1.18	1.16	0.09	-0.02	4.61	4.99	5.04	0.38	0.04	81.43	84.82	3.39	20.23	23.21	2.97

Since the recession, the risk of poverty by different income levels has also changed (see table 2). Of those people in the bottom 25% income quartile in Central-Eastern Europe, 91.2% had an equalised disposable income which was below the at-risk-of-poverty threshold[7] - up 4.3%, from 86.9% in 2007. Encouragingly, for those in the 25% to 50% income quartile, the at-risk-of-poverty rate dropped from 35.9% to 34.0% (down 1.9%). Estonia, Hungary, and Slovenia were the only countries that saw increases for this quartile group (Estonia being a noticeable outlier, increasing by 13.5%).

Northern Europe – A region striving to maintain high equality

The Nordic Countries are undoubtedly the most equal nations in Europe and the world. Citizens living near the Artic can expect to live in a society that scores well on almost all inequality measures – the average Gini coefficient in 2014 stood at 25 (the European average is 30.52), and the average Palma ratio was 0.86 (well below the 1.0, indicating that the top 10% do not have a disproportionately large share of a nation's wealth). However, as was the case in many parts of Europe, **in the run-up to the recession inequality measures did begin to creep up slightly and the region is now working to rescind those losses.**

The Pre-Recessionary period (2000 to 2008)

Before 2008, Northern Europe experienced the healthy economic growth seen throughout the continent and annualised GDP growth stood at 2.2% (the same as the European average). Citizens of the region saw healthy but not dramatic increases in real median incomes, with an annualised growth rate of 1.4% (see Table 3). Although this growth rate was the lowest compared to the other regions, people were comforted knowing they had the highest real median incomes in all of Europe.

[7] The at-risk-of-poverty threshold is set at 60% of the national median equalised disposable income after social transfers. This indicator does not measure wealth or poverty, but low income in comparison to other residents in that country, which does not necessarily imply a low standard of living.

Table 3 - Northern Europe GDP/Real Median Incomes/Gini Coefficient in Europe

	GDP - EUR millions - (in 2010 EUR)			Annualised Growth Rate of GDP - (2010 EUR)		Real Median Income (in 2015 EUR)			Annualised Growth Rate of Real Median Income		Gini Coefficient			Absolute Change in Gini coefficient	
	2000	2008	2014	'00-'08	'08-'14	2000	2008	2015/16	'00-'08	'08-'16	2000	2008	2014	'00-'08	'08-'14
Central-Eastern Europe (avg-->)	74 450.99	107 758.54	118 405.47	4.7%	1.6%	4 682	5 291	5 824	4.2%	1.2%	29.8	31.7	31.9	1.88	0.19
Northern Europe (avg-->)	193 582.48	230 885.48	237 808.74	2.2%	0.5%	27 596	30 760	27 782	1.4%	-1.3%	24.4	25.6	25.0	1.2	-0.6
Denmark	225 211.40	251 015.50	253 457.00	1.4%	0.2%	25,226‡	26 485	28 659	1.0%	1.0%	22.0^	25.1	27.7	3.1	2.6
Finland	158 091.00	198 040.00	186 553.00	2.9%	-1.0%	18 502	22 521	23 558	2.5%	0.6%	24.0	26.3	25.6	2.3	-0.7
Iceland	7 773.80	11 152.50	10 995.20	4.6%	-0.2%	40,348*	46 797	23 693	3.8%	-8.2%	24.1	27.3	22.7	3.2	-4.6
Norway	277 172.50	326 956.20	345 561.60	2.1%	0.9%	33,834‡	35 837	38 084	1.2%	0.8%	26.0	25.1	23.5	-0.9	-1.6
Sweden	299 663.70	367 263.20	392 476.90	2.6%	1.1%	20,072*	22 162	24 918	2.5%	1.5%	25.7	24.0	25.4	-1.7	1.4
Southern Europe (avg-->)	466 703.57	541 340.90	492 858.35	1.9%	-1.6%	11 419	13 564	12 242	2.2%	-1.3%	31.5	31.7	33.1	0.2	1.4
Western Europe (avg-->)	815 242.40	942 750.74	979 608.90	1.8%	0.6%	20 428	23 394	25 916	1.7%	1.3%	28.7	29.5	28.9	0.8	-0.6
Europe Average	352 849.09	419 193.89	417 248.70	2.2%	-0.1%	15 072	16 256	15 798	-	-0.4%	29.30	30.41	30.52	1.10	0.11

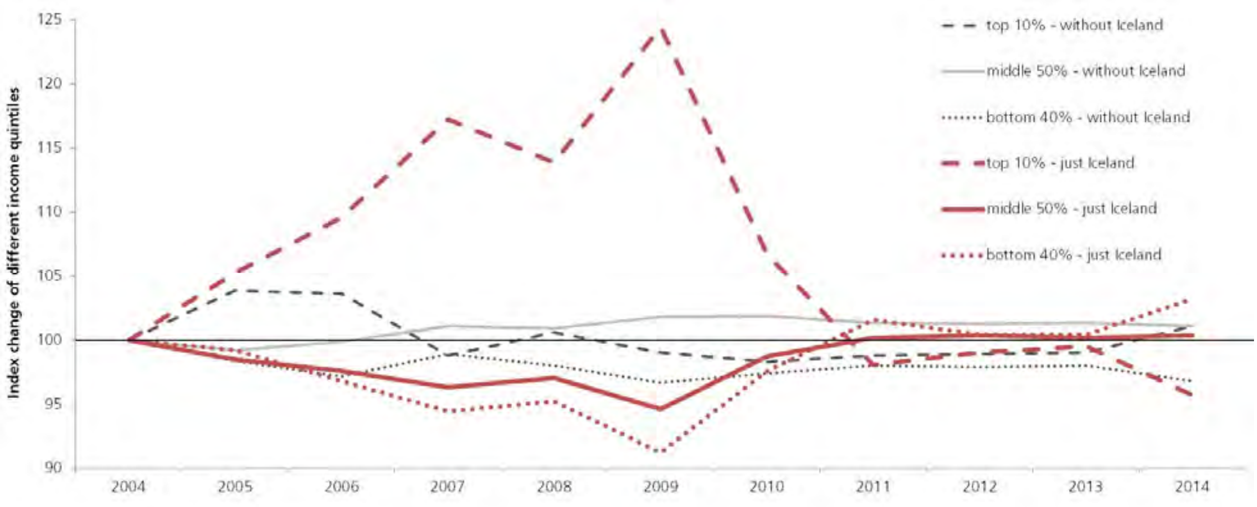
^2001
‡ 2003
* 2004
**2005 +2010
Source - Eurostat, World Income Inequalities Database, and CEB Staff Calculations

> 2.5%	(High Growth)
1% to 2.5%	(Moderate Growth)
0% to 1%	(Stagnation - Low Growth)
< 0%	(Contraction)

> - 0 Declining Inequality
< + 0 Growing Inequality

However, the healthy macroeconomic conditions did correlate with an increase in inequality measures. The Gini coefficient increased by 1.2 points in the region – slightly more than the European average of 1.1. The Palma ratio also crept up slightly to 0.89 (2008) from 0.86 (2000), as did the 80/20 ratio rising to 3.7 (2008) from 3.56 (2000). The countries that saw the largest increases in inequality indicators in the run-up to the recession were Denmark, Finland and Iceland. Due to the high growth that Iceland achieved relative to its northern neighbours, it became a clear outlier. The top 10% share of income in the run-up to the recession exploded relative to the regional average (see figure 4), as a small group of people accumulated overinflated incomes before 2008 and drove much of the increases in inequality.

Figure 4 - Index change of Income quintiles –Northern Europe averages without Iceland (year 2004 = 100)



Source - CEB Staff Calculation based on Eurostat data

Table 4 - Northern Europe - Alternative inequality measures - Palma Ratio, 20/80 Ratio, and Risk of poverty

	Palma Ratio			Absolute Change in Palma Ratio		80/20 Ratio			Absolute Change in 20/80 Ratio		Risk of Poverty bottom 25% income quartile		Change	Risk of Poverty of 25% to 50% income quartile		Change
	2000	2008	2014	'00-'08	'08-'14	2000	2008	2014	'00-'08	'08-'14	2007	2014	'7-'14	2007	2014	'7-'14
Eastern Europe (avg-->)	1.169	1.303	1.247	0.13	-0.06	4.95	5.56	5.45	0.61	-0.11	86.9	91.2	4.25	35.9	34.0	-1.92
Northern Europe (avg-->)	0.860	0.890	0.858	0.030	-0.032	3.56	3.70	3.63	0.13	-0.07	63.8	64.8	1.04	8.4	7.6	-0.78
Denmark	0.85‡	0.86	0.99	0.01	0.13	3.58‡	3.60	4.11	0.02	0.51	66.6	68.9	2.30	11.1	13.8	2.70
Finland	0.80	0.93	0.89	0.13	-0.04	3.40	3.78	3.60	0.38	-0.18	72.9	72.3	-0.60	8.6	8.6	0.00
Iceland	0.83	1.00	0.77	0.16	-0.22	3.41	3.85	3.14	0.44	-0.71	53.9	44.5	-9.40	5.9	8.0	2.10
Norway	0.93	0.86	0.79	-0.07	-0.07	3.73	3.72	3.43	-0.01	-0.29	67.1	60.1	-7.00	10.5	3.9	-6.60
Sweden	0.89	0.80	0.85	-0.08	0.05	3.72	3.54	3.87	-0.19	0.33	58.4	78.3	19.90	6.0	3.9	-2.10
Southern Europe (avg-->)	1.197	1.205	1.296	0.008	0.091	5.12	5.22	5.79	0.10	0.57	92.3	93.5	1.25	15.4	27.1	11.65
Western Europe (avg-->)	1.015	1.094	1.048	0.08	-0.05	4.20	4.49	4.43	0.29	-0.06	77.3	80.2	2.96	10.84	12.50	1.66
Europe Average	1.10	1.18	1.16	0.09	-0.02	4.61	4.99	5.04	0.38	0.04	81.43	84.82	3.39	20.23	23.21	2.97

Source - Eurostat, World Income Inequalities Database, and CEB Staff Calculations

