

CEE SPECIAL REPORT

Can we work more for longer?

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Demographic trend is unmerciful

Shrinking working age population means that by 2050 equivalent of Czechia's population (roughly 10 million people) will disappear from the CEE7* labor market, according to European Commission baseline projections.

Is there a way to fill that gap?

Mobilization of labor force

- Employment growth
- Delaying exit due to retirement
- Improving health status and childcare
- Migration
- Flexible work arrangements

Enhancing labor mobility

- Low structural mobility
- Green transition will enforce reallocation across industries

Productivity gains

- Automation
- Artificial Intelligence
- Life-long learning
- Digital skills

Labor market structure in CEE7

Total population: 89.7 million

Working age population (15 to 64 years): 57.8 million

Labor force (active population): 40.7 million

**Employed:
39.1 million**

**Unemployed:
1.6 million**

Out of labor force

**Total: 40.7 million
(including working age
population of 17.1 million)**

Key developments and challenges

Shrinking working age population is unavoidable in the region. By 2050, there will be more than 10 million people fewer aged 15 to 64 years in CEE7 (Czechia, Croatia, Hungary, Poland, Romania, Slovakia and Slovenia), according to the baseline projection of the European Commission. That is a loss of roughly one-fifth of the current workforce or equivalent of the size of the Czech population disappearing from the labor market.

Fertility rates have been declining across Europe over the last few decades. The region is no exception to that development, with Poland experiencing the biggest drop of the total fertility rate since 1990. On the other hand, life expectancy has increased in the region visibly since the transition. Such a development does not seem to outweigh the low number of births across the region.

Although longevity has increased visibly since the transition, health status is seen as an obstacle for longer labor market participation in the region. The expected number of healthy years at birth is below the EU27 average in all CEE countries except for Slovenia.

Improving health status and health care system may prove to be one of the key factors for keeping elder workforce active.

Key developments and challenges

Over the last two decades, employment rates and participation have increased visibly in the region (by more than 10 percentage points in Hungary, Poland and Romania). However, there is still some potential to increase the workforce when we compare CEE7 to countries with top employment rates (the Netherlands), though we see it as limited.

Slovenia, Slovakia and Czechia have among the lowest retirement ages in Europe. Hungary and Poland, on the other hand, have substantial retirement gender gaps (visibly lower retirement age for women compared to men) that, if changed, could be an additional source of workforce on the labor market.

Enhancing female labor participation through improving childcare arrangements and part-time job offers may motivate women to be more active in the labor market. Although female employment in all CEE countries except for Romania is at the EU average, the gap rises when compared to countries with the highest employment rates (Sweden, the Netherlands).

Migration is a long-discussed matter that could help CEE countries. The recent inflow of migrants from Ukraine showed the need for workforce in the region. Not only did the unemployment rate remain low, the matching on the labor market also improved.

Key developments and challenges

Implementation of new technologies such as Artificial Intelligence (AI) seems to be a key issue for the future development and effectiveness of the labor market. In a worldwide comparison, the region is ready for the adoption of new technologies.

Initial findings (OECD 2023, IMF 2024 or Noy and Zhang 2023) suggest that implementation of AI could actually increase productivity and may be seen as a complementary factor for labor, as opposed to automation or robotization, to which the region was particularly exposed within the car industry, for example.

Climate change is another challenge for the labor market. The net-zero transition will include a major reallocation of jobs across certain industries, occupations and regions that are found to be GHG-intensive. Further, the OECD estimates that each day with a temperature above 40 degrees Celsius increases the risk of workplace accidents by more than 10%. Life expectancy is also at stake.

Lifelong learning and digital skill development should help in the adoption of AI and cushion the costs of the green transition, in particular in high-emissions sectors.

Impact of recent shocks on labor market

The outbreak of the pandemic resulted in significant and permanent changes in working arrangements. According to the Global Survey of Working Arrangements conducted in April and May 2023, 25.6% have hybrid working arrangements (combination of work from home and on-site) and another 7.9% work fully from home.

Flexible work arrangements may incentivize part of the workforce to be more active in the labor market and support labor mobility.

The inflation shock that followed the pandemic was extraordinary in the sense that the labor market did not bear any costs of disinflation in response to the tight monetary policy and recession. The relationship between disinflation and unemployment, as described in the basic form of the Phillips curve, has not really been visible in CEE, as unemployment kept declining.

DEMOGRAPHIC TRENDS

**Working age population will shrink,
amplifying the pressure on the labor
supply.**



Shrinking working age population is unavoidable

By 2050, the working age population in CEE7* will be lower by more than 10 million, according to baseline projections. In other words, there will be 47 million people aged 15 to 64 years compared to 57.8 million in 2023. That is a decline of 18% within the next three decades.

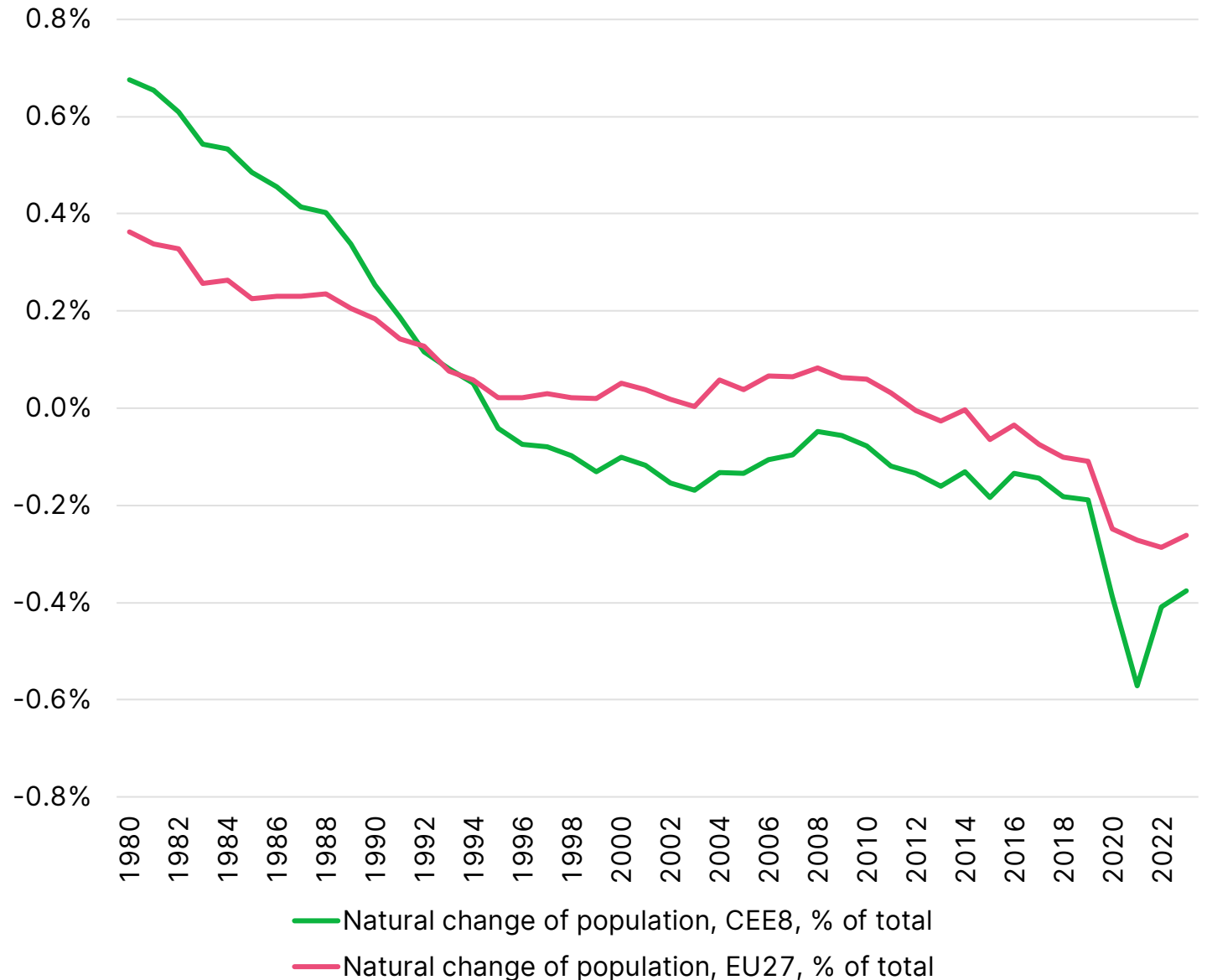
At the same time, the population 65 years or over will be growing, reaching 23.3 million by 2050, up from 17.7 million in 2023. Moreover, to some degree, it will not be replaced by younger members of the workforce.



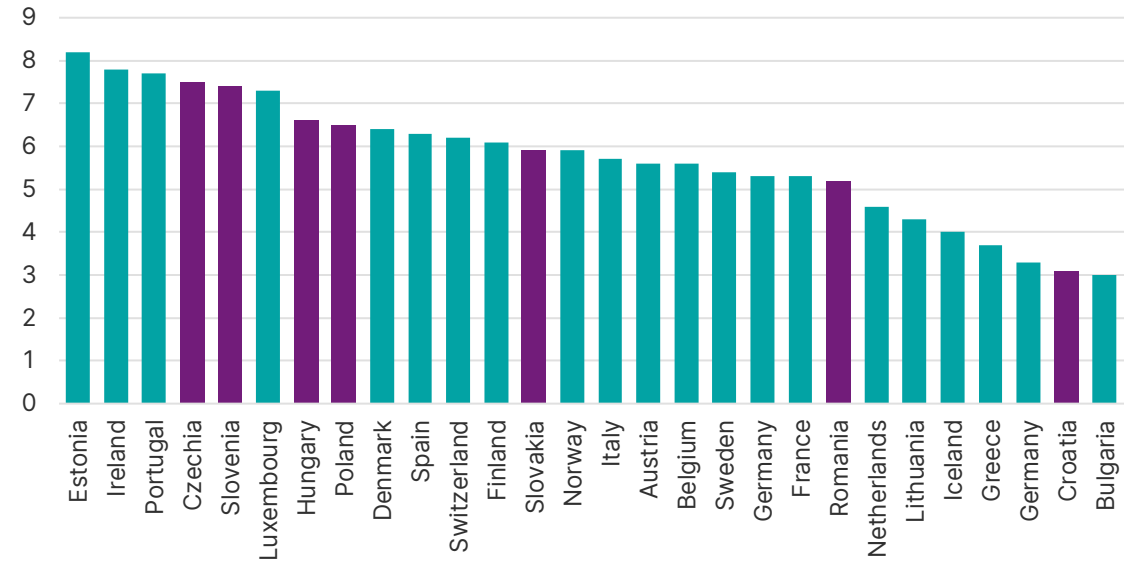
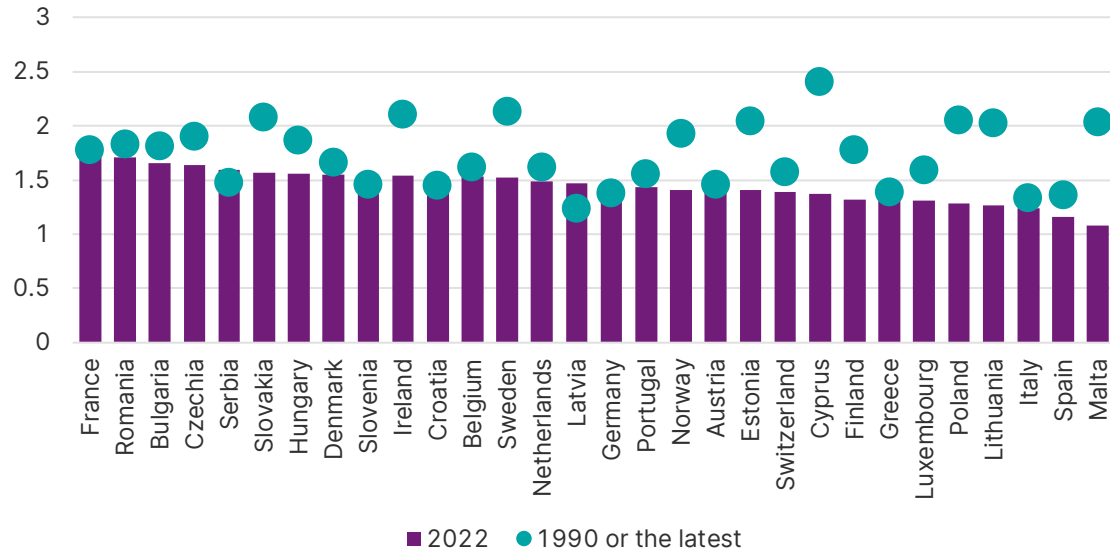
Unfavorable long-term trends began after the transition

The natural change of population has been negative in the region since mid-1990 (meaning more people died than were born in a particular year), while in the whole EU, it became negative only in early 2010. In the region, the slowdown in births began to be quite apparent after the economic transformation. The other very significant moment in the natural change of the population is the COVID-19 pandemic. The CEE8 region has suffered to a greater extent, as its population decreased by -0.6% in 2021, due to a very high number of excessive deaths.

