16 October 2019

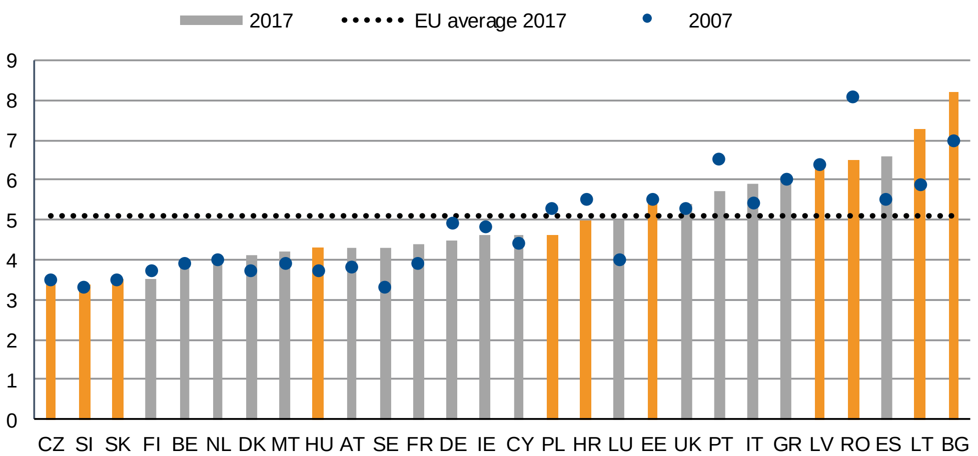
Income inequality in CEE economies – strong variation, different explanations

Income inequality is particularly high in some Central and Eastern European (CEE) countries, prompting policymakers and investors to increase their awareness on the topic. In this report, Scope takes a closer look at income inequality and its roots in the EU-11. The results are surprisingly diverse across the countries despite their common histories. This has differing implications for sovereign ratings in the region.

While some inequality is needed to raise economic efficiency and innovation, persistently high levels can weigh on long-term growth by raising financial stability risks, harming political stability and weighing on investment. Thus, the potential impact of income inequality on sovereign risk varies greatly across countries and requires a better understanding of its underlying drivers.

Income inequality levels are very different across CEE states in the EU. Incomes levels in Bulgaria, Latvia and Romania are the most unequal while in the Czech Republic and Slovenia are the least. Other EU-11 countries such as Poland and Hungary are located in the middle of the range. We define income inequality as a ratio, calculated as the income share held by the 20% of the population with the highest incomes divided by the income share held by the 20% with the lowest.

Figure 1: Income quintile (S80/20, 'IQSR') ratios across EU member states



EU-11 countries highlighted in orange
HR (Croatia) data only available from 2010

Source: Eurostat

Drawing from economic literature, we first explore the correlation between income inequality and economic convergence – a driver that captures factors like productivity growth, trade openness and financial sector development. Next, we examine longer-term determinants of inequality, in other words, its ultimate drivers: education, redistribution policies, and the quality of governance.

We found that lower levels of income inequality are linked with: (1) economic convergence; (2) a higher share of medium-skilled employment; (3) redistributive policies; and (4) a higher quality of governance.

Our analysis also shows that Scope's sovereign ratings reflect differences in inequality and its ultimate determinants. However, countries with similar levels of income inequality often perform differently on its three ultimate drivers, thus signalling different policy areas to be acted upon by governments.