> - 0 Declining Inequality

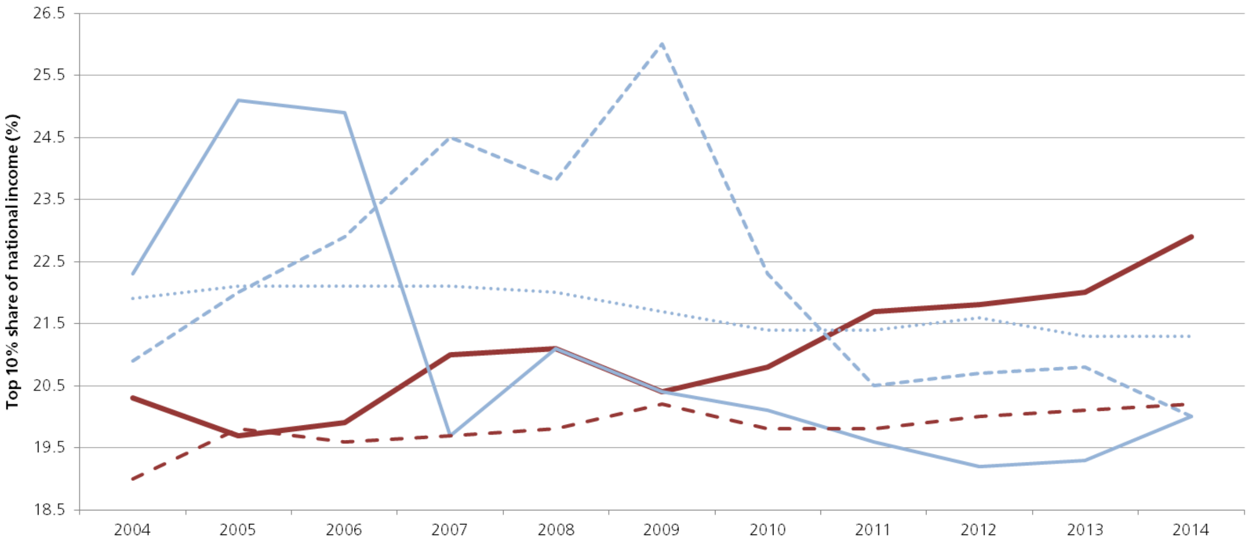
< + 0 Growing Inequality

Post-Recessionary period (2008-2014)

The wealthy northern region has not been immune from the effects of the 2008 financial crisis. Macroeconomic conditions began to deteriorate – annualised GDP growth dropped to an anaemic 0.5%. Real median incomes shrank by 1.3% annually; although this is exclusively due to Iceland's dramatic drop in real median incomes (the remaing Northern countries primarily saw real median income growth stagnate). Although Finland and Iceland both saw GDP contractions from 2008 to 2014, this only translated to real median incomes dropping for Icelanders (contracting at an annual rate of 8.2% from 2008 to 2015/16).

Encouragingly, the average regional inequality measures declined. The average Gini coefficient fell 0.6 points to 25.0. However, this did not make up for the 1.2 point increase in the pre-recessionary period (see Table 4). The Palma ratio also declined to 0.858 (2014), marginally below the 2000 level of 0.86. The 80/20 ratio also dropped by 0.07 points, but, much like the Gini, did not make up for the 0.13 increase prior to the recession. As of 2014, those in the top 20% still had 3.63 times more income than those in the bottom 20%[8]. However, Denmark and Sweden were regional outliers, Denmark continued to see inequality increase, with all inequality measures (Gini, Palma, 80/20) surpassing the regional averages in 2014 and being well above their 2000 lows (see Tables 3 and 3).

Figure 5 - Income share of top 10% since 2004, by country



Source - CEB Staff Calculation based on Eurostat data

[8] It is important to note that these figures are still among the lowest both in Europe and globally.

In part this is a result of the top 10% seeing their share of national income growing at a sustained pace, and reaching a peak over the last decade (see figure 5 above). On the other hand, during the boom years Sweden performed exceptionally well, decreasing on all inequality measures. However, since 2008, its Gini coefficient has increased by 1.4 points; the Palma ratio is slightly up by 0.05, and the 80/20 by 0.33. Although the overall figures for all three indicators were very low in 2014, the reversal is notable (see Tables 2 and 3).

Both Denmark and Sweden were marked by increases in the proportion of people in the bottom 25% quartile with disposable incomes below the at-risk-of-poverty threshold – Denmark at 68.9% (up 2.3% since 2007) and Sweden at 78.3% (up an eye watering 19.9%). However, the regional average still stood at a European low of 64.8% in 2014.

Table 5 - Southern Europe GDP/Real Median Incomes/Gini coefficient in Europe

	GDP - EUR millions - (in 2010 EUR)			Annualised Growth Rate of GDP - (2010 EUR)		Real Median Income (in 2015 EUR)			Annualised Growth Rate of Real Median Income		Gini Coefficient			Absolute Change in Gini coefficient	
	2000	2008	2014	'00-'08	'08-'14	2000	2008	2015/16	'00-'08	'08-'16	2000	2008	2014	'00-'08	'08-'14
Central-Eastern Europe (avg-->)	74 450.99	107 758.54	118 405.47	4.7%	1.6%	4 682	5 291	5 824	4.2%	1.2%	29.8	31.7	31.9	1.88	0.19
Northern Europe (avg-->)	193 582.48	230 885.48	237 808.74	2.2%	0.5%	27 596	30 760	27 782	1.4%	-1.3%	24.4	25.6	25.0	1.2	-0.6
Southern Europe (avg-->)	466 703.57	541 340.90	492 858.35	1.9%	-1.6%	11 419	13 564	12 242	2.2%	-1.3%	31.5	31.7	33.1	0.2	1.4
Cyprus	14 314.20	19 392.20	17 363.90	3.9%	-1.8%	15,512**	17 314	14 193	3.7%	-2.5%	29.0	29.0	34.8	0.0	5.8
Greece	189 901.30	249 880.40	184 873.20	3.5%	-4.9%	9 749	11 545	7 503	2.1%	-5.2%	33.0	33.4	34.5	0.4	1.1
Italy	1 555 551.00	1 669 421.00	1 542 924.00	0.9%	-1.3%	13 434	17 301	15 846	3.2%	-1.1%	29.0	31.2	32.4	2.2	1.2
Malta	5 391.60	6 534.60	7 769.90	2.4%	2.9%	10,516**	11 331	13 451	2.5%	2.2%	30.0	28.1	27.7	-1.9	-0.4
Portugal	167 145.30	181 997.20	169 108.10	1.1%	-1.2%	7 737	8 786	8 726	1.6%	-0.1%	36.0	35.8	34.5	-0.2	-1.3
Spain	867 918.00	1 120 820.00	1 035 111.00	3.2%	-1.3%	11 564	15 110	13 732	3.4%	-1.2%	32.0	32.4	34.7	0.4	2.3
Western Europe (avg-->)	815 242.40	942 750.74	979 608.90	1.8%	0.6%	20 428	23 394	25 916	1.7%	1.3%	28.7	29.5	28.9	0.8	-0.6
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> 2.5%	(High Growth)
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Southern Europe – Stubbornly high and growing inequality

The Southern European region, on average, is the most unequal part of Europe on all measures of inequality. The region faced a sharp economic downturn with GDP and real median incomes radically contracting in many countries after the onset of the 2008 financial crisis. Worryingly, inequality measures have been continually increasing since 2000, and have only intensified in their speed since 2008. While the risk of poverty for those in the bottom 25% is on the up in most regions, this has also extended to those in the lower-middle income categories, i.e bottom 25% to 50% (for all countries). All of this points to a region that is burdened with severe inequality issues which place pressures on social stability and cohesion.

The Pre-Recessionary period (2000 to 2008)

As was the case throughout Europe, Southern European economies had moderately healthy GDP growth prior to the recession at an annualised rate of 1.9% (except for Italy, which had a growth rate of 0.9%). Every country saw real median incomes increase, with a regional annualised growth rate of 2.2%.

The inequality measures all began slowly to edge up. The regional average Gini coefficient stood at 31.7 in 2008), up from 31.5 in 2008 (see Table 5). Greece, Italy, and Spain all saw their Gini coefficient increase (up by 0.4, 2.2, and 0.4 points respectively). Although Malta and Portugal saw declines, in both cases the Gini coefficient was at a relative high by European standards [especially Portugal, with a Gini coefficient of 36.0 (2000), declining to 35.8 (2008)].

The Palma ratio also crept up slightly, to 1.2 (2008) – see Table 6. The high Palma ratios throughout the region indicated the disproportionate amount of wealth that the top 10% obtained during the boom years, relative to the bottom 40%. Portugal and Greece were notable in that their Palma ratios stood at 1.495 and 1.303 respectively by the time the crisis hit (among the highest Palma ratios throughout Europe). The 80/20 ratio also saw a slight increase, with a regional average value of 5.22, meaning that the top 20% had over 5 times the wealth of those in the bottom 20%.

Post-recessionary period (2008 to 2014)

As is now well documented, the Southern European region was the hardest hit by the 2008 financial crisis. The macroeconomic indicators began to perform poorly from the beginning and the region has yet to recover. The region had an annualised contraction of -1.6% from 2008 to 2014. Aside from Malta (which did recover quickly after the recession) all other countries saw sharp GDP contractions (Greece was the worst performing, with an annualised contraction rate of -4.9%).

Table 6 - Southern Europe - Alternative inequality measures - Palma Ratio, 20/80 Ratio, and Risk of poverty

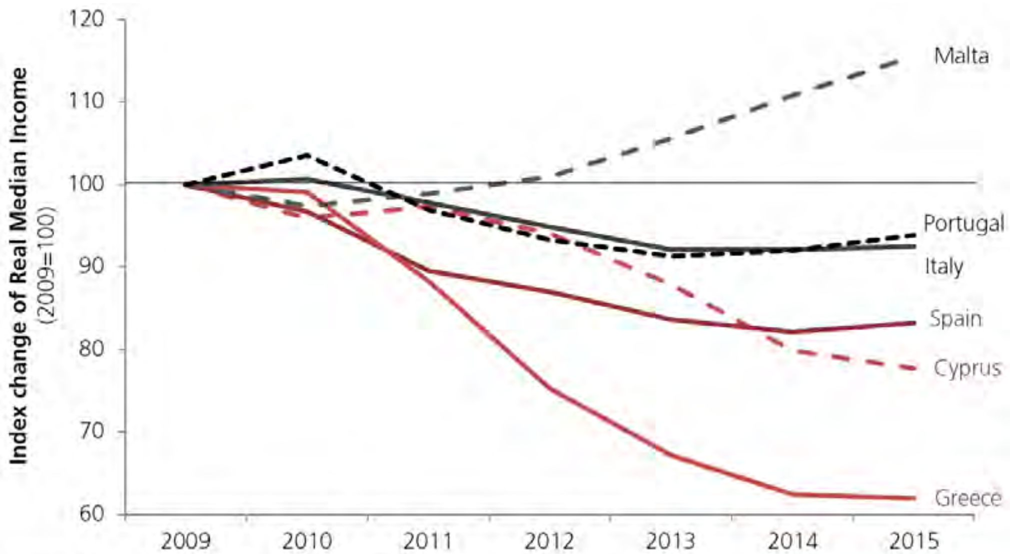
	Palma Ratio			Absolute Change in Palma Ratio		80/20 Ratio			Absolute Change in 20/80 Ratio		Risk of Poverty bottom 25% income quartile		Change	Risk of Poverty of 25% to 50% income quartile		Change
	2000	2008	2014	'00-'08	'08-'14	2000	2008	2014	'00-'08	'08-'14	2007	2014	'7-'14	2007	2014	'7-'14
Central-Eastern Europe (avg-->)	1.169	1.303	1.247	0.13	-0.06	4.95	5.56	5.45	0.61	-0.11	86.9	91.2	4.25	35.9	34.0	-1.92
Northern Europe (avg-->)	0.860	0.890	0.858	0.030	-0.032	3.56	3.70	3.63	0.13	-0.07	63.8	64.8	1.04	8.4	7.6	-0.78
Southern Europe (avg-->)	1.197	1.205	1.296	0.008	0.091	5.12	5.22	5.79	0.10	0.57	92.3	93.5	1.25	15.4	27.1	11.65
Cyprus	1.116	1.063	1.447	-0.05	0.38	4.4	4.3	5.4	-0.14	1.09	84.2	80.5	-3.70	22.5	28.2	5.70
Greece	1.200	1.303	1.369	0.10	0.07	5.7	5.9	6.4	0.16	0.54	100.0	100.0	*Maximum*	22.1	46.8	24.70
Italy	1.048	1.161	1.226	0.11	0.07	4.6	5.2	5.8	0.59	0.56	98.2	98.1	-0.10	14.5	20.8	6.30
Malta	-	0.986	0.987	-	0.00	-	4.3	4.0	-	-0.21	80.4	84.5	4.10	9	18.4	9.40
Portugal	1.421	1.495	1.384	0.07	-0.11	6.0	6.1	6.2	0.13	0.10	92.1	98.0	5.90	16	20.1	4.10
Spain	1.198	1.222	1.365	0.02	0.14	4.8	5.6	6.9	0.75	1.32	98.7	100.0	1.30	8.3	28	19.70
Western Europe (avg-->)	1.015	1.094	1.048	0.08	-0.05	4.20	4.49	4.43	0.29	-0.06	77.3	80.2	2.96	10.84	12.50	1.66
Europe Average	1.10	1.18	1.16	0.09	-0.02	4.61	4.99	5.04	0.38	0.04	81.43	84.82	3.39	20.23	23.21	2.97