NATURAL CHANGE OF POPULATION IN THE REGION AND THE EU27



Higher longevity does not seem to outweigh low fertility rates

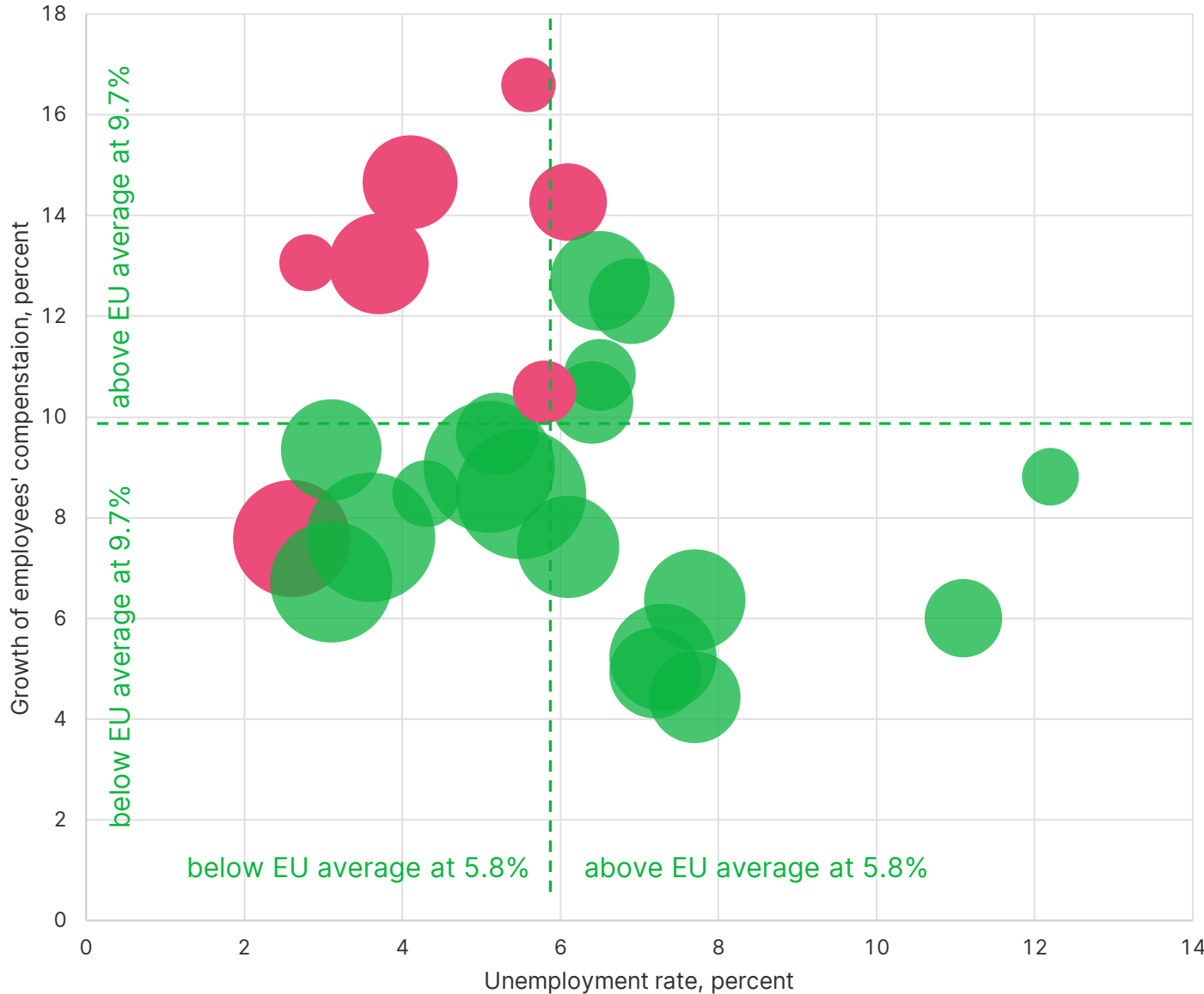


Change in life expectancy between 1990* and 2022

Total fertility rate across Europe 1990* vs. 2022

There are only a couple of countries where the total fertility rate did not decline over the last three decades. In all of Europe, fertility rates are below the replacement-fertility level of 2.1. Poland has the lowest fertility rate in the region and one of the lowest in Europe. On the other hand, Romania and Czechia stand out with total fertility rates at 1.71 and 1.64, respectively.

Since the transition in 1990, life expectancy has increased between 6.5 and 7.5 years in four out of seven CEE countries, i.e. Czechia, Slovenia, Hungary and Poland.



Labor market has never been tighter in the region

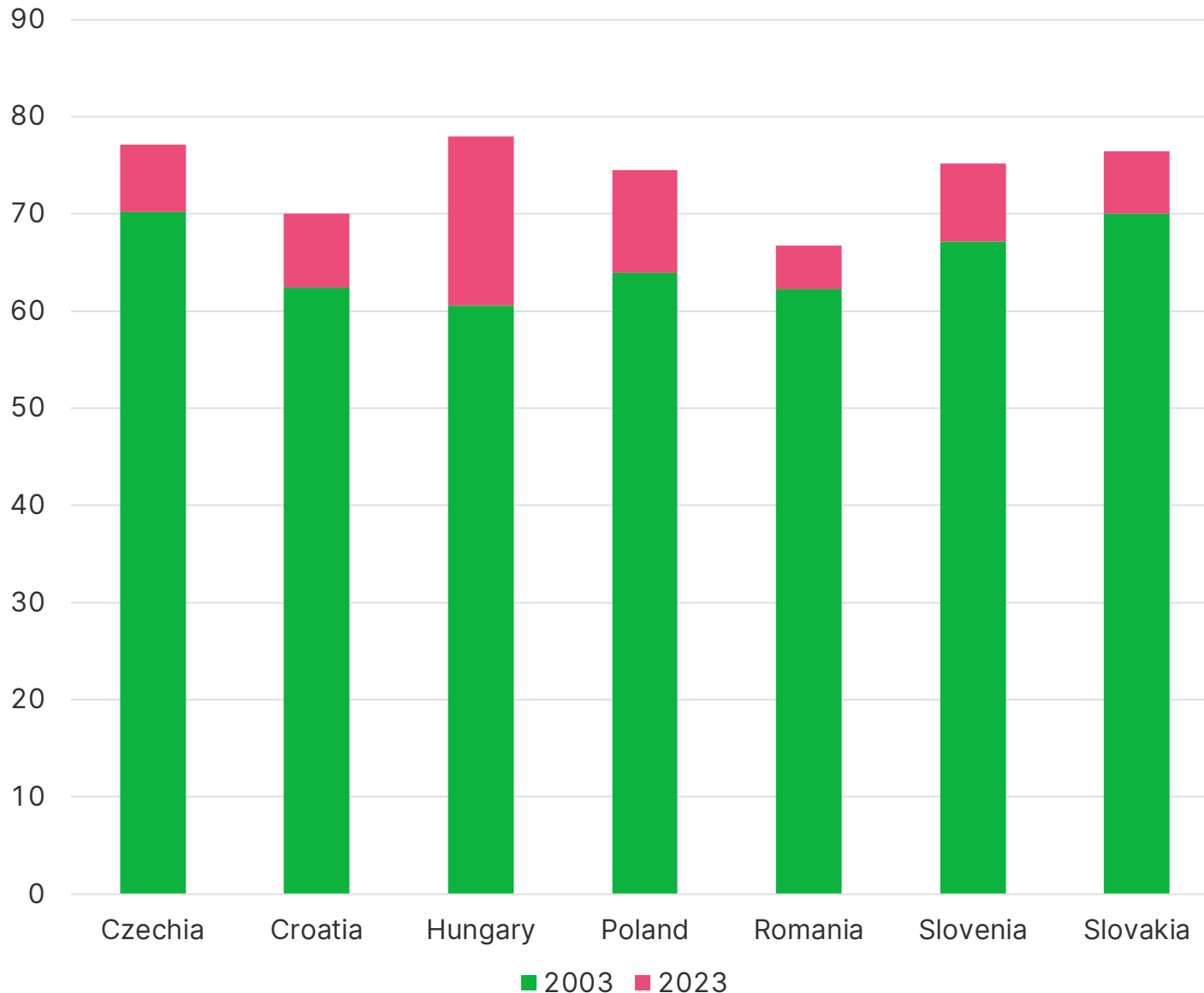
In 2023, CEE countries had unemployment rates below the EU average and nominal growth of employee compensation above the EU average. Most of the CEE countries are placed in the top left quadrant. However, countries in the region experienced the highest inflation over the last two years. Czechia is an outlier, where nominal growth of compensation was below the EU average.

The job vacancy rate (size of the bubble) is also one of the highest in Czechia, Hungary and Slovakia.

MOBILIZATION OF LABOR FORCE

There is still potential to increase the workforce, despite the high employment and longer working life. The low number of healthy years is an obstacle, not to mention childcare arrangements, retirement age and migration.



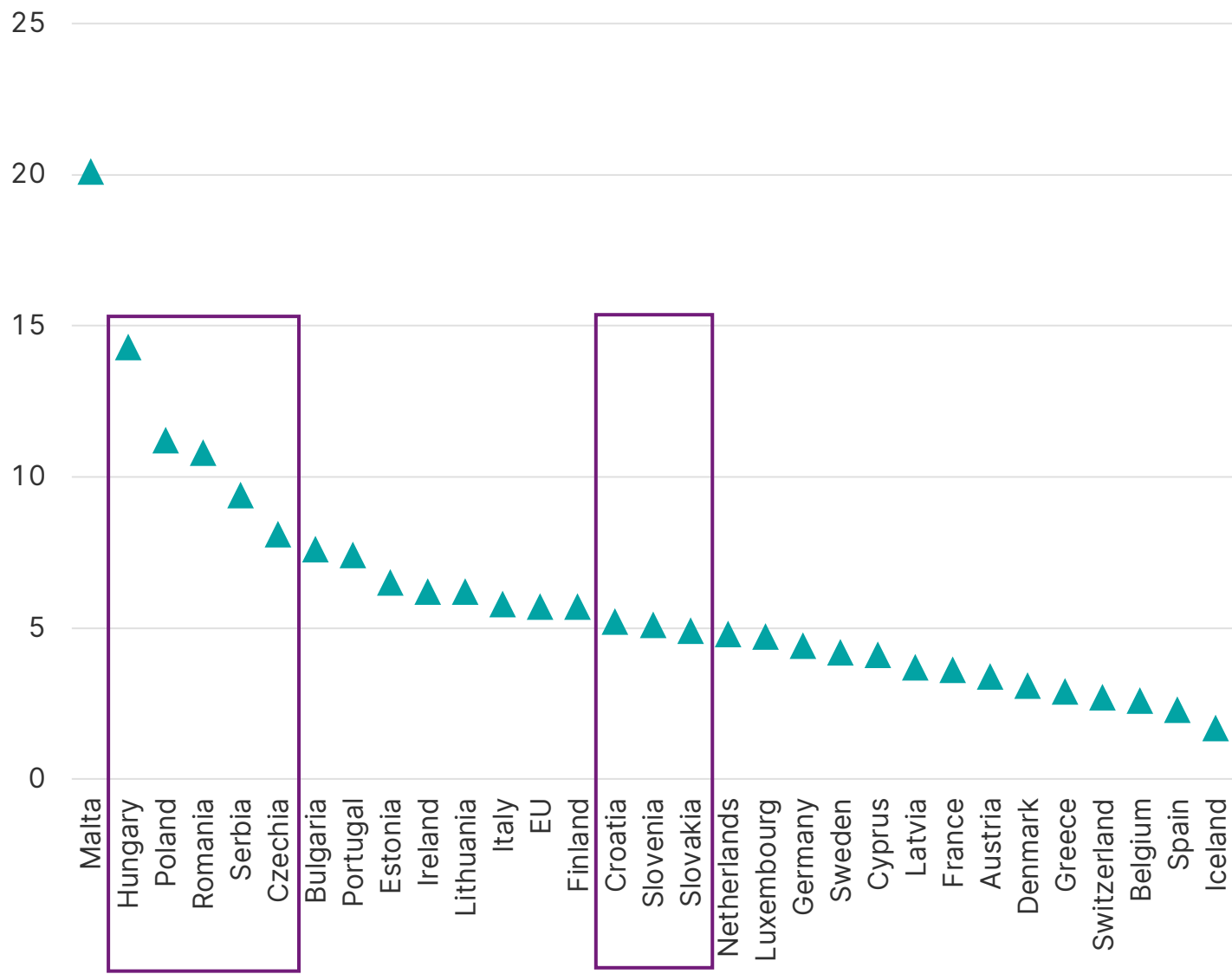


Participation rate increased over last two decades

In 2003, participation rates at 70% were the highest in Czechia and Slovakia. Two decades later, Czechia has a participation rate of close to 77%, on par not only with Slovakia, but also Hungary. Poland and Slovenia, with participation rates at 75%, are only slightly behind.