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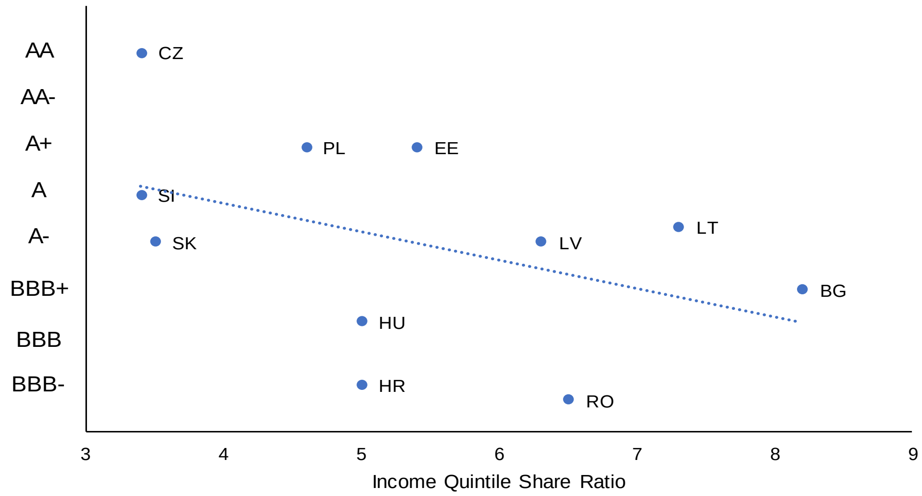
Does income inequality matter for sovereign risk?

A modest level of inequality is normal in a market-based economy and can provide incentives to enhance economic efficiency over time (e.g. education premia driven by higher prospective wages in the future). However, very high inequality levels can increase financial stability risks, harm social cohesion and political stability, and/or undermine investment due to unequal economic opportunities[1]. According to an IMF Staff Discussion Note, GDP growth would be 0.08 percentage points lower over the next five years if the income share of the top 20% grew by 1 percentage point[2]. Although we assume that any impact on a country's credit risk critically depends on the level and persistence of inequality, this number gives a broad indication of the importance of income inequality for growth. **Figure 2** shows a negative relationship between income inequality and Scope's sovereign ratings.

Scope's methodology looks at how income inequality affects qualitative and quantitative aspects of sovereign risk. Quantitative variables include real growth, per-capita GDP and governance, while the qualitative side is addressed under the risk dimension 'macro-economic stability and sustainability'.

Figure 2: CEE sovereign ratings and income inequality



Source: Eurostat, Scope Ratings GmbH; Bulgaria (BG), Croatia (HR), Czech Rep. (CZ), Estonia (EE), Hungary (HU), Latvia (LV), Lithuania (LT), Poland (PL), Romania (RO), Slovakia (SK), Slovenia (SI)

In the CEE region, income inequality levels have a strong inverse relationship with the level of economic convergence towards that of advanced economies. For example, income levels in the Czech Republic have already reached those of mature economies, whereas Bulgaria and Romania are still lagging behind, making them more vulnerable to credit risks upon an adverse economic shock. Such shocks could amplify social pressures and destabilise the political environment, especially for countries with inadequate social safety nets. While the record-long global economic expansion has raised incomes across all countries, a turn in the economic cycle could make it more difficult for ruling governments to manage high income inequality.

Four determinants of income inequality

The difference and trends in income inequality vary significantly between countries. Empirical research[3] shows that there are many reasons for this, including long-term trends, and the more recent impacts of technological change, globalisation and policy choices.

[1] Berg, A. and Ostry, J.D. 2011 "Inequality and Unsustainable Growth: Two Sides of the Same Coin?"
[2] Dabla-Norris, E., Kochhar, K., Suphaphiphat, N., Ricka, F. and Tsounta, E. 2015 "Causes and Consequences of Income Inequality: A Global Perspective"
[3] Dabla-Norris, E., Kochhar, K., Suphaphiphat, N., Ricka, F. and Tsounta, E. 2015 "Causes and Consequences of Income Inequality: A Global Perspective"

Moreover, it is not straightforward to discern whether and when inequality has an impact on economic development and whether that impact is favourable or unfavourable.

In this analysis, we seek to draw empirical conclusions for the EU-11. These countries share a common history and transitioned to become market-based economies in the 1990s. Following economic literature, we analyse the relationship between income inequality and its four potential drivers:

i) economic convergence;

ii) skill distribution in employment;

iii) redistribution; and

iv) institutional quality.