Source - Eurostat, World Income Inequalities Database, and CEB Staff Calculations

> - 0 Declining Inequality
< + 0 Growing Inequality

Real median incomes are still below their 2008 peaks in many countries, with the regional real median income contracting annually by -1.3%. Real median worker incomes in Cyprus, Greece, and Spain remained in negative growth territory from the recession to 2014, and today appear unlikely to return to pre-recessionary levels any time soon (see figure 6). Spain initially saw a decline in real median income levels which halted and stagnated soon afterwards. Portugal and Italy are slowly recovering to their real median income levels achieved in 2008/2009, but growth has been slow. Only Malta has seen real median income levels grow well above the 2008/2009 levels.

Figure 6 - Index change of Real-Median Income in Southern Europe (2009 =100)



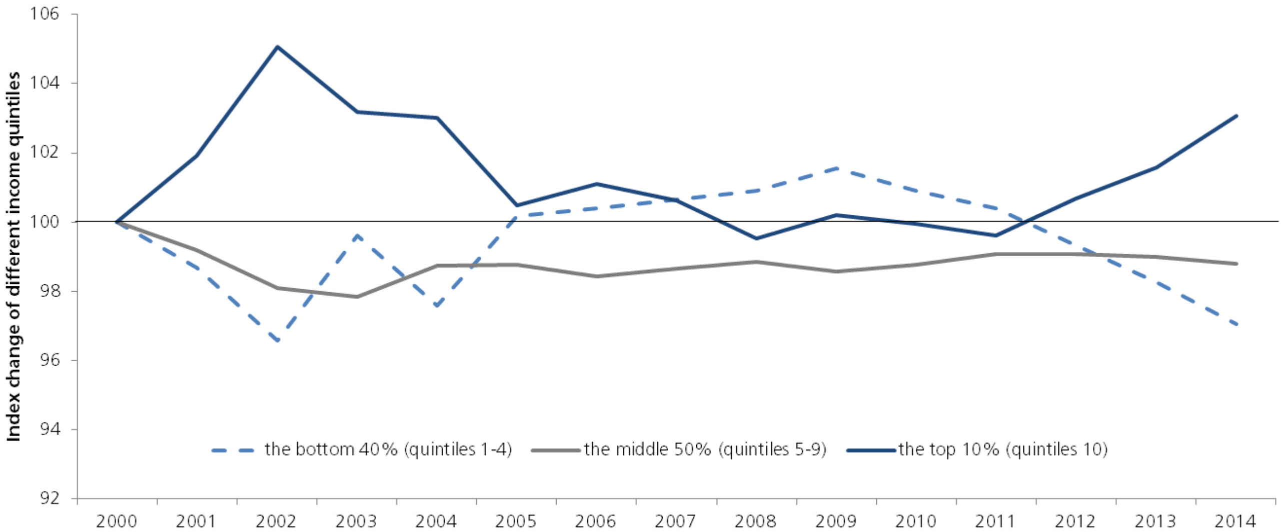
Source - CEB Staff calculation based on Eurostat data

Southern Europe in 2014 had the highest average regional scores on all inequality measures - the Gini coefficient, the Palma ratio, and the 80/20 ratio (see Tables 5 and 6). The average regional Gini coefficient increased by 1.4 points from 31.7 (2008) to 33.1 (2014). Likewise, the Palma ratio increased to 1.296 (2014) from 1.205 (2008), as did the average 80/20 ratio, up 0.57 points to 5.79 (2014) from 5.22 (2008). While average scores on all inequality measures were already increasing prior the recession, what is remarkable is how much larger the magnitude of change was from 2008 to 2014, in contrast to the increases from 2000 to 2008 – see Tables 5 and 6.

Malta was once again the exception with continually declining inequality indicators. Portugal also saw continued declines in the Gini coefficient (see Table 5), although from a relatively high level in 2000. The Palma ratio in Portugal declined from 1.495 (2008) to a historical low of 1.384 (2014); on the other hand, the 80/20 ratio continued to increase; 6.0 (2000) to 6.2 (2014).

The continually high levels of inequality seen in Southern Europe are very much a reflection of the large variations between the top 10% and the bottom 40% - see Figure 7. The top 10% saw their share of the national income at levels higher than 2000 right up to 2004, but then the share took a dip just before the financial crisis as the incomes of the bottom 40% began to increase. From the onset of the crisis, the bottom 40% share of income remained on a persistent downward path, well below 2000 levels. On the other hand, the top 10% share of wealth only increased, and is now on a trajectory to reach 2002 peaks, contributing to widening inequality.

Figure 7 - Index change of different Income quintiles – Southern Europe (year 2004 = 100)



Source - CEB Staff Calculation based on Eurostat data

Another worrying indicator is the significant increase in the proportion of people with disposable incomes below the at-risk-of-poverty threshold in both the bottom 25% quartile and the lower-middle quartile (25th to 50th quartile). The proportion of those in the bottom 25% at risk of poverty stood at 93.5% in 2014 (up by 1.25% from 2007). In both Spain and Greece, every person (100%) of those in the bottom 25% quartile were at risk of poverty in 2014. Italy and Portugal were close behind at 98.1% and 98%, respectively. However, what is alarming is that for *every* country, a quarter of people in the lower-middle income quartile (25% to 50%) are now at risk of poverty. In Greece that figure stood at 46% and in both Cyprus and Italy at 28.2% and 28% respectively. This indicates that the harsh economic reality has taken a toll not just on the poorest members of society, but has also affected those closer to the middle-income levels. No other region in Europe has seen such stark and large changes that threaten to make large portions of society materially vulnerable.

Western Europe – A gradual "equality recovery"

Western Europe is the wealthiest region on the continent, and has made substantial efforts to keep inequality relatively low - but in the run-up to the recession those inequality measures were on the rise. However, the region is also extremely heterogeneous, with economically strong but relatively (to the region) unequal nations such as the United Kingdom and Germany, and economically smaller but more equal societies such as Austria, Belgium, and Luxembourg. The region also includes economically volatile countries such as Ireland. The Western European story is also peculiar in the paths to or from lower equality. Some countries which saw declines in inequality in the run-up to the recession, saw a reversal after the crash (Germany, Ireland) while others which were becoming more unequal up to 2008, were now on a more encouraging path (France, Switzerland, United Kingdom, the Netherlands). However, the regional averages show a picture of inequality ticking up to 2008, and now slowly but gradually returning towards lower inequality.

Table 7 - Western Europe GDP/Real Median Incomes/Gini coefficient in Europe

	GDP - EUR millions - (in 2010 EUR)			Annualised Growth Rate of GDP - (2010 EUR)		Real Median Income (in 2015 EUR)			Annualised Growth Rate of Real Median Income		Gini Coefficient			Absolute Change in Gini coefficient	
	2000	2008	2014	'00-'08	'08-'14	2000	2008	2015/16	'00-'08	'08-'16	2000	2008	2014	'00-'08	'08-'14
Central-Eastern Europe (avg-->)	74 450.99	107 758.54	118 405.47	4.7%	1.6%	4 682	5 291	5 824	4.2%	1.2%	29.8	31.7	31.9	1.88	0.19
Northern Europe (avg-->)	193 582.48	230 885.48	237 808.74	2.2%	0.5%	27 596	30 760	27 782	1.4%	-1.3%	24.4	25.6	25.0	1.2	-0.6
Southern Europe (avg-->)	466 703.57	541 340.90	492 858.35	1.9%	-1.6%	11 419	13 564	12 242	2.2%	-1.3%	31.5	31.7	33.1	0.2	1.4
Western Europe (avg-->)	815 242.40	942 750.74	979 608.90	1.8%	0.6%	20 428	23 394	25 916	1.7%	1.3%	28.7	29.5	28.9	0.8	-0.6
Austria	253 712.60	300 467.60	307 508.90	2.1%	0.4%	20 149	21 988	23 466	1.1%	0.8%	24.0	27.7	27.6	3.7	-0.1
Belgium	311 462.80	363 833.20	378 068.20	2.0%	0.6%	19 701	19 992	21 905	0.2%	1.1%	30.0	27.5	25.9	-2.5	-1.6
France	1 771 701.00	2 019 351.00	2 068 624.00	1.6%	0.4%	18 021	20 467	21 653	1.6%	0.7%	28.0	29.8	29.2	1.8	-0.6
Germany	2 358 691.00	2 626 501.00	2 743 894.00	1.4%	0.7%	19 319	19 917	21 178	0.4%	0.8%	30.7	30.2	30.7	-0.5	0.5
Ireland	124 653.50	171 628.50	181 164.10	4.1%	0.9%	15 719	23 111	21 689	4.9%	-0.8%	30.0	29.9	30.8	-0.1	0.9
Luxembourg	30 789.10	40 059.90	45 093.10	3.3%	2.0%	31 396	34 762	35 270	1.3%	0.2%	26.0	27.7	28.7	1.7	1.0
Netherlands	554 727.40	647 158.80	643 023.70	1.9%	-0.1%	17 884	21 614	22 720	2.4%	0.6%	29.0	27.6	26.2	-1.4	-1.4
Switzerland	365 238.20	435 822.70	468 976.10	2.2%	1.2%	-	26 544	44 369	-	6.6%	28.5	31.1	29.5	2.6	-1.6
United Kingdom	1 566 206.00	1 879 934.00	1 980 128.00	2.3%	0.9%	21 239	22 156	20 989	0.5%	-0.7%	32.0	33.9	31.6	1.9	-2.3
Europe Average	352 849.09	419 193.89	417 248.70	2.2%	-0.1%	15 072	16 256	15 798	-	-0.4%	29.30	30.41	30.52	1.10	0.11

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The pre-recessionary period (2000 to 2008)

Unlike other parts of Europe, the Western region saw the lowest annualised GDP growth rate (1.8%) prior to the recession. Only Ireland and Luxembourg saw exceptionally high GDP growth rates (see Figure 7). However, the region did see moderate real median income growth (annually growing at 1.7%). Ireland was once again an outlier in the region, with real median incomes growing at 4.9% per year. The remaining countries saw either moderate real median income growth (the Netherlands, Luxembourg, France, and Austria) or stangante growth (Belgium, Germany, and the United Kingdom).