Hungary experienced the highest participation rate, which has increased by 17 percentage points since 2003.

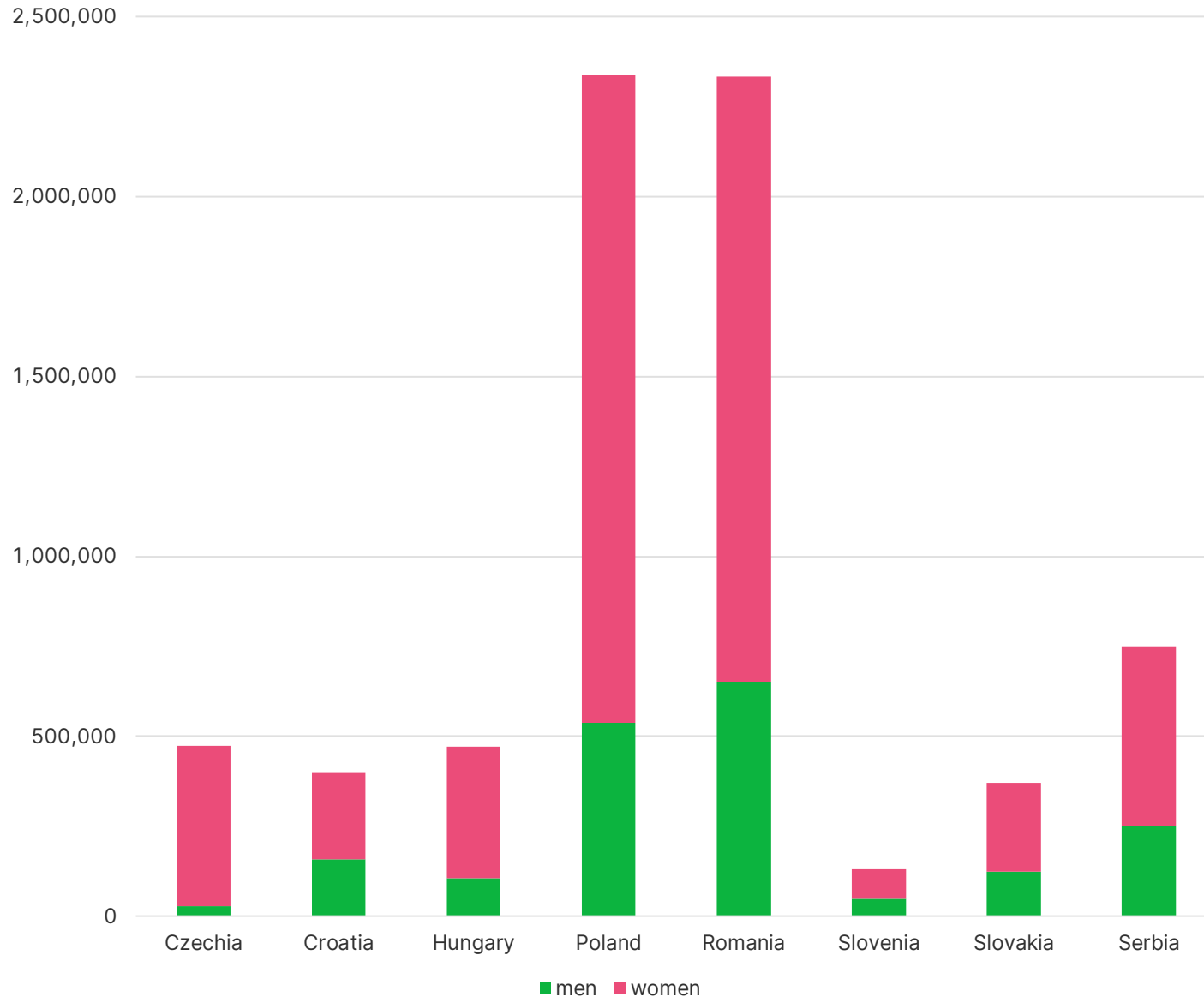
Employment rates have increased visibly in CEE since 2010



▲ Change in employment rate since 2010, percentage point

The low employment rates are no longer an issue in the region. Most of the CEE countries have employment rates close to the EU average.

Since 2010, Hungary, Poland and Romania have experienced employment rate increases by more than 10 percentage points. In other words, a higher share of the population is working at present than did so more than a decade ago.



There is employment potential if compared to top country

Comparing to the Netherlands, a country with one of the highest employment rates (as percent of total population), there could be an additional 7 million people employed in the CEE8 region. This would amount to a 17% increase in total employment.

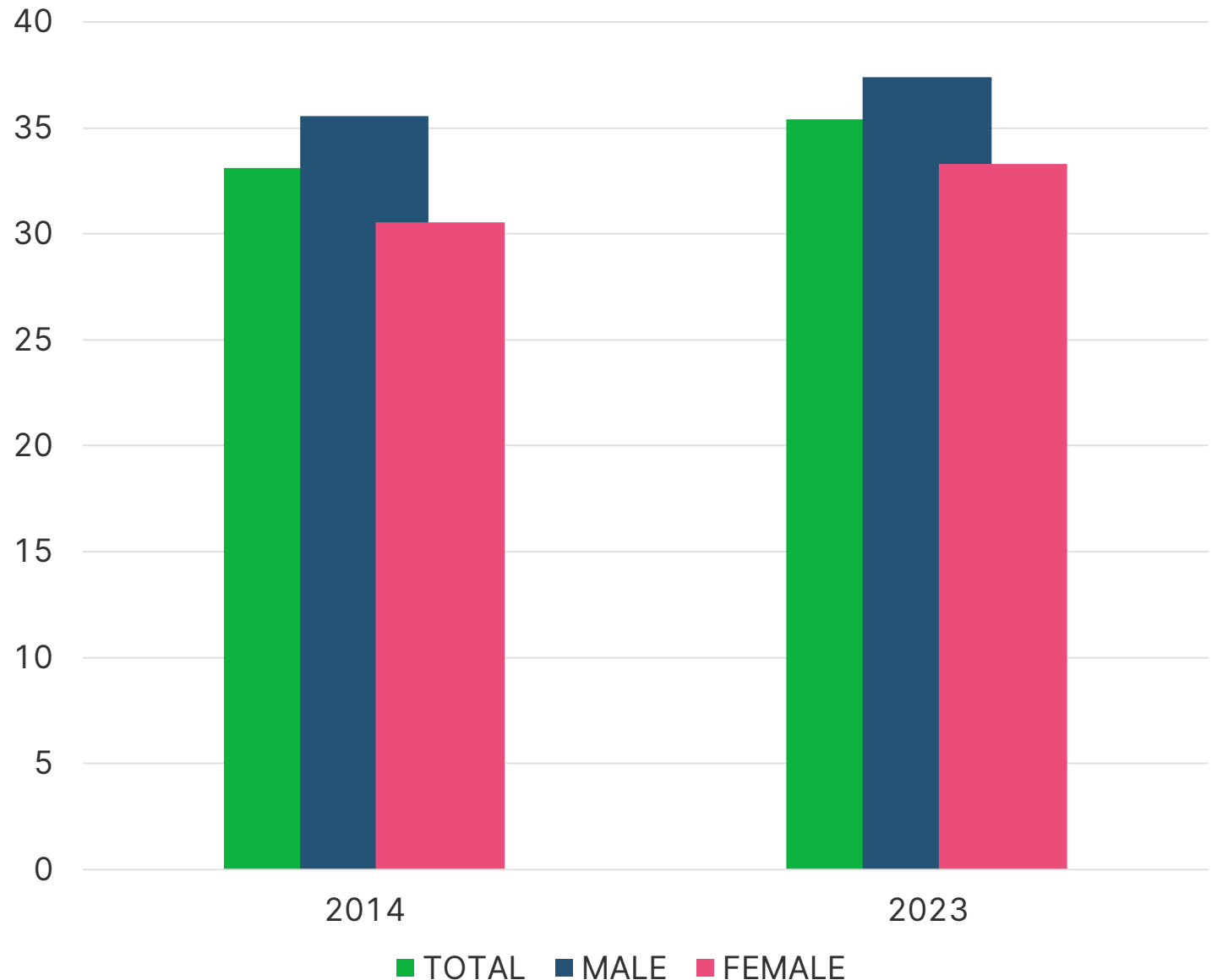
Romania, Serbia and Croatia currently have the most relative potential left unused in their workforce. While all three countries could profit from increased male employment, most potential lies with women.

Duration of working life has increased in the region

The indicator on duration of working life is an estimation of the number of years a person, currently aged 15 years, is expected to be in the labor force (i.e. to be employed or unemployed) throughout his or her life.

Over the last decade, the average for the CEE7 has increased by slightly more than two years. Ten years ago, a 15-year-old person was expected to work 33.1 years, while in 2023 the duration of working life averaged at 35.4 in CEE7. Interestingly, the duration of working life increased for women more (by three years) than for men (by almost two years).