Income inequality and economic convergence

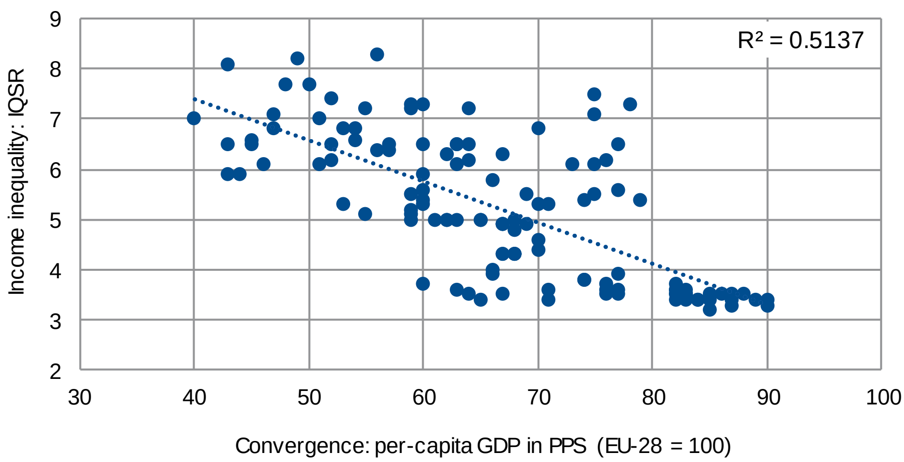
Inequality in CEE countries related to convergence

As a first step in this analysis, we clustered the EU-11 into three main groups according to their relative income inequality levels as portrayed in **Figure 1**. We then estimated each group's level of income convergence with the EU average:

- Some of the lowest income inequality levels in the EU are seen in the Czech Republic (AA/Stable), Slovakia (A+/Stable) and Slovenia (A/Stable). This is related to the stages of their economic development, with income convergence at about 85% of the average EU-28 GDP per capita (in purchasing power standard terms).
- Middle of the range are Hungary (BBB/Positive), Poland (A+/Stable), Croatia (BBB-/Stable) and Estonia (A+/Stable), with income levels averaging slightly above 70% of the EU-28 average.
- Some of the highest inequality ratios in the EU are seen in Latvia (A-/Stable), Romania (BBB-/Negative), Lithuania (A-/Positive) and Bulgaria (BBB+/Stable). This group includes economies at lower stages of economic convergence, namely Bulgaria and Romania (average per capita income levels at 57% of the EU-28 average), as well as countries like Latvia and Lithuania whose income levels are relatively high, at 75% of the EU-28 average.

The findings above are also summarised by the scatterplot in **Figure 3**. This displays a negative relationship between income convergence and income inequality for a sample of annual observations for EU-11 countries between 2007-18.

Figure 3: Income convergence and inequality in EU-11, unbalanced 2007-18



Source: Eurostat, Scope Ratings GmbH

Skill distribution in employment and inequality

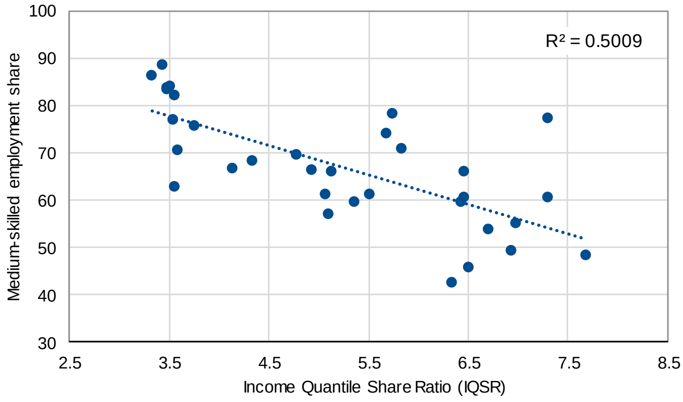
Economic research has shown that education is key for economic development and helps to increase social mobility between generations[4]. In this study, we use the share of different labour skill levels to explain differences in income inequality among the EU-11. Our findings show that higher shares of medium-skilled workers explain some of the income convergence and relates to lower income inequality.