Inequality as measured by the Gini coefficient, on average, increased in the Western region, from 28.7 (2000) to 29.5 (2015) - the second most equal region in Europe in 2008 behind the North, but in fact much closer to Southern and Central-Eastern European regional averages. A number of countries strongly influenced the rise in the Gini coefficient (see table 7). The 2008 Gini coefficients for Austria (27.7) and Switzerland (31.1) saw the largest increases, up by 3.7 and 2.6 points, respectively. However, the United Kingdom set itself apart with a 2008 Gini coefficient of 33.9 (2008), a level higher than many Southern and Central-Eastern European countries.

The Palma ratio in the region increased slightly – up 0.08 points from 1.015 (2000) to 1.094 (2008). Only Germany and Belgium saw a decline – with the latter seeing the ratio drop below 1.0 (indicating that the bottom 40% were seeing a large increase in the share of the nation's income). The 80/20 ratio also increased for many countries and on average those in the bottom 20% in Western Europe had 4.5 times less than those in the top 20%. The United Kingdom was once again an outlier, with the region's highest Palma ratio of 1.36 and an 80/20 ratio of 5.06 – much closer to the Central-Eastern and Southern European averages.

Post-recessionary period (2008 to 2014)

Western Europe became economically stagnant after the 2008 financial crisis, with an annualised GDP growth rate of 0.6% - only Luxembourg and Switzerland saw moderate GDP growth. Every other country for the most part stood below or well below 1.0%, with the Netherlands contracting. The growth in real median incomes in many countries stagnated from 2008 – see Table 7. In Ireland and the United Kingdom real median incomes shrank, contracting annually by -0.8% and -0.7%, respectively.

Table 8 - Western Europe - Alternative inequality measures - Palma Ratio, 20/80 Ratio, and Risk of poverty

	Palma Ratio			Absolute Change in Palma Ratio		80/20 Ratio			Absolute Change in 20/80 Ratio		Risk of Poverty bottom 25% income quartile		Change	Risk of Poverty of 25% to 50% income quartile		Change
	2000	2008	2014	'00-'08	'08-'14	2000	2008	2014	'00-'08	'08-'14	2007	2014	'7-'14	2007	2014	'7-'14
Central-Eastern Europe (avg-->)	1.169	1.303	1.247	0.13	-0.06	4.95	5.56	5.45	0.61	-0.11	86.9	91.2	4.25	35.9	34.0	-1.92
Northern Europe (avg-->)	0.860	0.890	0.858	0.030	-0.032	3.56	3.70	3.63	0.13	-0.07	63.8	64.8	1.04	8.4	7.6	-0.78
Southern Europe (avg-->)	1.197	1.205	1.296	0.008	0.091	5.12	5.22	5.79	0.10	0.57	92.3	93.5	1.25	15.4	27.1	11.65
Western Europe (avg-->)	1.015	1.094	1.048	0.08	-0.05	4.20	4.49	4.43	0.29	-0.06	77.3	80.2	2.96	10.84	12.50	1.66
Austria	0.800	0.974	0.983	0.17	0.01	3.4	4.2	4.1	0.76	-0.04	65.0	75.8	10.80	9.4	10.4	1.00
Belgium	1.136	0.978	0.876	-0.16	-0.10	4.3	4.1	3.8	-0.25	-0.30	83.4	84.0	0.60	15.1	14.7	-0.40
France	1.000	1.125	1.093	0.13	-0.03	4.1	4.4	4.3	0.30	-0.14	72.1	72.6	0.50	10	9.9	-0.10
Germany	1.131	1.125	1.124	-0.01	-0.001	4.9	4.8	5.2	-0.12	0.41	81.3	85.7	4.40	12	10.4	-1.60
Ireland	1.095	1.106	1.150	0.01	0.04	4.8	4.4	4.8	-0.32	0.36	90.9	91.1	0.20	19.7	27.4	7.70
Luxembourg	0.917	1.004	1.018	0.09	0.01	3.6	4.1	4.5	0.53	0.32	70.3	84.3	14.00	4.5	4.3	-0.20
Netherlands	0.840	0.991	0.908	0.15	-0.08	3.5	4.0	3.8	0.50	-0.17	61.6	68.0	6.40	9.7	9.4	-0.30
Switzerland	1.023	1.183	1.095	0.16	-0.09	4.3	4.8	4.4	0.57	-0.39	76.7	71.6	-5.10	6	5.8	-0.20
United Kingdom	1.190	1.360	1.184	0.17	-0.18	5.0	5.6	5.0	0.62	-0.58	94.1	88.9	-5.20	11.2	20.2	9.00
Europe Average	1.10	1.18	1.16	0.09	-0.02	4.61	4.99	5.04	0.38	0.04	81.43	84.82	3.39	20.23	23.21	2.97

Source - Eurostat, World Income Inequalities Database, and CEB Staff Calculations

> - 0 Declining Inequality
< + 0 Growing Inequality

Encouragingly, inequality has declined from the 2008 highs. The regional average Gini coefficient dropped by 0.6 points to 28.9 (2014) from 29.5 (2008) – not entirely eliminating the increase since 2000, but gradually on a downward trend. Ireland saw its Gini coefficient increase after the onset of the financail crisis as a result of the deteriorating position of those in the bottom income brackets. Germany's Gini coefficient saw no net gain from 2000, to stand at 30.7 (2014), the same level as in 2000. Only Belgium and the Netherlands saw a continuing decline in the Gini coefficient from 2000, obtaining levels similar to the Northern region. France, Switzerland, the United Kingdom and Austria all saw declines in their Gini coefficients. However, only the United Kingdom saw a drop that was enough to negate the increase from 2000 to 2008 - and the United Kingdom in 2014 had a lower Gini coefficient than in 2000, although it is still the region's highest.

The regional average Palma ratio also dropped, down 0.05 points from 1.094 (2008) to 1.048 (2014) – still indicating that the top 10% on average hold more wealth than the total bottom 40%. Only Belgium, the Netherlands and Austria were below 1.0, although in the Netherlands the ratio is above the 2000 level. Austria, Ireland and Luxembourg were the three countries that saw their Palma ratios continuously increase from 2000.

The regional average 80/20 ratio also dropped slightly, by 0.06 points from 4.49 (2008) to 4.43 (2014). However, every country bar Belgium had an 80/20 ratio in 2014 that was either at or above the 2000 level – with Germany and the United Kingdom being the worst performers, with the top 20% on average having 5 times the income of those in the bottom 20% in 2014.

The share of people in the bottom 25% income quartile with real median incomes below the at-risk-of-poverty threshold increased by almost 3%, from 77.3% (2000) to 80.2% (2014). Almost every country saw the at-risk-of-poverty level increase for the bottom 25%, aside from Switzerland and the United Kingdom. However, the proportion of those in the lower-middle quartile (in the 25% to 50% quartile) that are at risk of poverty on average increased from 10.84% (2008) to 12.5% (2014). This was primarily led by Austria, Ireland and the United Kingdom – see Table 8. In the case of Ireland, this increase was the result of the harsh economic realities that emerged soon after the 2008 financial crisis. However, the United Kingdom is a paradoxical case. While the at-risk-of-poverty level dropped for the bottom 25% (albeit from a regional high of 94.1% in 2007 to 88.9% in 2014), the lower middle income quartile increased by 9% points from 11.2% (2007) to 20.2% (2014), once again showcasing a negative indicator for such a wealthy but relatively unequal society.

1.2 Why tackling inequality matters

In the context of Europe, the stubbornly low GDP growth rates since the onset of the 2008 financial crisis, and even to some degree prior to the crisis, have placed the inequality debate at centre stage, especially as peoples' incomes have stopped growing or shrunk, unemployment levels remain high, and the economic future of millions is increasingly uncertain. To understand why we need to tackle inequality, it is first important to understand its effects on a national level.

A national level perspective

As a result of the increasing academic and policy focus on inequality, a great deal of research has emerged working to understand the effects of inequality on the economic growth of a country.

Some economic studies have argued that inequality can have a positive growth effect by creating more efficient economies that are not distorted by higher equality-based taxes (Okun 1975, Chaudhuri and Ravallion 2006), and that the resulting redistribution policies can reduce the incentive to invest and work. The basis of the theory, which lies in a trade-off between redistributed policies (higher taxes and subsidies for equity) and growth, is highly controversial. In some instances, government investment policies, e.g. public infrastructure (roads, schools, etc.), can be considered as equity enhancing and also highly pro-growth (Ostry, Berg and Tsangarides 2014, CEB 2017). However, **when inequality becomes too high, it has a negative effect on the health of the economy; it can deter investment, make an economy less resilient to economic shocks and even bring about political and social instability** (Berg and Ostry 2011). Moreover, theories that advance that inequality can enhance growth fail to appreciate the social welfare structure of most European economies, in which the economic gains of a nation work to benefit the whole of society, especially those at the bottom. The rise in inequality and harsh recent economic realities for many people around the continent require an understanding of how to halt the negative effects of inequality.

From an economic viewpoint, empirical research has shown the negative effect of inequality on growth[9]. Both recent historical and present literature has shown that there is a high and negative correlation between GDP growth and inequality (Berg and Sachs 1988) and that a high Gini coefficient negatively affected aggregate growth in countries (where data were available) between 1960-1980 (Pyo 1987). One piece of work attempted to precisely quantify this relationship, indicated that when a country's Gini coefficient increased by three points, GDP dropped by 8.5% over 25 years, i.e. 0.35% a year (OECDb 2014).