DURATION OF WORKING LIFE WENT UP, NUMBER OF YEARS

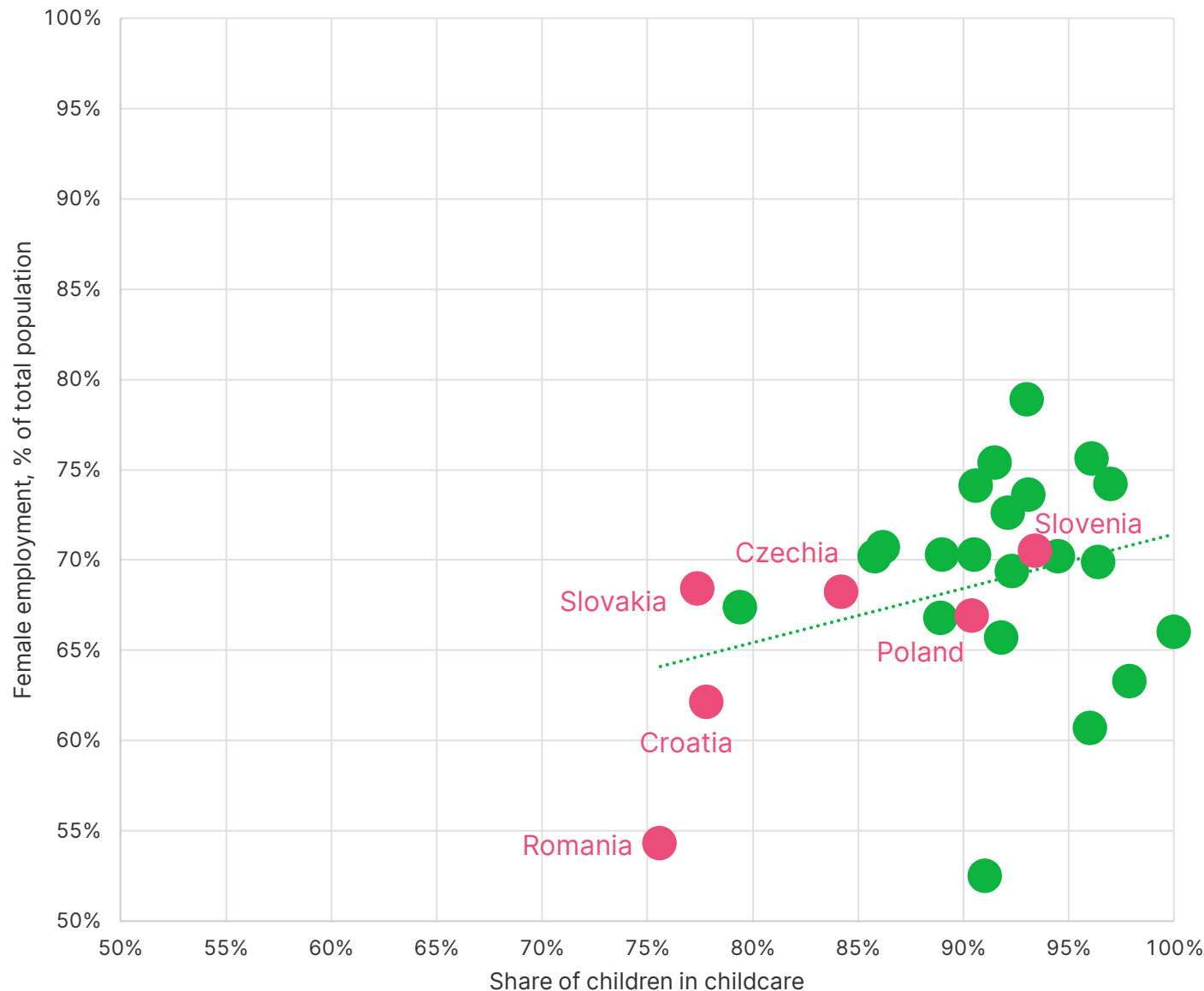




Improving health is prerequisite for longer working life and prosperity

The indicator Healthy Life Years (HLY) at birth measures the number of years that a person at birth is still expected to live in a healthy condition. All CEE countries have expected number of healthy years below the EU average. Improving health outcomes could enhance longer labor market participation.

At this point, we see the health status as one of the obstacles to why people cannot or do not want to work longer.

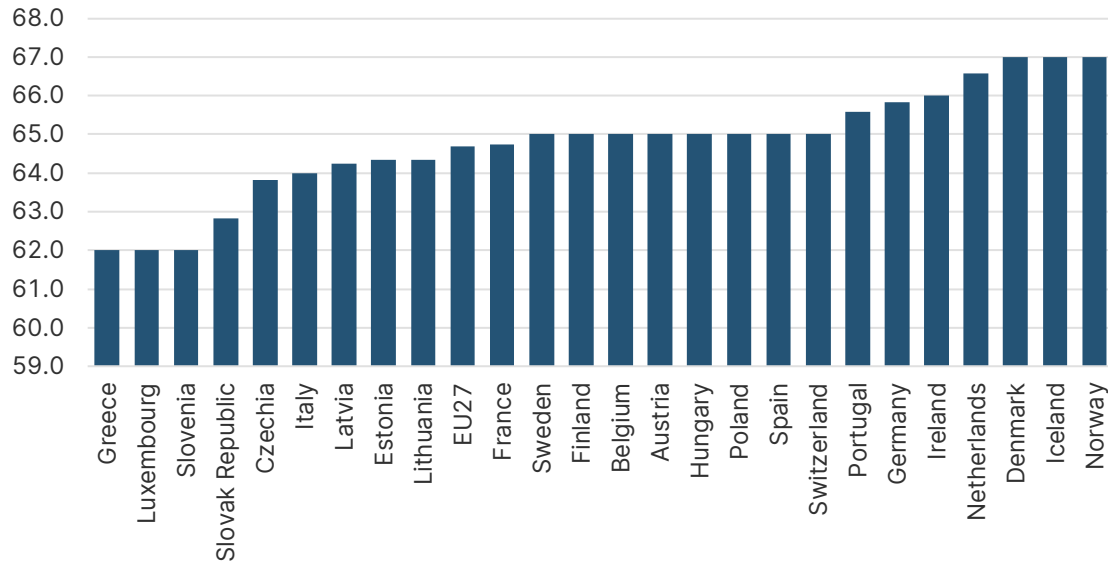


Childcare and female employment go hand-in-hand

The higher share of children from age three to the starting age of compulsory education at the primary level, the higher female employment. The correlation is only slightly positive, however.

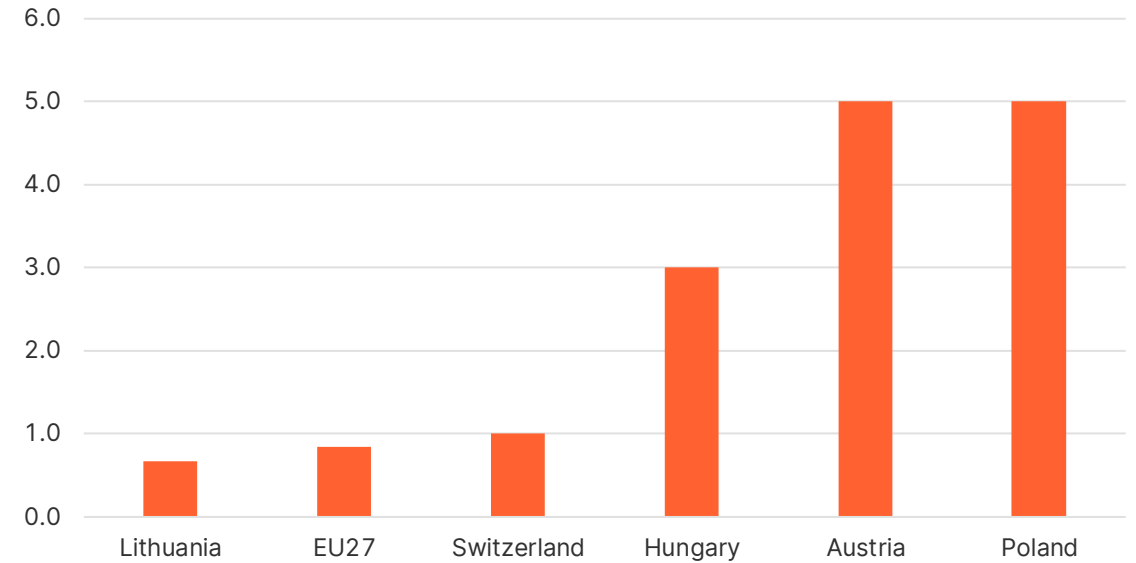
Compared to the EU average, only Romania has much lower female employment rate. When compared to the Netherlands or Sweden, countries with the highest female employment, the roughly 10 percentage point gap arises in most of the CEE countries and to as much as 25 percentage points in Romania.

Retirement age and retirement gender gap



Retirement age of men, age in years

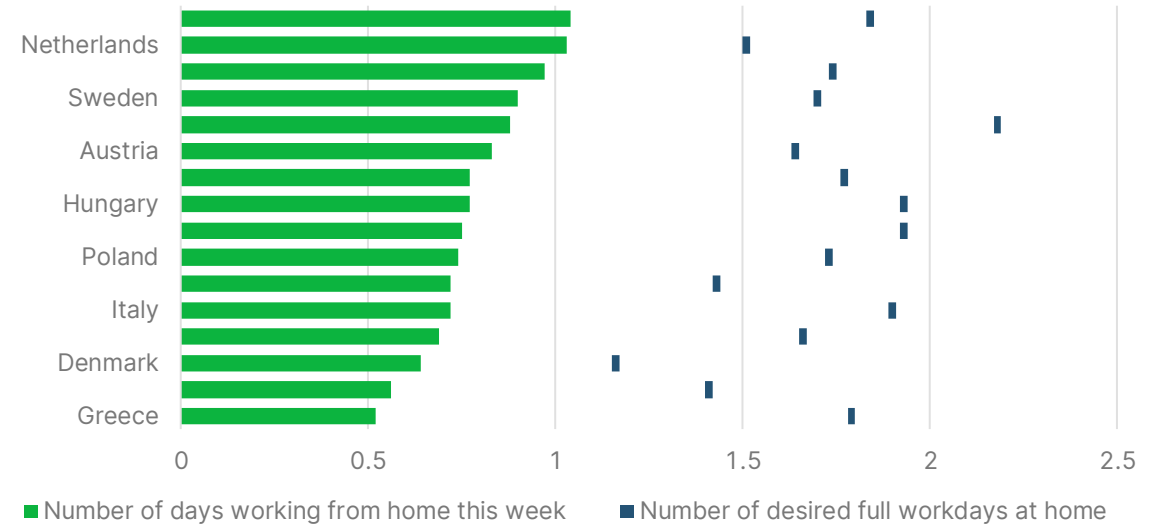
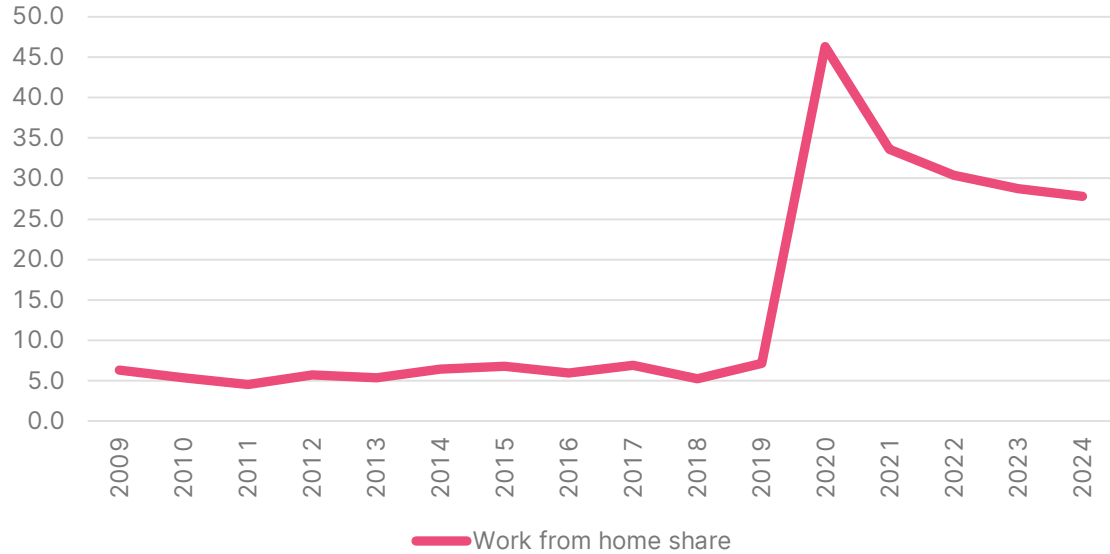
Slovenia, Slovakia and Czechia have lower retirement ages than the EU average. In reality, the effective age of exit from employment is lower compared to the statutory retirement age. Additionally, Slovakia faces a problem with early retirement. Financial incentives enhance people to leave earlier than they would otherwise.



Retirement gender gap, number of years

Hungary and Poland have the highest gender gaps considering retirement age. These two countries thus have the highest potential to increase female employment by reducing the retirement gender gap.