We chose to concentrate on this measure of education to capture *both* the quality of the educational system and an economy's ability to transfer skills into workplaces. Both are needed to increase social mobility and reduce inequality over time.

Figure 4 shows that a higher share of medium-skilled workers is related to lower levels of inequality. Interestingly, there was only a weak positive link between inequality and the share of low- or high-skilled employment. Among the EU-11, there is a general shift from low-skilled to high-skilled (as represented by the orange dots being generally negative and blue dots being generally positive in **Figure 5.** The transition towards higher-skilled employment increases with observed inequality, which means that the currently high income inequality levels are likely to be reduced in the future.

Figure 4: Medium-skilled employment vs income inequality

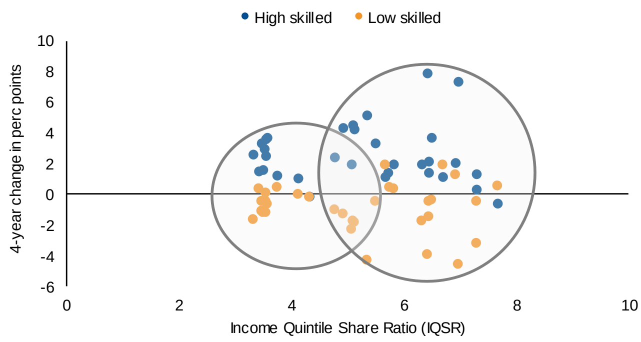
Annual data of EU-11 countries, 2007-17



Sources: Eurostat, Scope Ratings GmbH

Figure 5: Skill-level dynamics vs income inequality

Four-year changes in low- and high-skilled employment shares versus IQSR



Sources: Eurostat, Scope Ratings GmbH

In a separate case study presented in the **Annex**, we use the examples of Slovakia and Lithuania to show that skilled employment shares are related to inequality independent of other factors, including the degree of income convergence with the EU average.

Redistributive policies and inequality

Redistributive policies affect income inequality

Government fiscal policies may facilitate income redistribution via progressive taxation, social transfers and benefits systems[5]. Intuitively, such policies reduce inequality. However, the literature identifies that redistributive policies have a dual effect on income inequality[6].

On the one hand, the expected direct effect entails measures that reduce income inequality by focusing on the poorer segments of society. For instance, progressive taxation collects more from wealthier persons to fund public services, which benefits the general population.

[4] Coady, David and Allan Dizioli: Income Inequality and Education Revisited: Persistence, Endogeneity, and Heterogeneity, Working Paper No. 17/126, May 2017.
[5] European Commission, *Impact of fiscal policy on income distribution*, Report on Public Finances in EMU 2017, Institutional Paper 69, 2017
[6] Martin Larch and Philipp Mohl, *Mitigating the Gap between the Rich and the Poor: Assessment of Key Trends and Drivers of Redistribution*, Discussion paper 105, European Commission, August 2019

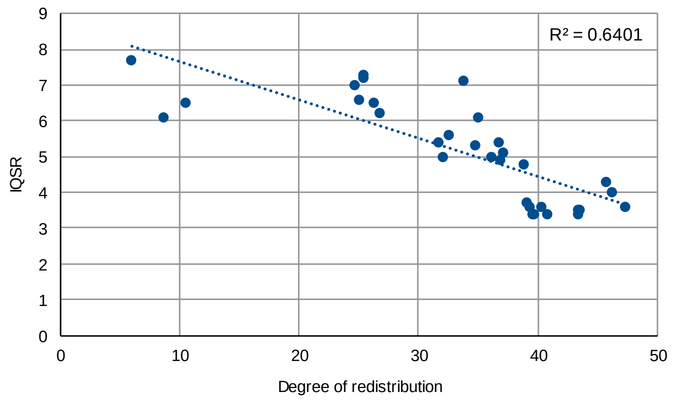
Similarly, social transfers financed by general taxation provide a basic income to those who otherwise would have little or no earnings. However, redistributive policies may also have the *opposite effect* if they are poorly designed and reduce incentives to work or invest, causing income inequality to rise over time.