Other studies have shown that those countries with greater inequality (either wealth or income) tend to see higher rates of taxation (as voters become fed up with inequality and demand higher tax rates), which can negatively affect the business environment, investment levels, and thus in turn economic growth (Alesina and Rodrik 1994, Alesina and Perotti 1993). In a similar vein, the incentive to accumulate productive factors that lead to economic growth, diminish in unequal countries where policies are implemented to limit disproportionately large private acquisition of those factors (Persson and Tabellini 1994).

More recent work has tested the robustness of previous work with more consistent data, and when examining net incomes (i.e. after re-distribution has been accounted for), there is a significant and negative correlation between inequality and growth (Knowles 2001). Additionally, research has proven that inequality has a positive economic effect for those at the top of the income distribution, and a negative effect for those nearer the bottom of the distribution (Voitchovsky 2005). Other work has examined inequality from a time-series

[9] (Duflo and Banerjee 2003) Are not entirely conclusive in their findings, and show that changes in inequality in either direction may have a negative effect on growth – an inverted U-curve relationship. However, this was a study which was more about examining data limitations which were addressed in subsequent studies.

perspective and found that inequality may generate quick and brief economic gains in the short and medium-term[10] (Halter, Oechslin and Zweimuller 2011), but the long-term effects materialise more slowly and negatively affect economic growth; inequality may result in higher redistribution policies, i.e. taxes, decreasing saving and investment levels; it may decrease the productivity of government investment projects (as voters prefer more redistribution policies); and it can increase political instability.

Increased income inequality can also have an effect on the economic stability of a country. The duration and robustness of GDP growth is positively associated with more equal societies, while unequal societies have shorter and more volatile growth periods – a 10% decline in inequality increases the expected length of a growth period by 50% (Berg and Ostry 2011). Further work, which controls for country level redistribution policies, corroborates the finding that shorter growth spells in unequal societies are unsustainable; a one-point increase in the Gini coefficient is linked to a 6% higher risk of a growth spell ending the following year (Ostry, Berg and Tsangarides 2014). Furthermore, countries with higher income inequality often experience more acute debt crises that are linked to worse performing unemployment and social indicators (Berg and Sachs 1988). More unequal societies have been found to be in a weak position to respond to external economic shocks (e.g. deteriorations in terms of trade) - especially in developing countries, where the interaction between social divisions and the institutions of conflict management are weakest (Rodrik 1998).

Growth may be affected by inequality via other channels. Unequal societies might have a political economy structure in which the rich may utilise their influence to affect redistribution policies through the tax system, which increases their wealth and disincentivises investment (Alesina and Rodrik 1994). Moreover, political influence by the rich may manifest itself in more overt ways, through lobbying, "buying" the votes of legislators, and other corrupt behaviour, all of which distorts resources away from productive investment and hence from growth (Barro 2000). Societies that have been persistently unequal may be susceptible to political instability as social movements arise in response to the structure of the political economy that has generated income inequality (Benabou 1996).

1.3 What has driven inequality [11]

There is no single factor that has contributed to the rise of inequality within Europe. Instead, the confluence of a number of factors has contributed to the current state of affairs. They include but are not limited to: **technological change**, **globalisation, country-level economic reforms** (reforms include financial service liberalisation, labour law changes, diminished unionisation, and changes in redistribution policies/taxes).

Most European countries have had to face these dynamic forces in the last several decades and, over time, have contributed to an economic system which has exasperated growing inequalities. Central-Eastern European countries are slightly more complex, as inequalities arose sharply in some countries during the transition from socialist to market economies (explained in more detail below).

All three of the above overarching factors occurred at the same time so it is difficult to separate them from one another. For instance, advances in skill-based **technology** have had a transformative effect on increasing productivity and the well-being of people around the world, but it has created a skills premium. As technology use increases, this in turn raises the demand for capital and skilled labour over low-skilled labour, contributing to an increase in labour income inequality (Dabla-Norris, et al. 2015). Earlier work in the field postulated that as technologies are introduced/innovated which complement the increase in skilled labour (higher tertiary education completion), the continued skills upgrading of skilled workers translates into higher incomes at the cost of the lower-skilled and those less likely to benefit from technological change (Acemoglu, 1998). Employers are more willing to pay a higher wage premium to the high-skilled labour that is able to use new technologies and increase productivity, while those who cannot do so see declines in wages or loss of jobs (Machin 2001).

[10] through higher savings, financing of projects using the concentrated personal wealth of the higher-income group, when credit markets are imperfect, and when there are increased incentives from innovation to meet "high-end" product demand.

[11] It is important to note that this section is meant to provide a broad overview of the debate on income inequality and this is a non-exhaustive literature overview. The literature on the topic is extensive, and the authors of the report emphasise that granular aspects of the debate may be omitted.

The automation process has continued to widen the pay gap and skills premium, as the modern labour market favours high-skilled analytical individuals (Krueger 2012).

Globalisation is the other often cited, but not fully supported, explanation for increased inequality, as low-skilled labour came under increased competition as trade barriers reduced and more use was made of low-skilled labour abroad. The theoretical model primarily builds on the Heckscher-Ohlin and Stolper-Samuleson theory, in which the abundant low skilled labour in developing countries produces goods that are more cheaply and easily imported and exchanged for high-skilled products in developed countries (as trade barriers decrease between the two countries). In such an exchange, the low-skilled labour in the developed country lose out as their products are displaced by cheaper rival imports, while the wage premium of the high-skilled labour in the export sector (of the developed country) increases, which leads to higher inequality[12] (IMF 2007) .

However, much of the existing empirical work has not been wholly decisive in supporting the relationship between trade and income inequality. On average in the world, international trade has influenced about 20% of the rise in inequality (WTO 2008). Most of the work on the topic finds a weak relationship – trade liberalisation has less of an impact than technology, and labour reforms, which have contributed to the lion's share of displacing low-skilled labour (OECD 2014, IMF 2007). As summarised by the Gini Project (Salverda W. 2011), trade was not the primary determinant of inequality (especially wage inequality) because it could not "[account] for the increase in relative demand for skilled labour because the weight in total industry of the traditional, low skill intensive production has not significantly changed and furthermore almost all sectors have become more skill intensive". However, the limited increases in inequality due to trade often occurred in countries where employment protection was weakest (OECD 2015).

In many countries, the **regulatory changes** that started in the 1980s and continued up to the 2008 financial crisis, played a vital role in how technological changes and globalisation alter income distributions (OECD, 2011). Many countries did undertake regulatory changes that weakened labour market protections, which in turn resulted in declining minimum wages and unionisation, and an increase in temporary workers (United Nations, 2013; OECD, 2011). In particular, the diminished role of unions affected the collective bargaining power of workers, which contributed to wage inequality (Frederiksen and Poulsen 2010). The diminishing of labour market protection created labour market segmentation in which the position of low-skilled labour declined and made it more difficult to move into more stable work (OECD 2015). These reforms have been championed because they boosted overall employment and economic growth[13], but it is increasingly clear that they also widened income inequalities (OECD 2015).

Redistribution policies have also changed in many countries. Advanced economies can often mitigate inequality via progressive tax systems and social transfers/government expenditure (CBO 2011). However, in many countries the tax systems have become less progressive; top-marginal tax rates are declining, allowing the top income earners to accumulate more income and capital wealth (Dabla-Norris, et al. 2015, Hungerford 2013). Work has shown that countries that redistribute less are more unequal – a relationship that also holds in some developing countries - on the other hand, progressive tax systems that finance investment and social protection help reduce inequality (Benabou 2000). In fact, government expenditure and benefits, typical of European welfare states, may be more effective in reducing inequality than progressive tax systems alone but the causal effect of either approach is not clear-cut and thus difficult to identify (Doerrenberg and Peichl 2012) – however it is important to note that such expenditure has been on the decline in much of Europe since 2008 (CEB 2017).

[12] It is important to note that, in the model framework, in developing countries inequality will decline, as the wages of the low-skilled workers producing the exporting goods (i.e. goods the developed country is importing) will begin to increase relative to the more scarce high-skilled labour industries (which are now competing with the imports of the high-skilled goods from developed countries) - thus reducing the income disparities between the low and high income workers.

[13] As product market regulations and flexible labour laws were enacted, markets for goods became more competitive and labour markets more adaptable and efficient – with the stated adverse effect of widening the wage gap.

Central-Eastern Europe - A historical overview of inequality

Although Central-Eastern European countries have experienced many of the same drivers of inequality as explained above, the region's particular history of transitioning from socialist to market economies warrants a brief section for a historical perspective. **During the socialist era, income inequality was much lower than present day levels (average incomes were also lower), and almost all economies saw an uptick in inequality once the transition process began** (Milanovic 1998, Bandelj and Mahutga 2010). The widely accepted rationale as to why traditional income distribution changed is that it was due to the transition to market economy systems which brought about economic and societal changes; liberalisation of capital, goods, and services; labour market reforms (akin to the ones in the general discussion above); integration into regional and international markets; privatisation; the creation of a new and affluent class (Simai 2006, Milanovic and Ersado 2008, B. Milanovic 1998).

The initial transition to the market economy and the subsequent rise in inequality in many countries was tolerated as overall economic conditions improved, but as citizens became more fully aware of the new economic system (and the resulting inequality) and their place within in it, such tolerance began to diminish (Grosfeld and Senik 2010).

One motive for the increase in income inequality in the region arose from the loss of stable jobs and incomes provided by a large and "egalitarian" state sector. The middle class, which historically provided the state sector employees, was reduced and wage differences widened; individuals either moved into the newly emerging and competitive private sector or into the unemployed/low-skill sector (B. Milanovic 1999). Ivaschenko's (2001) empirical work supported the idea that rapid growth in the private sector did usher in structural changes which increased income inequality[14]. The skills premium (see discussion in previous section) also played a role in inequality, as technological change and trade liberalisation changed the type of labour demanded (higher skilled) in transition economies which in turn affected wage distributions (Aghion and Commander 1999).

The privatisation process of previously publicly provided infrastructure services (electricity, water, railways/roads, etc.) and the subsequent introduction and increase in fees, negatively affected the income distribution of those in the bottom deciles (Milanovic and Ersado 2008). Additionally, many economies also had substantial "monetary overhang"[15] and thus, in countries where prices were liberalised, inflation rates increased substantially (by a factor of 2 or 3 in some instances), eroding wages and pensions (Flemming and Micklewright 1999).

Inequality was also exasperated by the informal economy in some countries, which resulted in reduced tax revenues. In response, governments cut social spending programmes and increased taxes on existing formal activity, pushing up inequality as well and driving more economic activity into the informal sector (Rosser, Rosser and Ahmed 2000). The rural and urban divide also broadened, as those in the rural sector (mainly agricultural sector) faced a number of challenges, including the end of subsidies and government policies to ensure urban-rural equity, and increased competition from farm imports (Milanovic 1998).