Flexible work arrangements could mobilize workforce

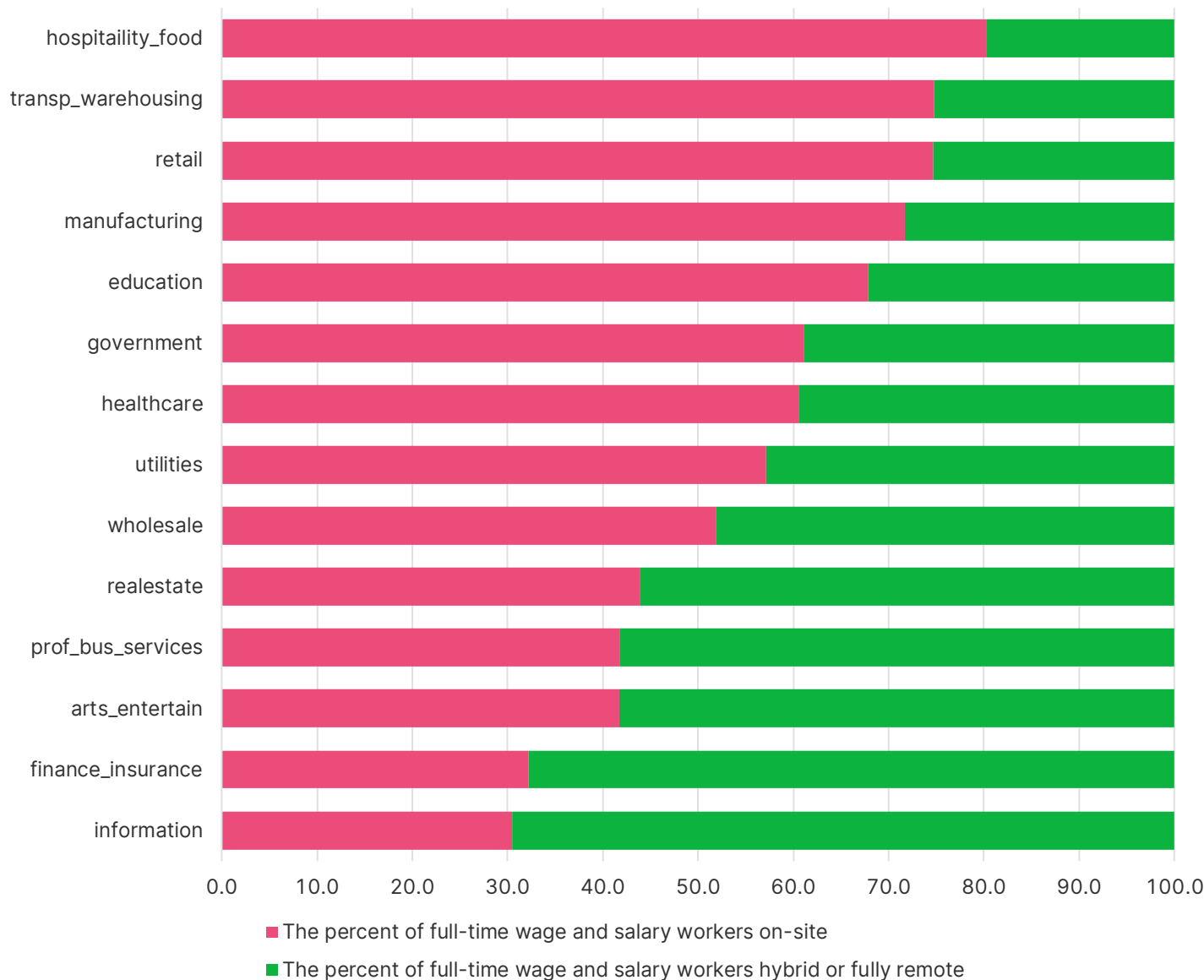


Work from home share prior to pandemic was low

Number of days of work from home vs. desired number

The pandemic outbreak resulted in tremendous changes of work arrangements. As of 2023, roughly one-fourth had hybrid work arrangements and another 7.9% worked fully from home. Although these results are based on US data, we believe that across Europe similar changes took place and work from home became a permanent arrangement for many employers. The cross-country data show that while the number of desired full workdays at home oscillates between 1.5 and 2 days, employees are offered mostly up to 1 day work from home.

ON-SITE, HYBRID AND FULLY REMOTE SHARE BY INDUSTRY



Hybrid or fully remote work is industry-dependent

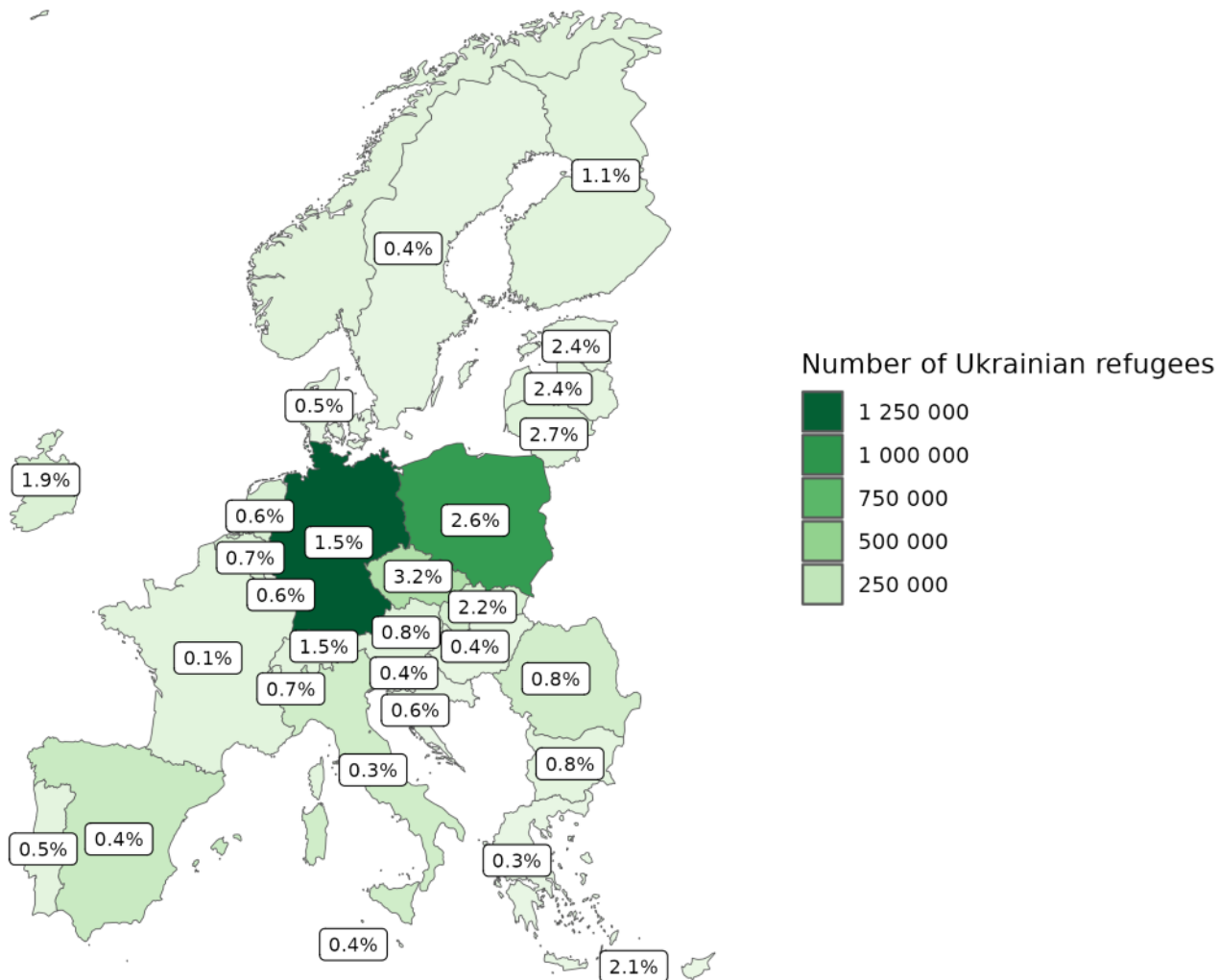
While almost 70% of full-time workers in information or finance and insurance enjoy hybrid or fully remote work arrangements, the opposite is true for hospitality and the food industry.

Flexible work arrangements may incentivize part of the workforce to be more active in the labor market or remain active for longer.

CEE region needs migrant workers

Migration can compensate, at least partially, for the dwindling workforce caused by lower birth rates.

The recent inflow of refugees from Ukraine show the need for labor force in the region. Unemployment rates did not spike, despite the high inflow of Ukrainians reaching as much as 3.2% of the population in Czechia and more than 2% in Poland and Slovakia. In contrast, matching on the labor market improved, meaning that Ukrainians filled positions that had been vacant for a long time or considered undesirable by the native population.

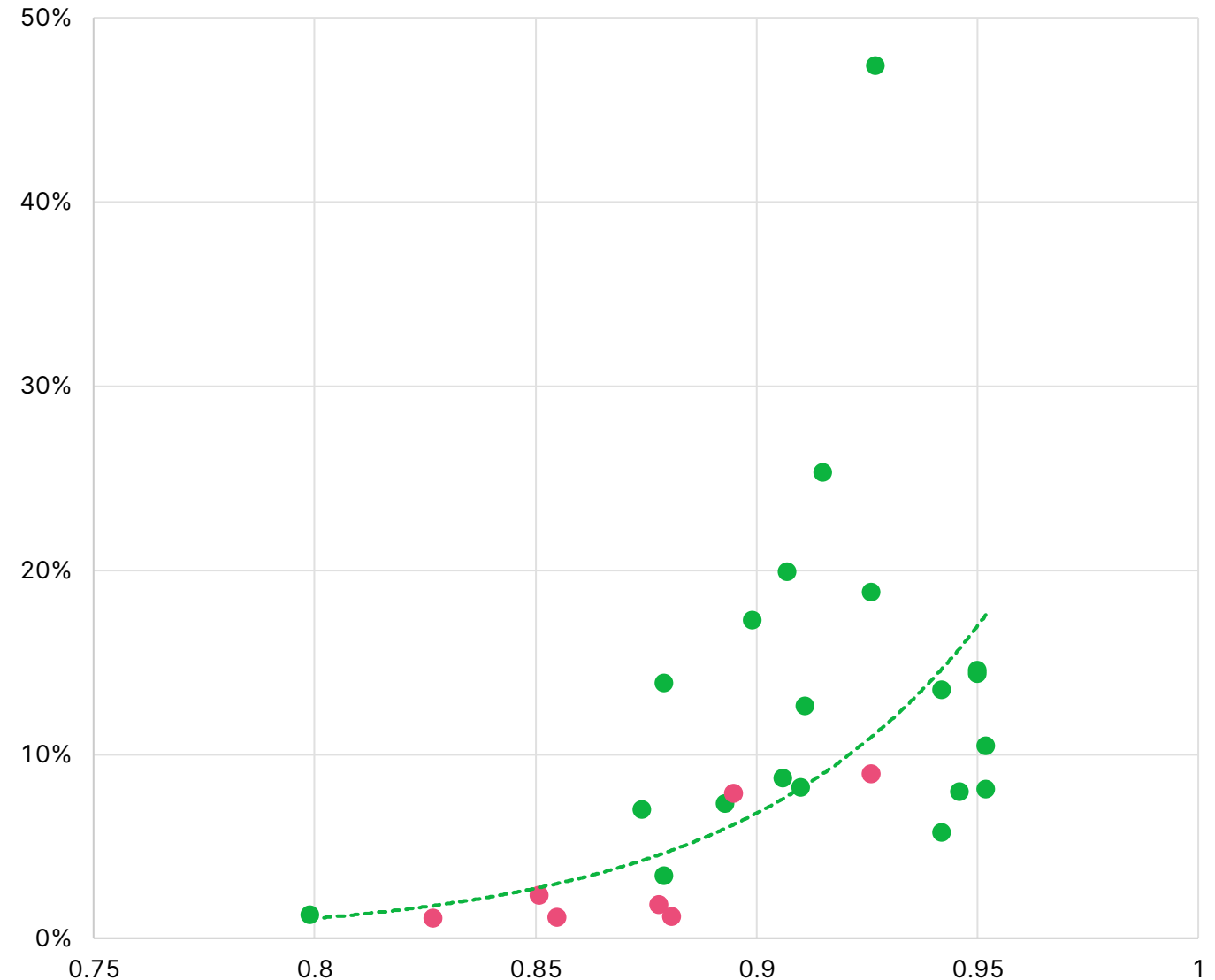


Is CEE region attractive for migrants?

Many economies face a shortage of skilled labor across many sectors. To be an attractive country of destination among other nations competing for the same potential migrants, attractive wages, good education, healthcare and a competitive currency are key. Existing migrant populations are a further 'pull' factor. The Human Development Index measures the first three factors using proxy variables.

Migration projections do exist, but they can hardly be accurate. Looking at the current attractiveness and migrant populations of destination countries is a reasonable indicator of which countries are more likely to receive needed migration.