Here, our analysis provides support for the assumption that redistribution leads overall to *lower* income inequality.

How we measure redistribution

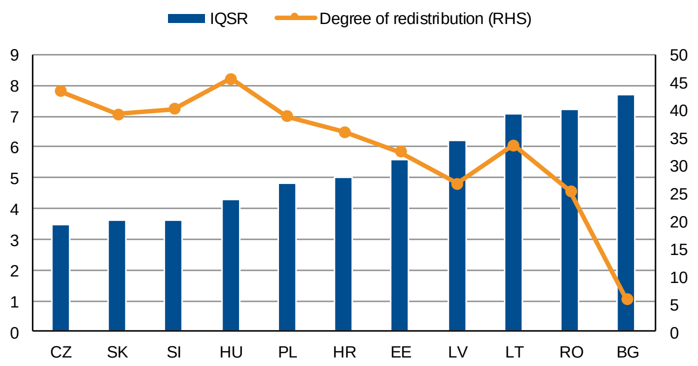
We have concentrated on a possible correlation between income redistribution and income inequality in the context of the EU-11. Following previous analyses by the IMF and others, we measure redistribution as the difference between the Gini index based on market incomes and the Gini index based on disposable incomes. The difference between these two measures serves as a proxy for the extent of redistribution via collective taxation and social transfers. Our indicator – *the degree of redistribution* – takes this difference as a percentage of the Gini index computed on market incomes[7], thereby accounting for the widely different levels of inequality within the EU-11.

Figure 6: Income inequality and redistribution among EU-11, pooled data, 2007-2016



Sources: Eurostat, SWIID database, Scope Ratings GmbH

Figure 7: Income inequality and redistribution (2016)



Sources: Eurostat, SWIID database, Scope Ratings GmbH

Strong correlation between redistribution and income inequality

Figure 6 shows the anticipated negative relationship between redistribution and income inequality. Stronger redistribution policies are related to lower income differentials between the poorest 20% and the richest 20%. At the same time, we observe that redistribution does not pass through linearly to inequality. While some countries show a strong link between redistribution policies and income inequality (i.e. the Czech Republic, Slovakia, Slovenia), other countries that redistribute to a similar or even higher extent are nonetheless left with higher inequality (Hungary; see **Figure 7**).

Specificities in policy design relevant to reducing inequality, beyond income convergence

One reason is that countries that are closer to EU average wealth levels generally have greater tax capacities to sustain welfare systems. This aside, we notice country-specific peculiarities: for example, Hungary has the highest extent of redistribution, based primarily on its large tax wedge[8], while Baltic countries show low redistribution despite relatively high economic convergence with the rest of the EU, due in part to less progressive tax systems.

[7] The same approach to measure the degree of redistribution has been used by Causa, O. and Hermansen, M., *Income redistribution through taxes and transfers across OECD countries*, VOX, CEPR Policy Portal, 2018

[8] Only the eight CEE countries that are also member countries of the OECD, the source of this data, are considered here. In 2018, Hungary had the highest tax wedge, at 45% of the total labour cost, compared with the CEE average of 41.

The second case study presented in the **Annex** is based on the performance of Slovenia and Latvia. The country example shows that redistribution is related to inequality independent of other factors.

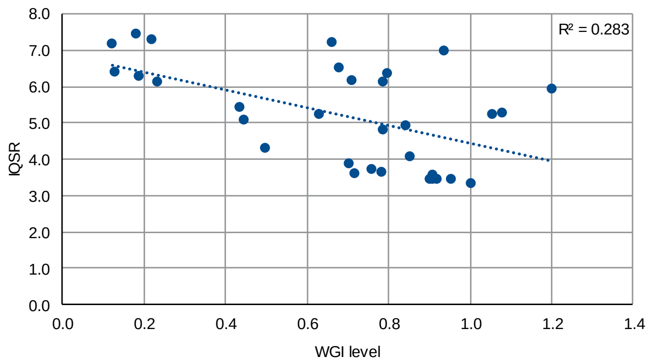
Governance and inequality

According to the literature[9], there appears to be dual-directional causality between the quality of political institutions and income inequality: political institutions impact a society's income distribution; income distribution, in turn, impacts institutional and political development. A paper by the IMF[10] shows that high and rising corruption increases income inequality. This results in negative impacts on growth, the effectiveness of tax systems and social spending, the development of workers, and the distribution of asset ownership.