Other public policy choices influenced inequality measures. A lower provision of educational spending meant a failure to meet the higher-skill demand of the labour market, which increased wage gaps (Aghion and Commander 1999). Investment and privatisation policies that promoted foreign (FDI) over domestic investment, tended to have a negative relationship towards inequality (Bandelj and Mahutga 2010, Mihaylova 2015). In some countries, ethnic divisions arose/renewed and these groups experienced social and economic exclusion, increasing within-country inequality (Bandelj and Mahutga 2010).

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14 Ivaschenko (2001) stipulated that the "privatization may have hefty longer-term rewards by creating new jobs and fostering economic growth. – a similar perspective of other scholars who argued that the competitive product and labour market reforms in the rest of Europe (and other advanced economies) resulted in greater economic growth and job creation.

15 "A monetary overhang emerges when individuals jointly hold more money than they wish and all adjustment processes are rendered unavailable through price and quantity controls. While monetary overhangs can in principle be eliminated through increased real money demand, their magnitude in practice typically implies a resolution through a reduction in real money supply through a cut in the nominal money supply or through higher prices…" (from the New Pelgrave Dictionary of Economics).

Inequality in the run-up of the 2008 financial crisis

A large amount of work has emerged which demonstrates that the 2008 financial crisis ("The Great Recession") resulted from a mix of extensive financial de-regulation, persistent wage stagnation, and high levels of inequality (United Nations 2013). **Inequality helped pave the way for the financial crisis in two ways: high low-income household borrowing and the increased wealth share of top-income groups.**

Part of the explanation is that increasing inequality tends to be related to consumption expenditure and thus aggregate demand (Stockhammer 2013). Poorer households have a higher marginal consumption propensity than the rich (i.e. the poor are likely to consume more when disposable income increases relative to the rich), however in many countries the incomes of the poorer (and in some cases the middle-income) households did not increase. Thus, they increased borrowing levels as a means to maintain or increase their level of consumption[16], during an era when wage growth stagnated (Rajan 2010, Reich 2010, Kumhof and Ranciere 2010). The increase in debt-driven consumption resulted in a decline in savings rates among the lower and middle income groups, and contributed to creating a cycle of further credit demand (United Nations 2013). Simultaneously, while large-scale financial liberalisation measures (and resulting asset prices bubbles) may be the root cause of the crisis, the growing inequality created political pressure to continue easy access to credit (despite unsustainable debt-to-income ratios and wage stagnation) in an effort to keep growth growing (Rajan 2010).

Inequality also rose as a result of the top income brackets seeing their share of overall wealth increased. The higher-income individuals were more likely to demand and hold risker financial assets, and to utilise liberalised financial intermediaries (e.g. hedge funds), which helped increase top-income bracket wealth (Stiglitiz 2012, Rajan 2010, Reich 2010, United Nations 2013). Kumhof and Ranciere (2010) modeled how the higher-income households recycled their growing income via financial intermediaries to lower and middle class households (through lending), thus supporting the debt-driven consumption explained above. The size of the financial sector increased, as did the number of new financing methods to meed this demand (sub-prime derivatives). However, as incomes failed to grow, the low and middle income households increasingly held disproprotionaly large debt burdens, and the risk of a major financial crisis heightened and eventually occurred. This created a sitution in which inequality levels grew or formed as the disparity between top and bottom income quintiles grew.

As a UN (2013) report noted the impact of the financial crisis affect on inequality and wider economic conditions:

> "The complex relationship between inequality and growth is also illustrated by the potential of economic crises to create, or deepen, inequalities. The financial and economic crisis impacted many countries by increasing their fiscal deficits, limiting ther policy space and their capacity to respond to future shocks. In particular, the crisis also spurred the sovereign debt crisis in Europe, to which policymakers have responded by implementing austerity measures. This has not only decreased growth rates in Europe but has affected other economies through reduced trade and aid."

[16] Those in the lower-income groups consume their income more heavily, and this group's falling share of income leads to debt-driven consumption (United Nations 2013).

Chapter 2: The Background of Inequality

The remainder of the study will examine the inequalities that exist in three sectors: ***education, housing, and health.*** This is an introductory chapter showing why inequality matters on an individual level and its root causes and symptoms.

The chapter is divided into two parts:
- **Section 2.1 –** Gives a brief overview of the economic work that has been done to showcase the socio-economic costs that arise in highly unequal societies.
- **Section 2.2 –** Provides a quantitative introduction that showcases how difficult it is to overcome inequality in Europe as a result of limited social mobility (via education), financial burdens (high housing costs) and health disparities between the rich and poor.

2.1. The socio-economic costs to inequality

Inequality has multifold negative effects on the socio-economic environment of a country. Evidence has shown that inequality reduces human capital formation, which weakens educational attainment for those at the bottom; it reduces social mobility and hinders the acquisition of new skills (OECDb 2014). Pickett and Wilkinson 2009 identified a number of socio-economic problems that were more common in less equal societies – such as children's educational performance, life expectancy and infant mortality, level of trust, obesity, mental ilness, social mobility, homicides, and imprisonment rates.

Inequality can create a situation where the poor are excluded from the gains made during high growth periods and can make it difficult to reduce poverty levels. Although economic growth is the most significant force to decrease poverty, in highly unequal societies, growth has become a less effective means of reducing poverty, even if the income distribution does not worsen (Bourguignon 2004). Building on this work, an empirical study of 66 countries from 1970-1998, showed that the effect of growth in reducing absolute poverty was considerably stronger in societies that also saw declines in inequality, than those that did not (Grammy 2006).

The social mobility of an individual can be challenged in unequal societies. The level of intergenerational social mobility (improving one's life relative to parents) is an indicator of how equal a society is in giving people equitable access to opportunities to build their human capital (United Nations 2013). The wealth that an individual possesses at birth (typically from parental incomes) has a significant effect on that individual's life-cycle, via educational attainment, health outcomes, etc. For instance, when credit market imperfections exist within a country, income inequalities are exasperated as low income individuals are unable to access financing to fund their education, which negatively effects their human capital growth and thus individual, and national, economic growth (Berg and Ostry 2011, Stiglitiz 2012).

Inequality is most evident within population sub-groups (gender, race, nationality, etc.), and remains a core issue for work in the field. There is still persistent inequality between genders, as women are less likely to earn the same wages as men, less likely to advance in their careers, and are more likely to work in part-time work (OECD 2017). Inequality tends to negatively affect immigrants, who see much lower economic and socio-economic outcomes than native populations – however this in part reflects the education of the immigrant, the length of stay in a country, and the integration policies of a country (OECD 2017). The Council of Europe Development Bank will be undertaking a series of papers which will examine gender inequality, youth inequality, and immigrant inequality in more detail in the near future.

2.2 The challenges of the bottom income groups

The debate on inequality tends to focus on two elements: on what should be done to minimise the wealth acquisition of those at the top of the income distribution when it comes at the cost of those at the bottom; or how to help those at the bottom obtain the necessary opportunities to obtain a higher income. Both should be addressed within a society to ensure equality, however this paper and the CEB will focus on the second point.

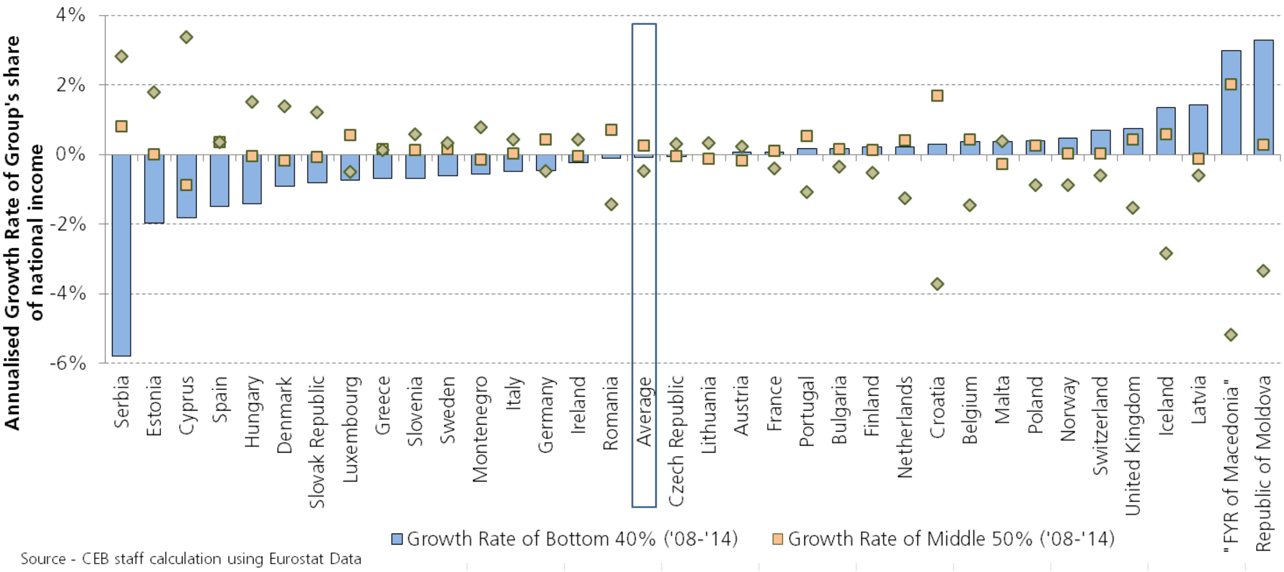
The effort is to understand what needs to be done to overcome those factors that are keeping the most vulnerable in Europe from improving their condition.

Income inequality enhances vulnerability in two ways. Firstly, and most obviously, those in the bottom income quintiles tend to face income constraints that make it difficult to provide for basic necessities. Secondly, and more importantly, those at the bottom face rising non-income related inequalities, which make overcoming income inequality more difficult (e.g. lower educational outcomes which negatively affect future earnings). Thus, the debate on inequality from this paper's perspective is not how to re-distribute current wealth, but on what necessities and opportunities need to be provided to those at the bottom to overcome income inequality.

Lack of mobility at the bottom

The bottom income qunitiles in many Europe countries face clear challenges in attempting to overcome income inequality constraints. Since the onset of the crisis, the growth rate of the bottom 40% in most European countries has entered into negative territory - on average the bottom 40% have seen an annualised contraction rate of their income share drop by -0.08% - see figure 8 below. In total seventeen countries have seen the national income share of the bottom 40% register annualised negative growth. A number of other countries also saw the bottom 40% income share of growth either completely or nearly stagnate from 2008 to 2014. Typically, when a country sees the bottom 40% income share contract, the top 10% tend to see income share grow faster (and vice versa).