HUMAN DEVELOPMENT INDEX (HDI) VS. MIGRANT POPULATION IN %

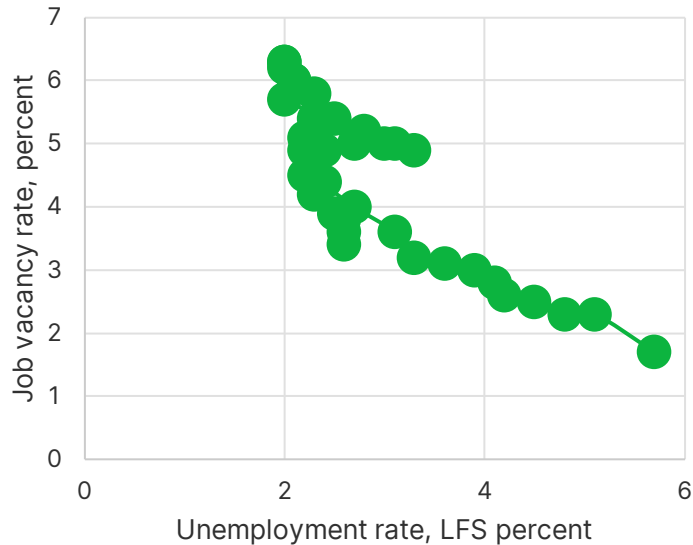


ENHANCING LABOR MOBILITY

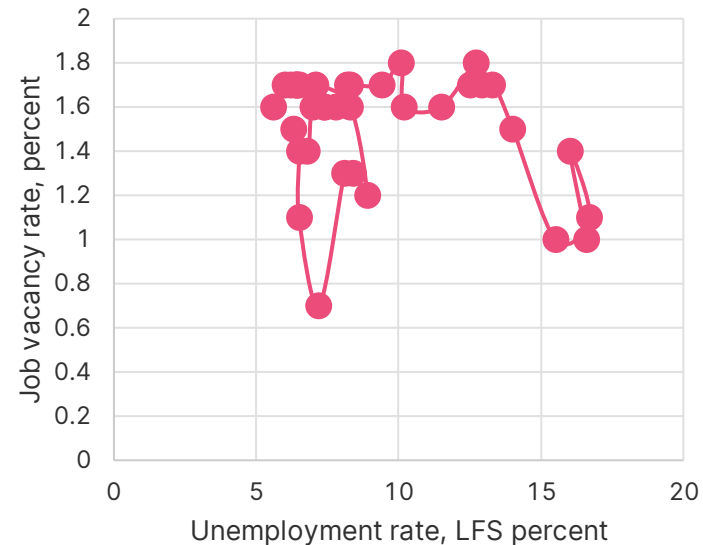
Migrants from Ukraine filled the long-term vacant jobs. Low structural mobility stands in the way of more efficient allocation. Further, the green transition will enforce major reallocation of jobs across certain industries.



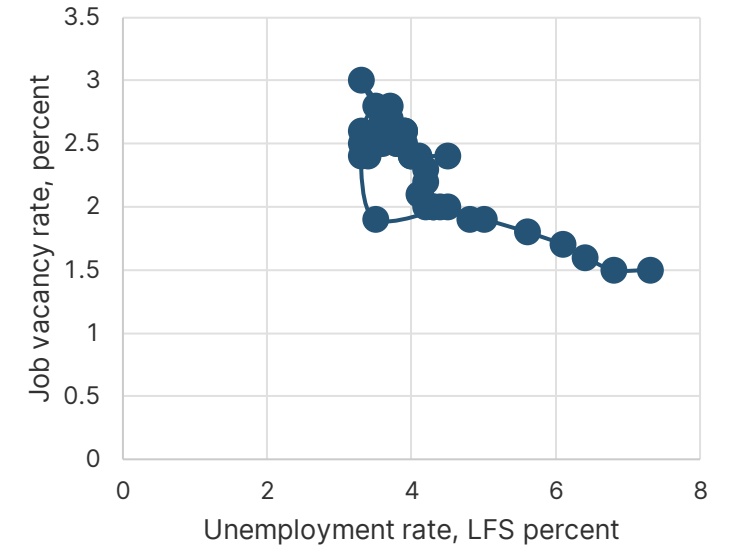
Beveridge curves have moved to the left since 2015 reflecting better matching.



Czechia



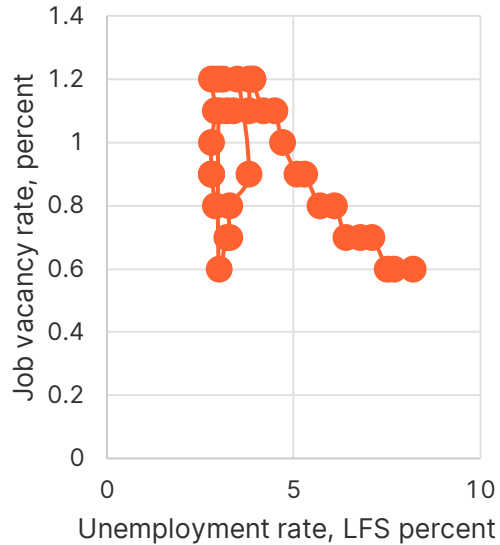
Croatia



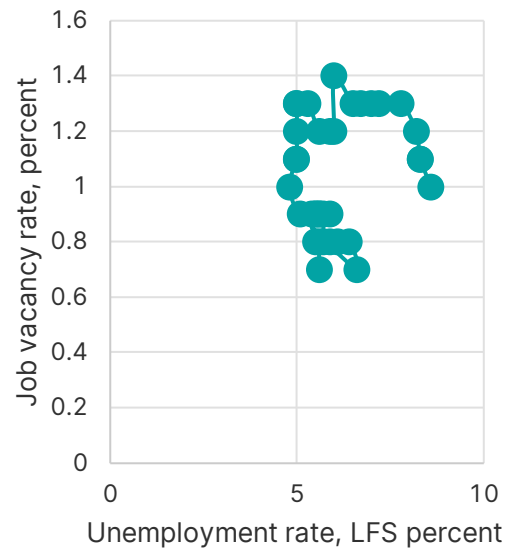
Hungary

A shift of the Beveridge curves to the left took place across the whole region. The shift to the left means that, at the same job vacancy rate, unemployment rates have been much lower recently compared to 2015. In other words, the matching on the labor market has visibly improved over the last decade.

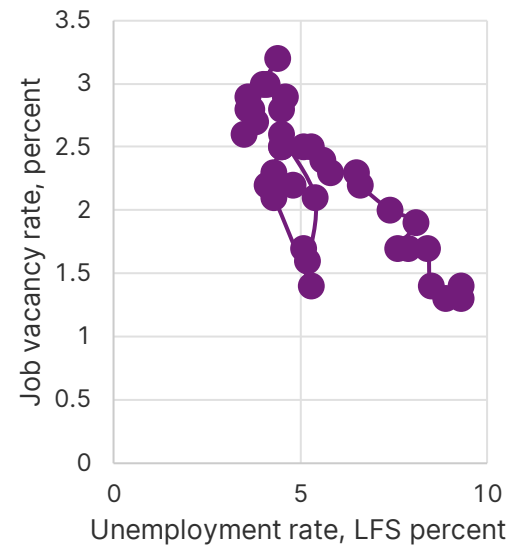
Beveridge curves have moved to the left since 2015 reflecting better matching



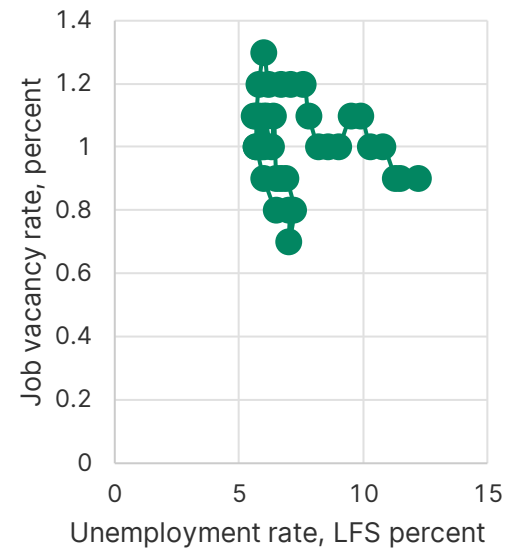
Poland



Romania



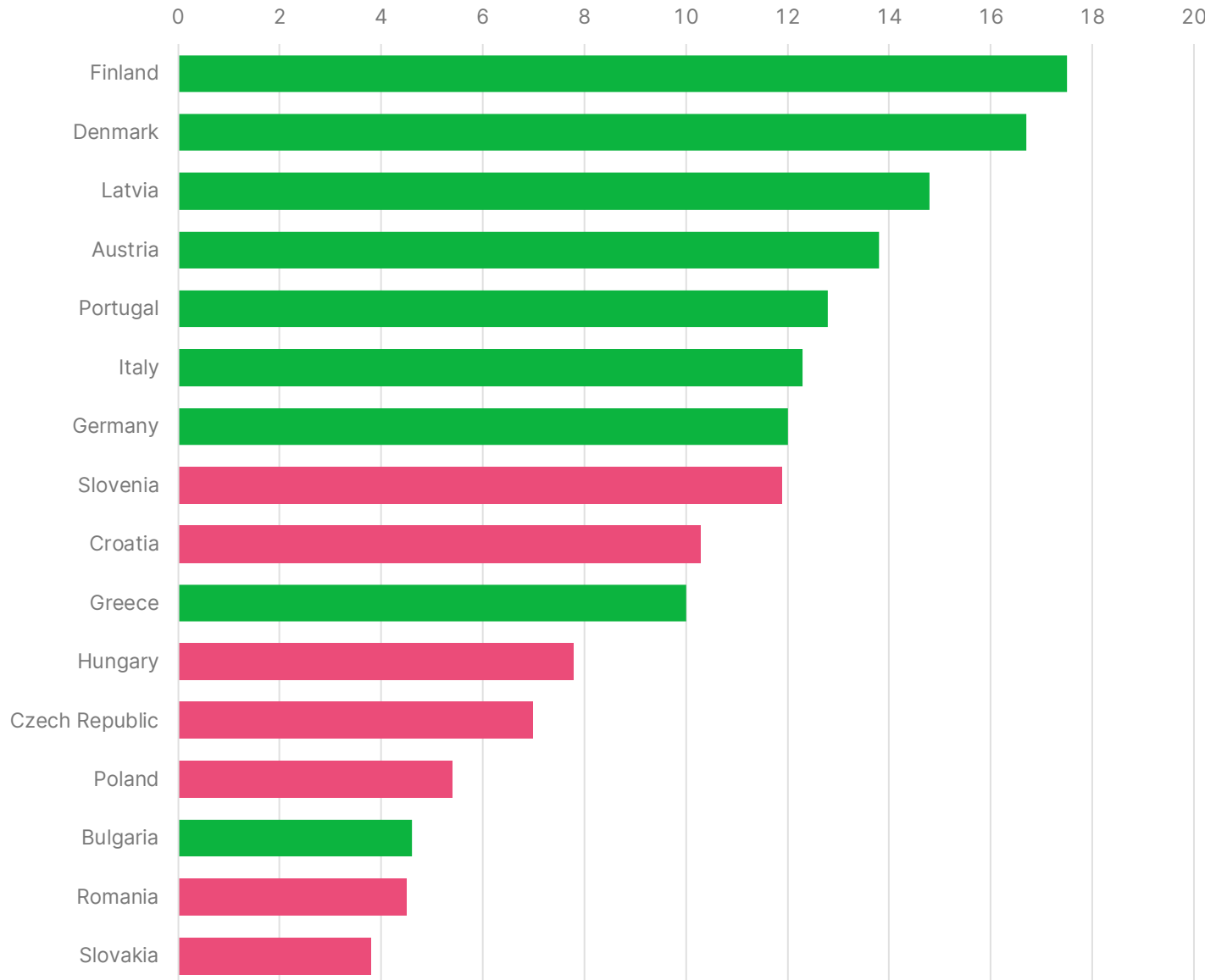
Slovenia



Slovakia

In countries such as Czechia, Poland and Slovakia, the improvement took place regardless of the high inflow of Ukrainian migrants. In other words, these countries absorbed a substantial increase in the workforce without seeing unemployment rates surge suggesting there is a need for additional workforce. The Ukrainian migrants were mostly hired for posts that are hard to fill long-term or those that are no longer of interest to the native population.