As **Figure 8** shows, income inequality levels in the EU-11 are linked with institutional quality as proxied by the average of the World Bank's six Worldwide Governance Indicators (WGI). The Czech Republic and Slovenia rank highest on governance within the region and over the last decade have been among the three countries in the EU-11 with the lowest levels of income inequality. On the other hand, Romania and Bulgaria, whose governance quality levels have been the weakest in the EU-11 over the last decade, have had some of the highest income inequality levels in the EU-11 over the same period. Thus, governance quality seems to be strongly correlated with income inequality.

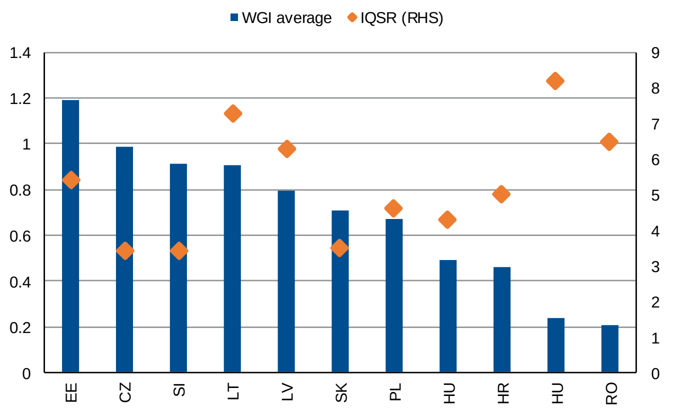
When analysing this across the six WGI dimensions for the EU-11 since 2006, the factors most correlated with income inequality were political stability and voice and accountability, followed by government effectiveness, rule of law, control of corruption and regulatory quality.

Figure 8: Governance vs income inequality, 2006-2017
Four-year averages



Source: European Commission, World Bank, Scope Ratings GmbH

Figure 9: Governance vs income inequality in 2017



Source: European Commission, World Bank, Scope Ratings GmbH

Due to the high stability of governance quality indicators over time, we have analysed their relationships with income inequality in the EU-11 on a cross-sectional basis, using four-year average levels of WGI[11] and IQSR. While the overall negative relationship depicted in **Figure 8** aligns with our expectations, **Figure 9** provides more insight at the country level: income inequality in Bulgaria (BBB+/Stable) and Romania (BBB-/Negative) are substantially higher than in Croatia (BBB-/Stable), despite similar levels of income, and sovereign ratings from Scope, possibly explained by the latter's higher governance quality. At better-quality governance and/or higher stages of economic development, other factors

9 Asian Development Bank Economics Working Paper Series No. 193
10 Gupta, S. 1998, "Does Corruption Affect Income Inequality and Poverty?"
11 Ranges from -2.5 (weak governance) to 2.5 (strong governance)

appear to be more relevant at explaining differences in income inequality, i.e. education and redistribution.

Wrap-up and conclusion

The summary of our analysis in **Figure 10** shows that sovereign ratings reflect a mixture of differences in inequality and the ultimate determinants of inequality. While most of these differences appear related to varying levels of income, most countries rank differently across the four analysed dimensions, except for the Czech Republic (high), Poland (medium) and Bulgaria (low). This indicates possible policy areas to be acted upon by governments. For example, Baltic countries have a relatively low share of medium-skilled employment, indicating a need for greater investment in the skills base to respond to the demands of the labour market. The governance performance of Romania and Bulgaria as captured by the WGI remains the weakest in the region; Romania's performance has worsened considerably over the past three years, while Bulgaria's has improved modestly. Estonia and Slovakia, countries with a relatively high per-capita income levels and hence higher potential for fiscal redistribution, only have a moderate degree of redistribution, pointing to the need to improve the efficiency of redistributive fiscal policies.