Figure 8 - Annualised Growth Rate of income group's distribution of national income from 2008 to 2014



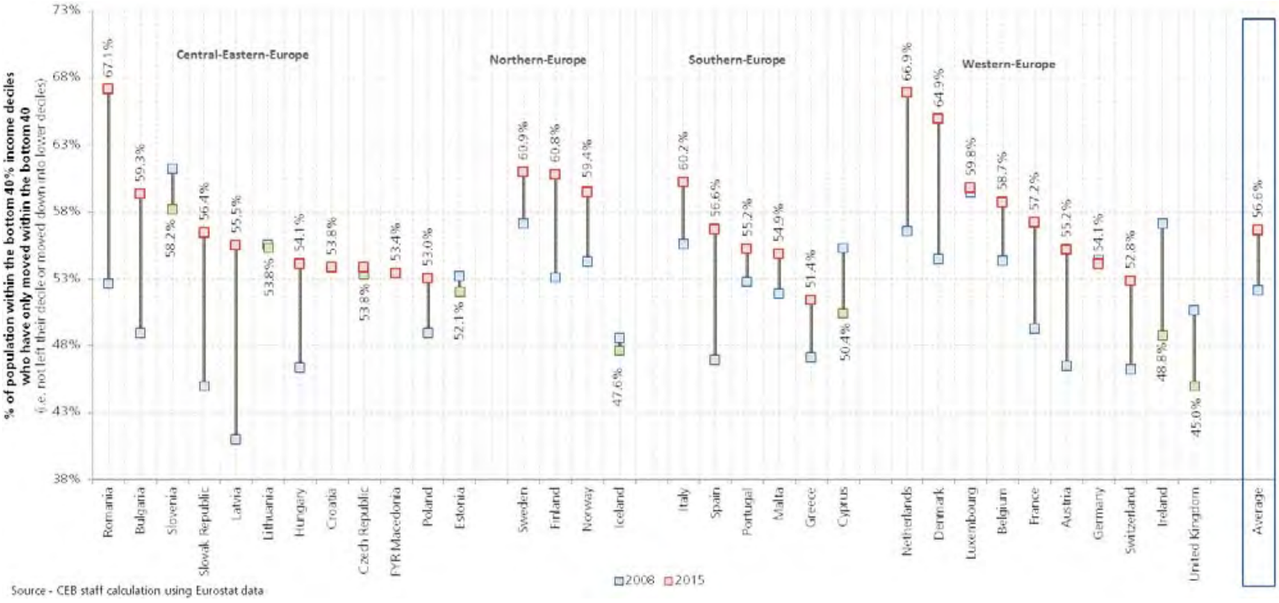
Source - CEB staff calculation using Eurostat Data

Nearly 57% of those who are in the bottom 40% were likely to stay in one of the four bottom income deciles within the next three years in 2015 – see figure 9 below. This was an increase from 52% in 2008, with almost every country[17] seeing an increase in this lack of mobility. Societies that can provide the necessary foundations on which people can build more prosperous lives, tend to see relatively low levels of income stagnation. Between 2008 and 2015 no single region fared better than another in terms of change in the ability of the bottom 40 to improve their current situation – although a few country cases do exist (Estonia, Iceland, Cyprus, Ireland, and the UK).

This variable is slightly limited in that an income decile by virtue represents a proportional division of national income, and thus if the whole "economic pie" grows, being stuck in your decile may not necessarily mean your income is not growing. However, in Europe's present situation this is not the case. The total "economic pie" in many economies is not growing (and in a few is shrinking), and in the economies where there is growth, typically most of the new wealth is going to the top income brackets.

[17] When data is available.

Figure 9 - The % of the population in the bottom 40% who have been unable to move out of the bottom 40% within three years

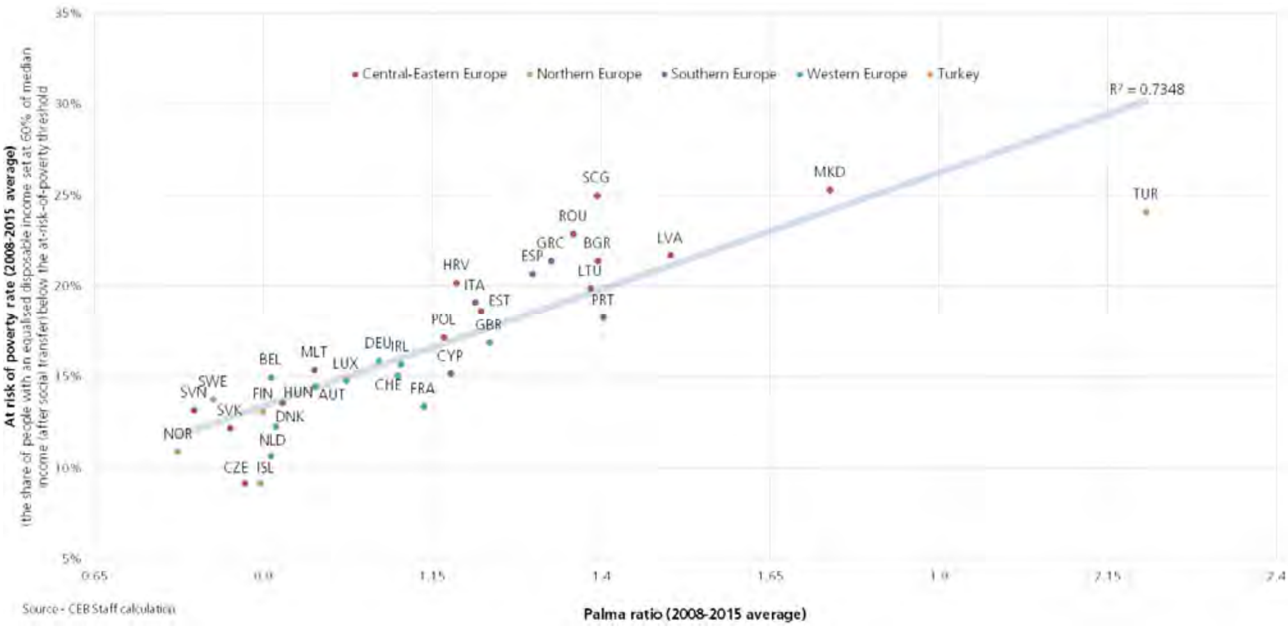


Source - CEB staff calculation using Eurostat data

As was outlined in section 1.1, the share of the population in the bottom 25% with disposable income below the at-risk-of-poverty median income has increased in many countries since the onset of the 2008 financial crisis. Figure 10 below showcases the average Palma ratio (the ratio of national income of the top 10% relative to the bottom 40%) of a country from 2008 to 2015 relative to the 2008-2015 average at-risk-of poverty ratio of people with income 60% of median equalised disposable income (after social transfers)[18].

What is immediately apparent is that there is a positive and upward correlation between the Palma ratio (meaning the top 10% have disproportionately more than the bottom 40%) and the at-risk-of-poverty levels – i.e. an increase in the Palma ratio is correlated with the at-risk-of-poverty levels within a country. Naturally, nations which saw sever economic downturns tended to have both the highest Palma and at-risk-of-poverty ratios. Those with Palma ratio's above 1.0 and high at-risk-of-poverty rates were primarily found in Southern and Central-Eastern European and a handful of Western European countries.

Figure 10 - Scatter Plot of '08-'15 average Palma and at risk of poverty rate



Source - CEB Staff calculation

[18] Methodological note - The 60% of median equalised disposable income threshold is the same threshold that is set for the proportion at-risk-of poverty by income quartiles in the tables of section 1.2.

Financial burdens and socioeconomic costs of the bottom Income quintiles

Although there are multiple reasons as to why income inequality persists in Europe (see chapter 2), this paper will focus on three specific components that affect those in the bottom income groups:

- Education
- Housing
- Health

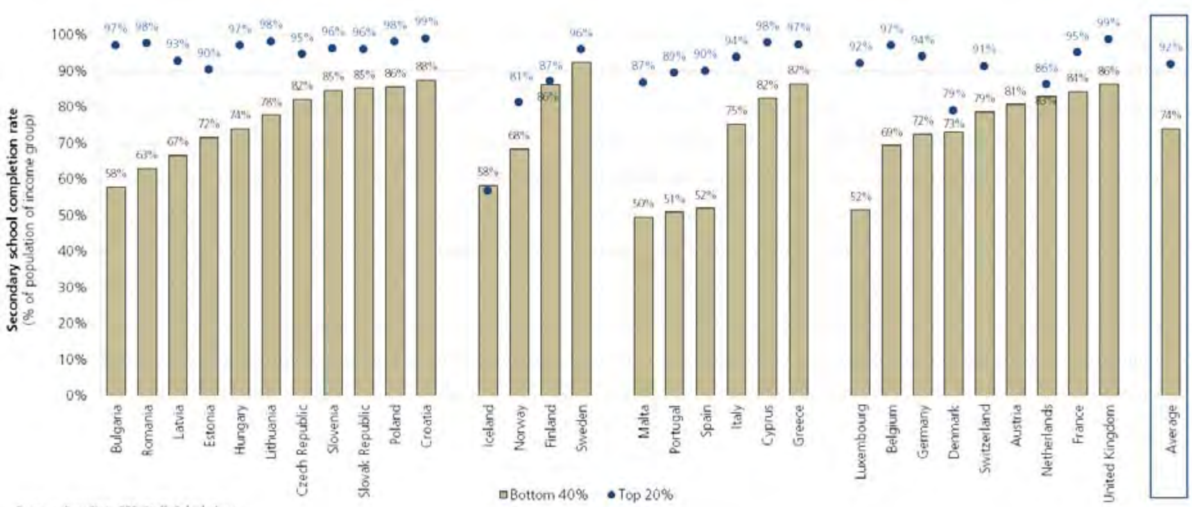
All three components are interconnected, as they provide what can be considered the "basket" of basic components for normal living – and typically a failure in one area may have adverse effects in (one or both of) the others (e.g. poor housing conditions may affect health outcomes and even have negative effects on children's learning outcomes). Also, each component has individual elements that either contribute to exasperating existing income inequalities (e.g. the financial stress of unaffordable housing) or to preventing the ability to overcome income inequality (e.g. educational attainment, which is a chief driver of a person's future income).

This section serves as a brief introduction to showcase how income inequality and lack of mobility (explained above) is only being exasperated by the insufficient support of basic services for those at the bottom in these three sectors. The CEB has published in depth reports on inequality on all three topics (education, housing, and health).

For instance, in the case of education, on average, **in Europe only 74% of those in the bottom 40% have completed secondary education** – see figure 11 below - while 92% of those at the top 10% have done so. Some Southern Europe states are the worst performing; in Malta, Portugal, and Spain only about 50% of the bottom 40% have completed secondary education. In is important to note that many transition countries in Central-Eastern Europe (namely Croatia, Poland, Slovak Republic, Slovenia, and the Czech Republic) tend to see bottom 40% secondary completion rates that are at, or in some cases, higher than Western and Northern European countries – a positive effect of historic socialist regimes working to achieve universal basic education for all people.

However, the clear picture emerges, that throughout Europe there is a wide discrepancy concerning years of educational attainment by different income groups (this figure only widens when examining tertiary education). Although the disparity in completion rates is not the entire story[19], it does showcase an important reality – those who fail to complete formal compulsory education often see intensified adverse effects from inequality. **A person with a low level of education often earns less income and may tend to see a number of negative socioeconomic outcomes. Furthermore, it exacerbates intergenerational mobility** (more in CEB 2017 "Educational Inequality" report), **as children of poorer educated parents often perform worse in school, creating a cycle of educational under-performance**. Lack of education can lead individuals to be unprepared and ill equipped to adapt to the challenges of the future economy. Education thus plays an important role in helping an individual obtain the skills and thus the opportunities to overcome income inequalities.