STRUCTURAL MOBILITY ON THE LABOR MARKET



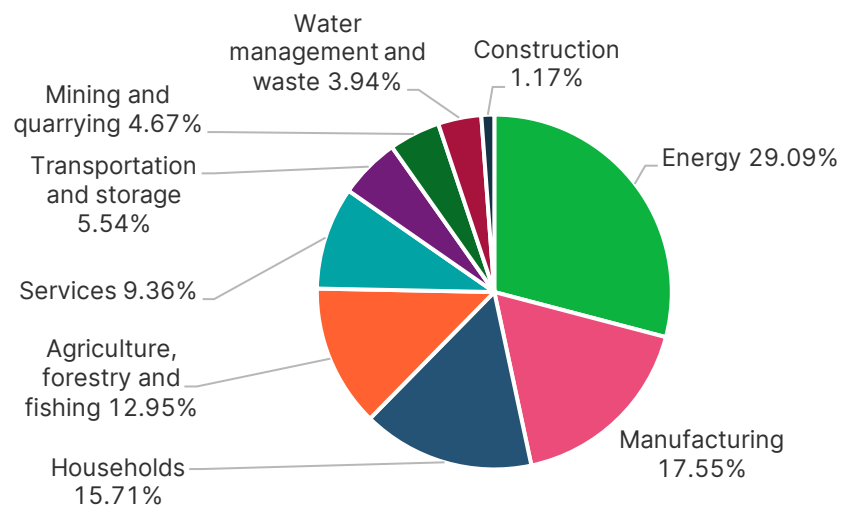
Low structural mobility keeps labor allocation less efficient

According to the estimates of Slovakia's Institute for Financial Policy (IFP), structural mobility on the labor market in Slovakia is the lowest in the EU. Last year, only 4% of Slovaks from the total working-age population changed their employment status. Other countries in the region are also characterized by low structural mobility.

An increase in labor market flows is also possible through lower regulation of the labor market and support for more flexible forms of employment.

Greenhouse emissions and employment in high emissions sectors

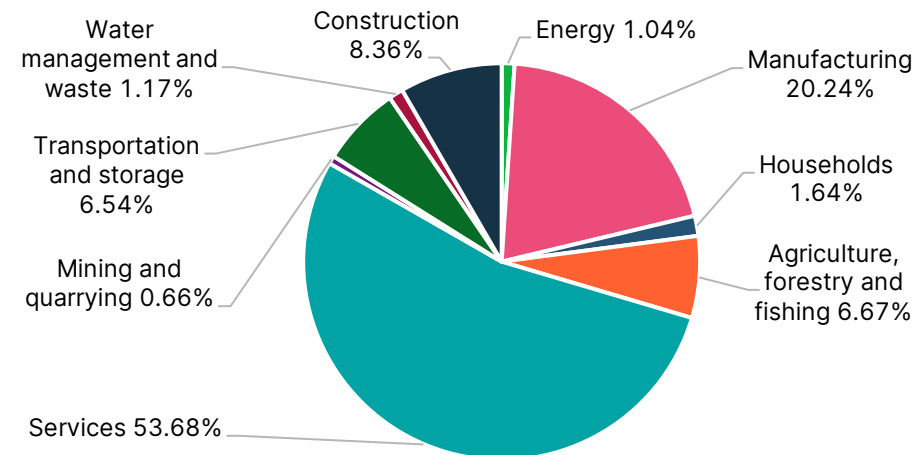
CEE Greenhouse gas emissions by sectors in 2022



Energy, manufacturing and agriculture are the largest contributors to greenhouse gas pollution in CEE7.

The net-zero transition will put lots of pressure on high-emission sectors to scale down. As a result, many working in those sectors will need to change employment or fully requalify.

CEE employment in 2023



The high-emission sectors account for 35% of total emissions but less than 2% of total employment.

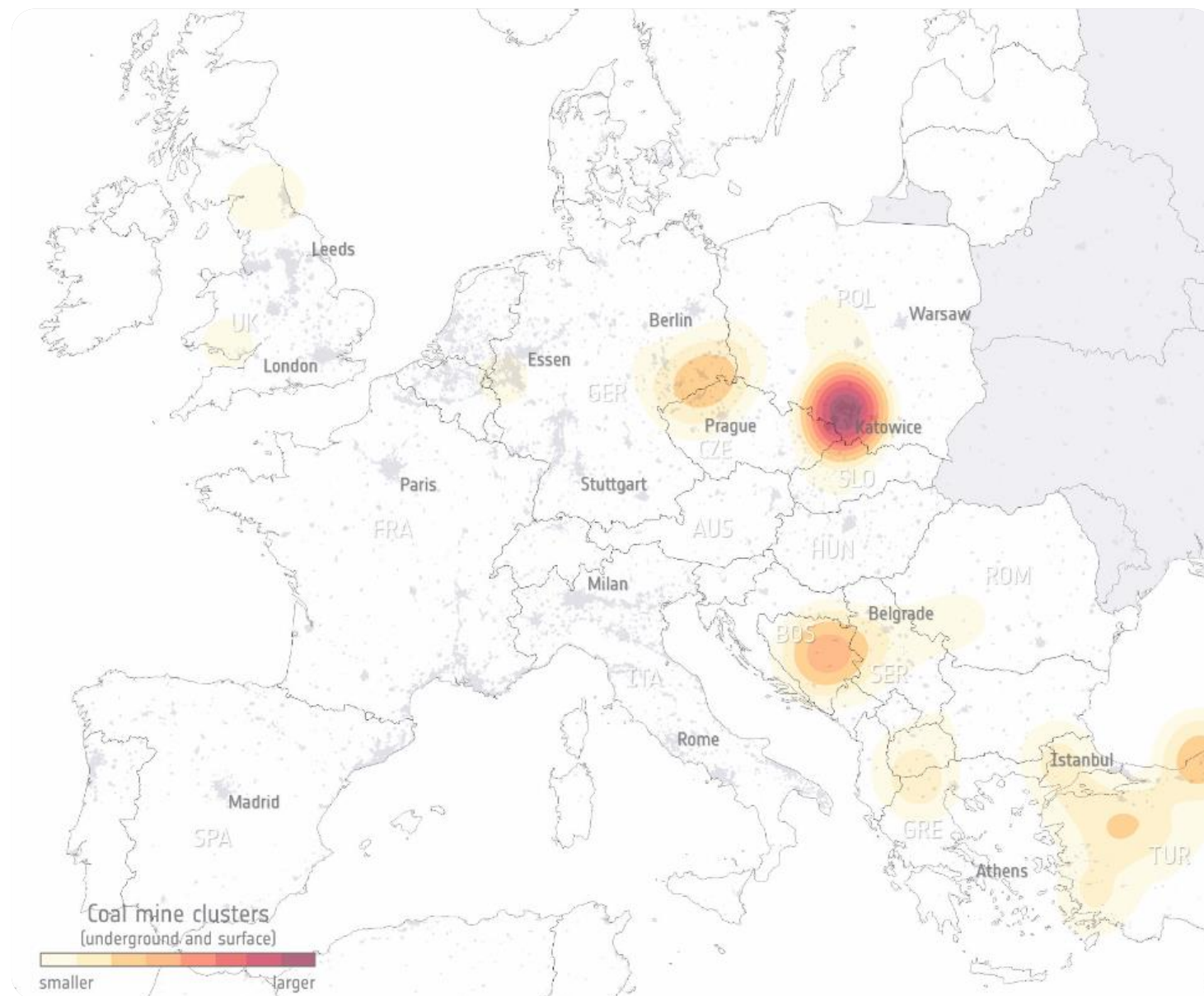
The transition may be painful, as these sectors usually employ low-skilled and low-qualified labor force, for which requalification may prove to be particularly challenging.

Slovakia closed its last coal mine at the end of 2023

Slovakia closed its last coal mine at the end of 2023 and ended coal-fired energy production in March 2024.

Starting in 2020, in cooperation with the mine operator and with EU funding, workers were offered a 6-month course consisting of interview preparation, a competency assessment and, based on its results, a fitting retraining course.

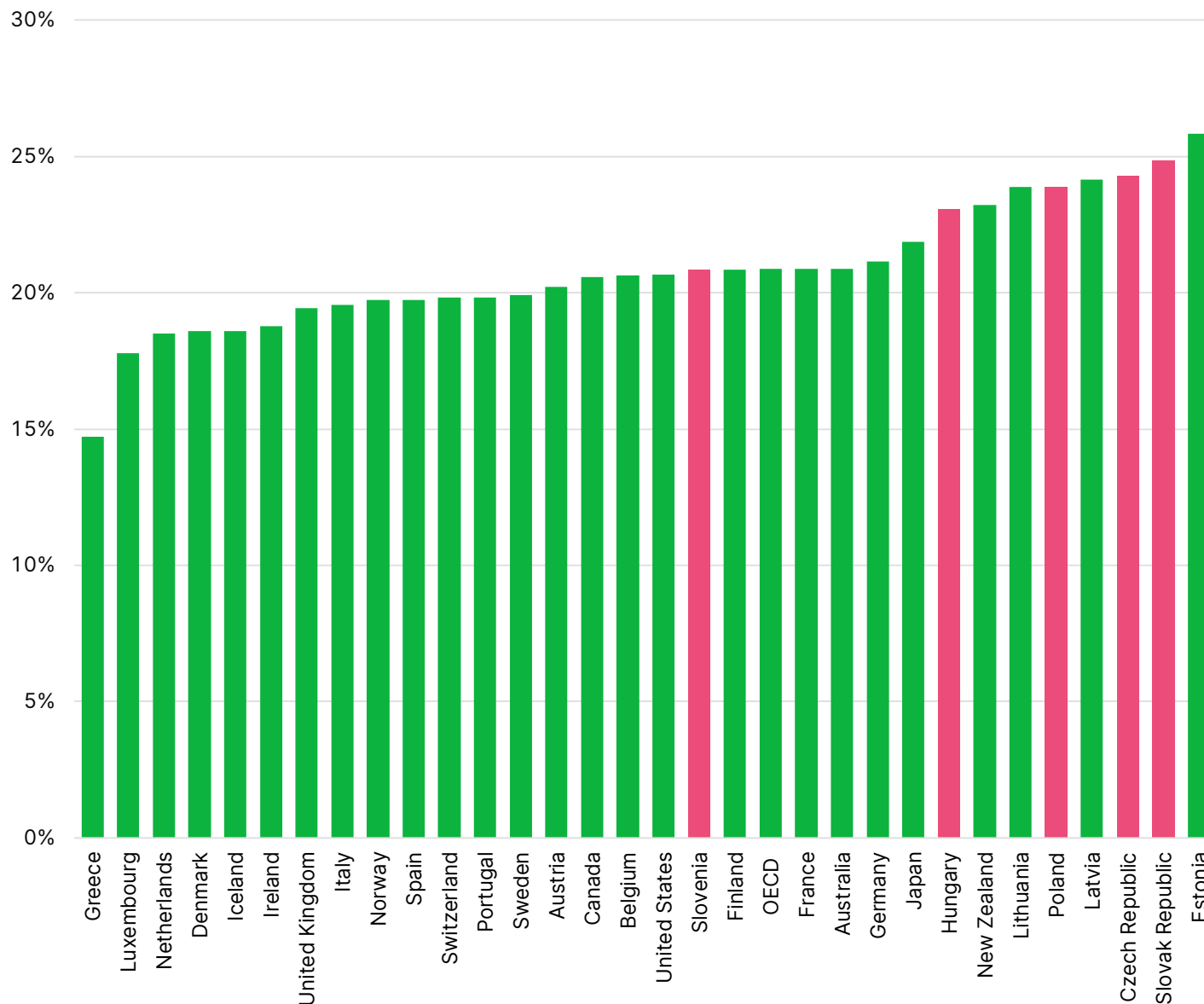
The project is successful, with more than 700 participating miners, and will continue until January 2025 in consideration of the miners and industry workers that worked in the coal industry until the end.