Figure 10: Sovereign ratings and income inequality in the EU-11[12]

Country	Scope's sovereign rating	Level of income convergence to EU-28 average	Share of medium-skilled employment	Difference between market and disposable incomes, Gini	Average of World Governance Indicators (WGI)
Czech Rep.	AA/Stable	high	high	high	high
Estonia	A+/Stable	high	low	medium	high
Poland	A+/Stable	medium	medium	medium	medium
Slovakia	A+Stable	medium	high	medium	medium
Slovenia	A/Stable	high	low	high	high
Lithuania	A-/Positive	high	low	medium	high
Latvia	A-/Stable	medium	low	low	high
Bulgaria	BBB+/Stable	low	low	low	low
Hungary	BBB/Positive	medium	medium	high	medium
Croatia	BBB-/Stable	low	medium	medium	medium
Romania	BBB-/Negative	low	medium	low	low

Source: Scope Ratings GmbH

[12] Income convergence of below 70 leads to a 'low' assessment and above 80 to a 'high' assessment. The share of medium-skilled employment is defined as 'low' when the share of employment is below 60% and 'high' when the share is above 70%. The difference between Gini market and disposable incomes is assessed as 'low' below a value of 30 and 'high' for values above 40. Institutional quality is assessed as 'low' with scores below 0.4 and 'high' with scores above 0.8.

Annex: Two case studies

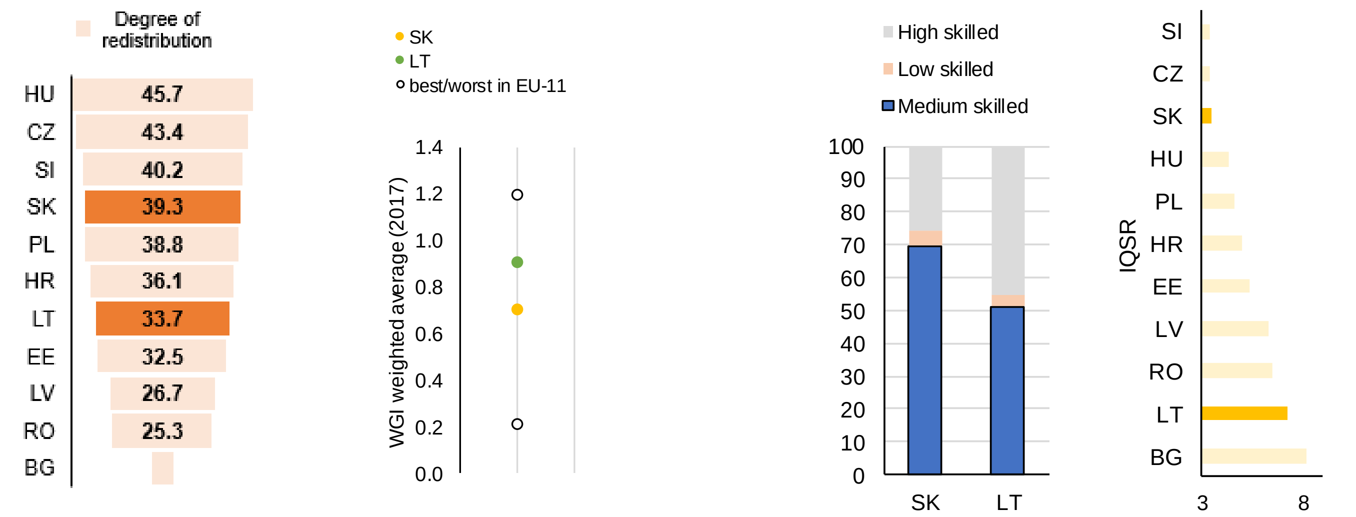
This annex shows the separate analysis we conducted on the individual drivers of income inequality across countries, while ignoring their interlinkages at the country level. We present two case studies, which show that differences in skilled employment and redistribution are related to inequality independent of other factors.