Figure 11 - Secondary school completion rate of bottom 40% and top 10%

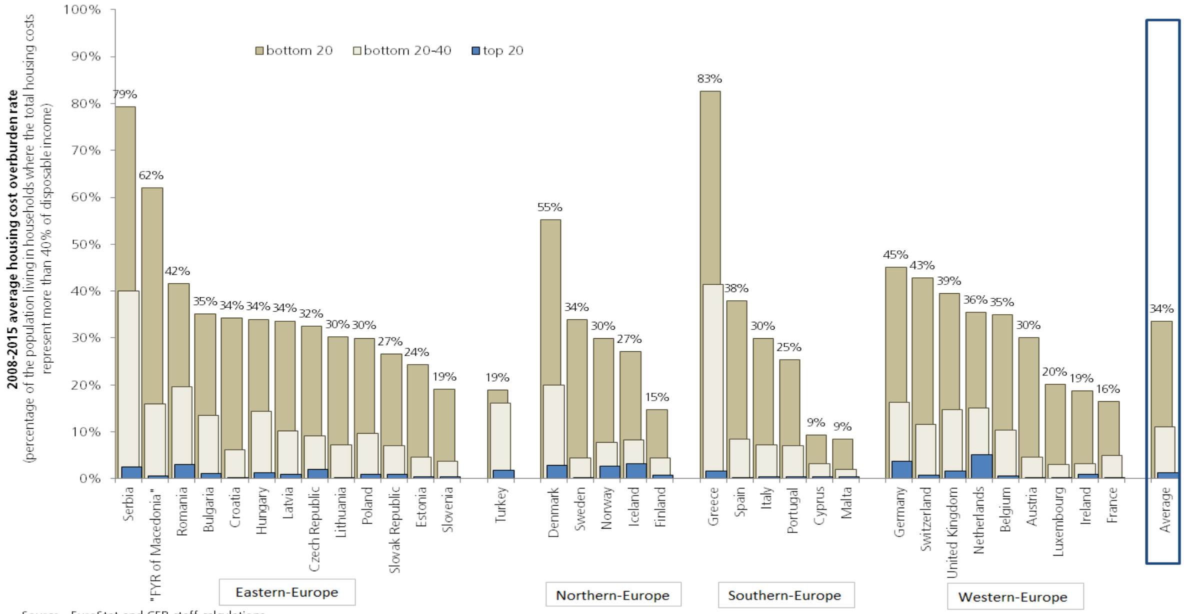


Source - EuroStat; CEB Staff Calculations

19 Quality of education is also very important, and is explored in more detail in CEB 2017 "Educational Inequality".

While education is a long-term solution to helping overcome income inequality, housing is both a short and long-term challenge towards the same goal. Adequate and affordable housing for those in the lower socio-economic groups is well documented and since the recession those in the lower income quintiles have seen the cost of housing become financially unbearable. **For 34% of those in the bottom 20% the cost of housing has placed critical pressure on their finances** (when housing accounts for more than 40% of disposable income) – see figure 12.

Figure 12 - 2008-2015 average housing cost overburden rate, by bottom 20, bottom 20-40, and top 20



Source - EuroStat and CEB staff calculations

This is in direct contrast to those who are just one income group up (bottom 20-40%) where the housing cost over-burden rate is 11%, and the top 20% income group where only 1.3% are overburdened. In some countries such as Greece and Serbia, four in five people in the bottom 40% find housing costs to be financially burdensome.

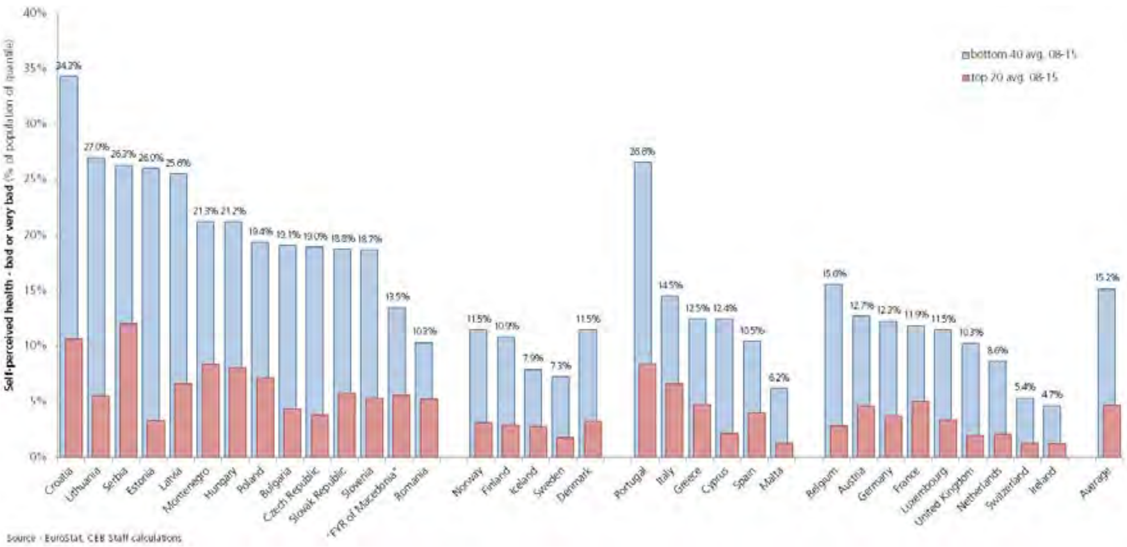
The figure above illustrates the imperative of providing solutions for those in the bottom income groups to find and/or maintain affordable housing – part of which is to build more social housing or provide housing allowances. This will alleviate the financial short-term burden of housing. However, housing has a longer term component as well. **Often, those in lower income quintiles find themselves in dilapidated housing, which has negative health outcomes (which can have a cascading effect on other parts of a person's life), are in segregated areas (preventing social mixing and potentially unequal access to public resources), and are in housing that is not energy efficient or sustainable**. Lower income homes are at times are asthetically unpleasing and without proper recreational amenities (shown to negatively affect wellbeing, and in turn labour productivity and standard of living). These topics, which will be further discussed in the CEB 2017 report "Housing Inequalities", should be addressed and incorporated into the future standard processes when developing social housing.

Ultimately, providing for better education and housing overcomes only two parts of the inequalities discussion – lower health outcomes tend to be correlated with higher income inequality. Personal health is a complicated topic as it is determined by a multitude of factors, such as health-care access, education, life-style choices (e.g. exercise, diet, etc.), and even familial support. Encouragingly, many Central-Eastern Europe countries that once (1990s) suffered low levels of life-expectancy have now converged closer to their Western, Northern, and Southern counterparts. Income inequality is not necessarily associated with lower life expectancy – for instance Southern European economies have high life expectancy but are relatively unequal societies.

However, lower income groups tend to report higher levels of bad and very bad self-perceived health and are more likely to have long-standing health problems. **On average, 15.2% of those in the bottom 40%, reported having bad health outcomes, as opposed just 4.7% of those in the top 20%.** Central-Eastern European countries tended to be well above the average for both income groups – see figure 13 below - while most Western, Northern, and Southern European states were at or below the averages (with the exception of Portugal). However, regardless of the region, every country tended to see, on average, an 11% difference in negative self-reported health between the bottom 40% and top the 20%.

While modern market economies will always have some degree of income inequality there should be no excuse for lower income groups having disproportionately higher negative health outcomes. While individual health outcomes are determined a multitude of factors (including personal ones), what is clear is that those of lower education, in long-term unemployment, and in materially deprived areas, are more likely to have worse health outcomes – all of which coincidentally correlate to issues faced by those in the lower income groups in more unequal societies. Presently in most European countries there is an "implementation gap" between policies trying to address income inequalities and their real-world implementation[20]. This is partially a reflection of the financial crisis where some governments had to scale back investment that could target the rising health inequalities across the continent.

Figure 13 - 2008-2015 average self-reported health status – bad or very bad, bottom 40% and top 20%



Source : EuroStat, CEB Staff calculations

20 http://ec.europa.eu/health//sites/health/files/social_determinants/docs/healthinequalitiesineu_2013_en.pdf

Conclusion

While Europe is on average the most equal continent in the world, it is nonetheless seeing inequality increase among and within its countries, with varied situations.

In Central-Eastern Europe, countries had made considerable in-roads towards economically converging to Western European standards before the 2008 financial crisis, only to slow down afterwards. However in this diverse region, only a few countries have been able to harness this growth without negatively affecting equality; many countries have even some of the highest inequality levels on the continent. In Southern Europe, inequality levels were already high by European standards before the onset of the financial crisis and have continued to worsen since. In the highly equal countries of Northern Europe, the run-up to the 2008 financial crisis began to test their historical highly equal position, and in recent years they have been working to ensure equality levels remain high. In Western Europe, inequality levels began to creep up in many countries in the run up the 2008 financial crisis, and at present there is a gradual recovery on equality measures.

In Europe, the primary drivers of income inequality have been technological change and policy reforms. Technological change has placed an income "skill premium" on high-skilled labour that is able to use productivity-enhancing technology, while those who are unable to harness these new technologies (typically in technologically non-dynamic industries) have seen their income positions weaken. Policy reforms in the form of de-regulation, declining minimum wages, weakened union collective bargaining power, and increased use of temporary worker contracts, have all made the labour position of low-skilled/low-income workers perilous. While globalisation is sometimes touted as a culprit of increased income inequality, its impact has remained limited and primarily in countries where labour-market protections/regulations were weakest.

The report concludes by examining not just what has caused income inequality but also its costs to society. The growing literature of work has shown how **high income inequality negatively correlates with economic growth, adversely affects economic stability** (i.e. unequal societies are more sensitive to economic shocks), **can lead to political polarisation and test social cohesion**. Inequality leads to societies where low-income individuals are stuck in a cycle of low-income living. Today, those in the bottom 40% are less likely to "make it out" of their income group than ever before. They have less access to quality education and are less likely to complete education at all, leading them to be less able to perform in a labour market that values educated workers. Low-income individuals also often find themselves living in costly and low quality housing, which is at times poorly connected to public services (education, health, and transport). Furthermore, health inequalities still persist between low and high income individuals. Although these gaps have narrowed over the years (especially mortality rates), low income individuals still have more health problems and face greater difficulty accessing health services relative to their richer counterparts.

The CEB has published three reports that build on this introductory report, which examine how inequalities exist in education, housing, and health, and what governments in Europe can do to help reduce them. While inequality issues persist on the continent, there are concrete solutions that can be implemented as the CEB reports highlight in more detail.

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