Skills in employment and inequality: Slovakia and Lithuania

We determined whether skill-based employment is related to income inequality regardless of other factors by choosing two countries that share similar convergence, redistribution and governance qualities, but exhibit different skill levels in employment. As of 2017, income convergence in Slovakia (A+/Stable) and Lithuania (A-/Positive) were almost identical, at around 80% of the EU average; redistribution policies and governance were also similar. However, Lithuania's income inequality was much higher than Slovakia's, possibly related to the former's low share of medium-skilled workers (50% versus 70% of employed persons, respectively, see **Figure 11**).

Figure 11: Case study on education and income inequality: Slovakia and Lithuania

Similar **redistribution** (lhs) and **governance** (rhs) but… … different **skill levels** (lhs) and **income inequality** (rhs).



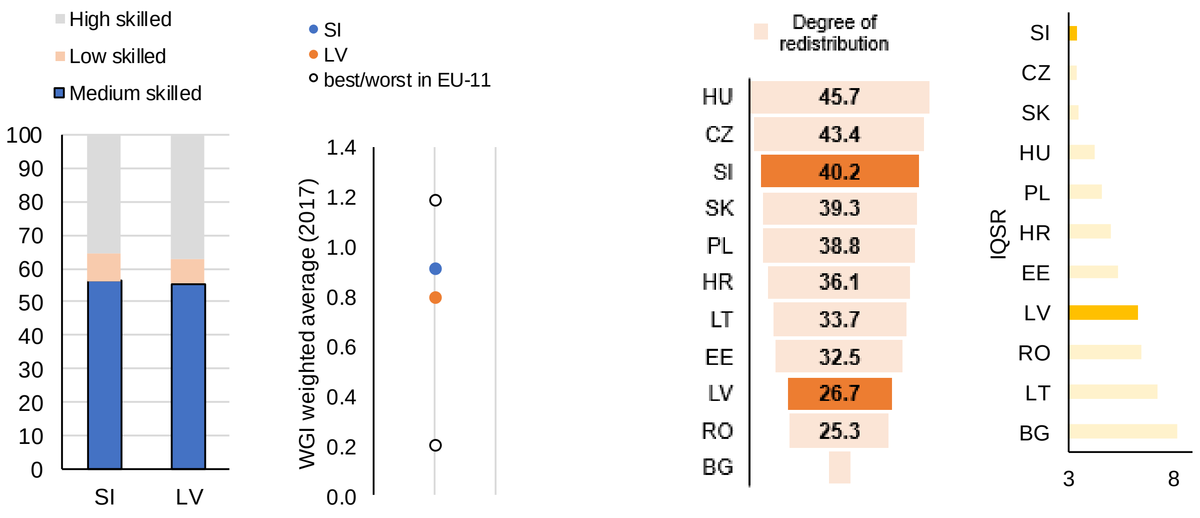
Source: Eurostat, SWIID database, World Bank, Scope Ratings GmbH

Redistribution and Inequality: Slovenia and Latvia

Slovenia (A/Stable) and Latvia (A-/Stable) share similar outcomes for education and quality of governance. However, they differ in terms of the effectiveness of redistribution policies. This could be a core driver of the marked difference in income inequality – apart from their differences in income convergence, with Slovenia and Latvia respectively at 87% and 70% of the average per-capita GDP in the EU (purchasing power standard). It remains an open question whether it is the low levels of redistribution that impede economic convergence or the limited progress in convergence that curb redistributive policies from developing.

Figure 12: Case study on redistribution and income inequality – Slovenia and Latvia

Similar **education** levels and **governance** indicators but… … different **redistribution policies** and **income inequality**.



Sources: Eurostat, SWIID database, World Bank, Scope Ratings GmbH

The lessons for Latvia regarding their higher observed income inequality seem consistent with the recommendations advanced by the European Commission to the government under the European Semester, in which the Commission emphasised Latvia's high income inequality level as an area for progress, in view of the country's limited progressivity of taxation and an inadequate social protection system.

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