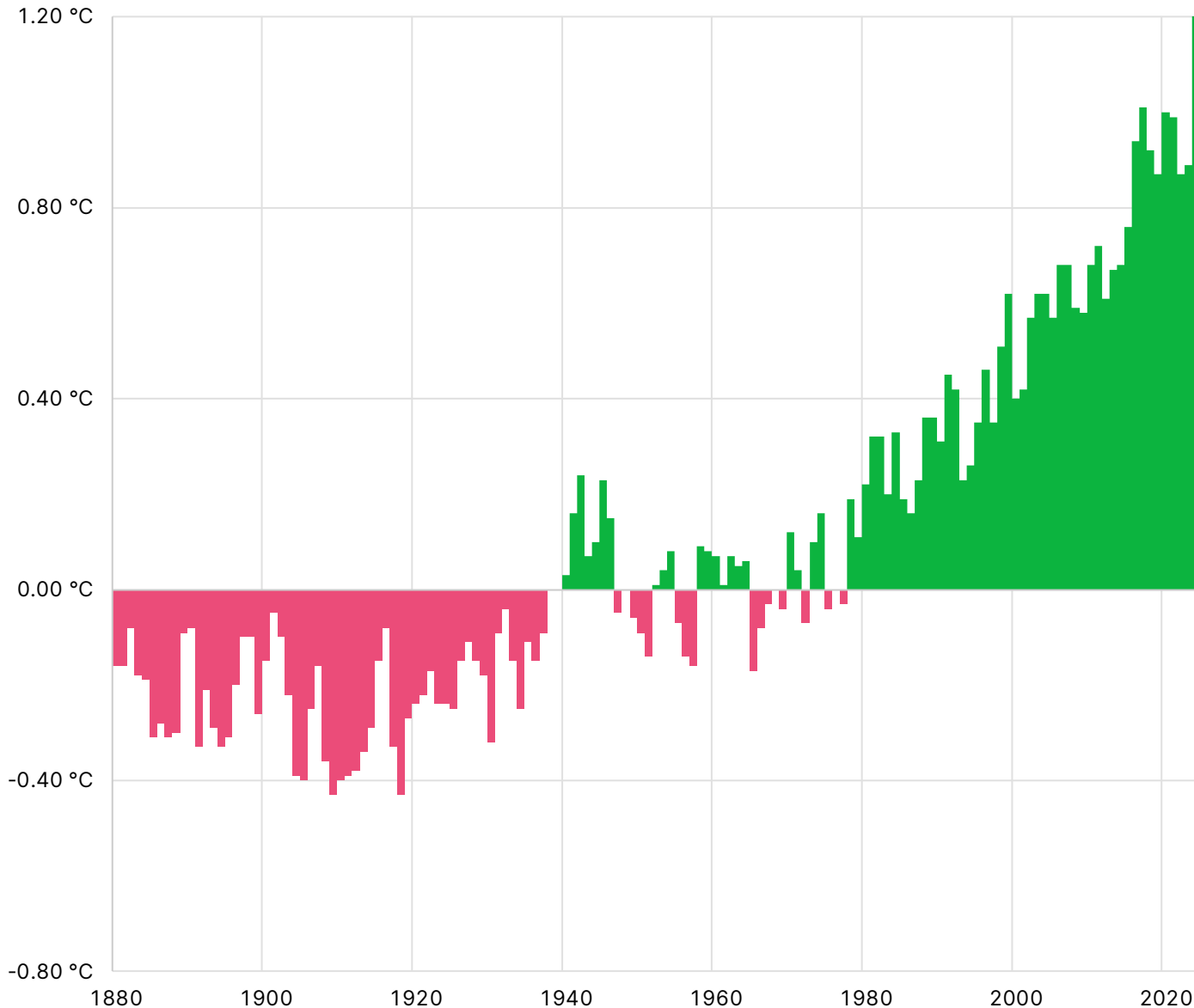
Green-driven occupations will be on the rise

Across the OECD, 20% of the workforce is employed in green-driven occupations, also considering jobs that do not directly contribute to emission reductions but are likely to be in demand because they provide goods and services needed for green activities.

The successful transition to a low-carbon economy will only be possible if workers can flexibly adapt and transfer from areas of decreasing employment to new industries.



ANNUAL AVERAGE GLOBAL SURFACE TEMPERATURE COMPARED TO 1901-2000 AVERAGE



How will increasing temperature impact labor market?

It is not office workers that would be mainly impacted, but outdoor workers, emergency responders and people working in hot indoor environments.

And it is not just extreme heat that workers will have to contend with. Poor air quality, disease-carrying insects, flooding and wildfires – all exacerbated by the climate crisis – will also have a significant impact on workers' ability to carry out their jobs.

Agriculture sector is also heavily exposed to impact of climate change.

PRODUCTIVITY GAINS

Artificial Intelligence (AI) should be seen as a complementary factor. Initial findings suggest AI could increase productivity. Life-long learning and digital skills will be crucial to requalify and adapt to the changing labor market.

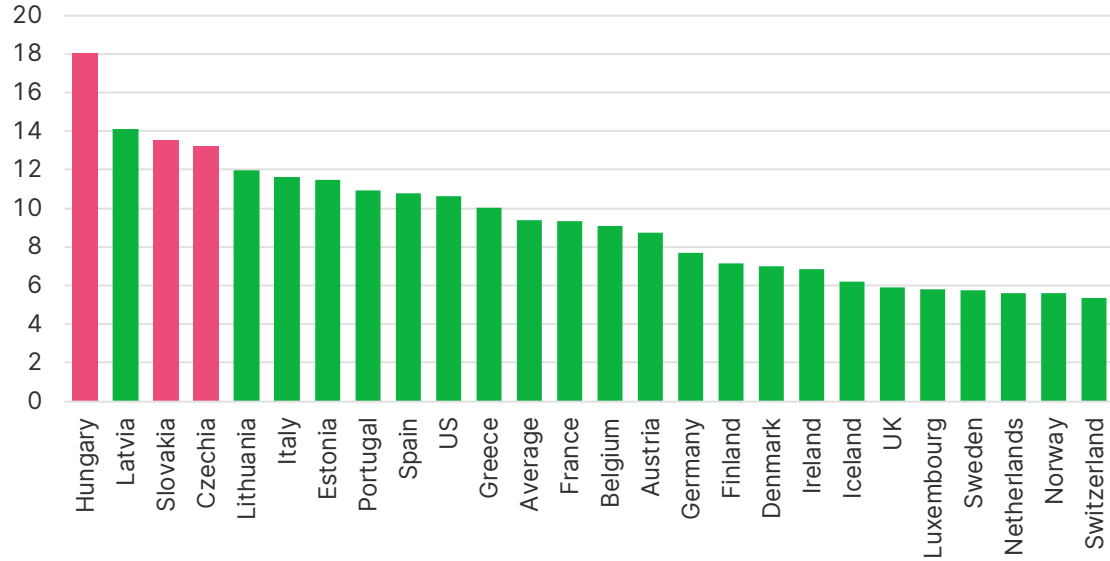


Impact of technological change on the labor market

At the aggregate level, there is little evidence that technological change has led to widespread unemployment over the centuries according to Hotte, Somers, Theodorakopoulos (2023). On one hand, technology-induced job losses can be significant within sectors of the economy; on the other hand, new technologies may induce job creation. Many technologies are designed to save labor by replacing human workers by machinery. Therefore, **low-educated workers doing repetitive tasks were most exposed to automation and most likely to bear the adjustment costs to technological change (training and occupational re-training)**. The replacement effect seems to be the strongest when it comes to robotization of the tasks or the workplace.

The recent advancement in the **use of Artificial Intelligence (AI) is likely to affect high-skilled occupations as well**. Although it is far too early to estimate the effects of AI on the labor market, **initial findings and evidence suggest that AI is likely to become a complementary factor for existing occupations**. The OECD recently presented the unanimous view of AI experts' that the main reason behind the adoption of these automation technologies is not the replacement of workers, but rather to complement labor, allowing work to be done faster and more efficiently. They mentioned that AI and other technologies do not automate jobs as a whole, but only some skills and abilities within jobs. All of the experts recognize the importance of employees' skills for the adoption of automation technologies.

Risk of automation, including AI, remains high in CEE



Share of employment in occupations at high risk of automation

Occupations at high risk of automation are those for which more than 25% of important skills and abilities can be replicated by technologies. Within the CEE region, Hungary, Slovakia and Czechia are the most exposed.

OCCUPATIONS AT HIGH RISK OF AUTOMATION vs. LOW RISK OF AUTOMATION



Occupations by degree of automatability

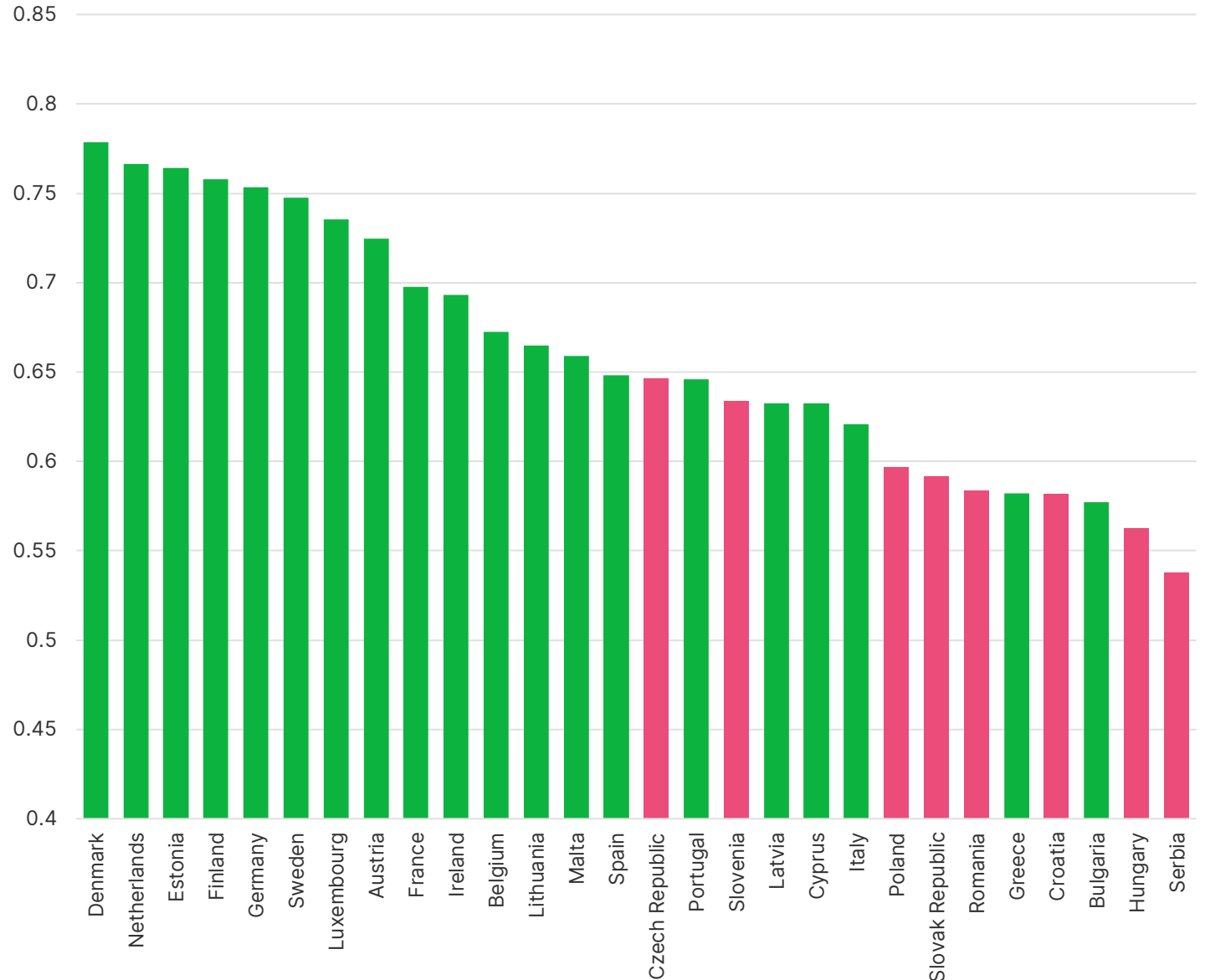
Occupations at highest risk are construction and extraction, farming, fishing, and forestry, production, and transportation occupations. These occupations account for about 28% of employment (OECD average). The least at-risk jobs include legal, education, management and community and social service jobs.

As AI use will grow, being prepared for technology is crucial

The IMF's AI preparedness index uses macro indicators from four dimensions to best cover an economy's AI preparedness: digital infrastructure, human capital and labor market policies, innovation and economic integration and regulation and ethics.

Within Europe, CEE countries seem to lag behind in terms of readiness for AI adoption, but a global overview changes this perspective, showing a high level of the region's readiness to adopt AI technology.

AI PREPAREDNESS INDEX



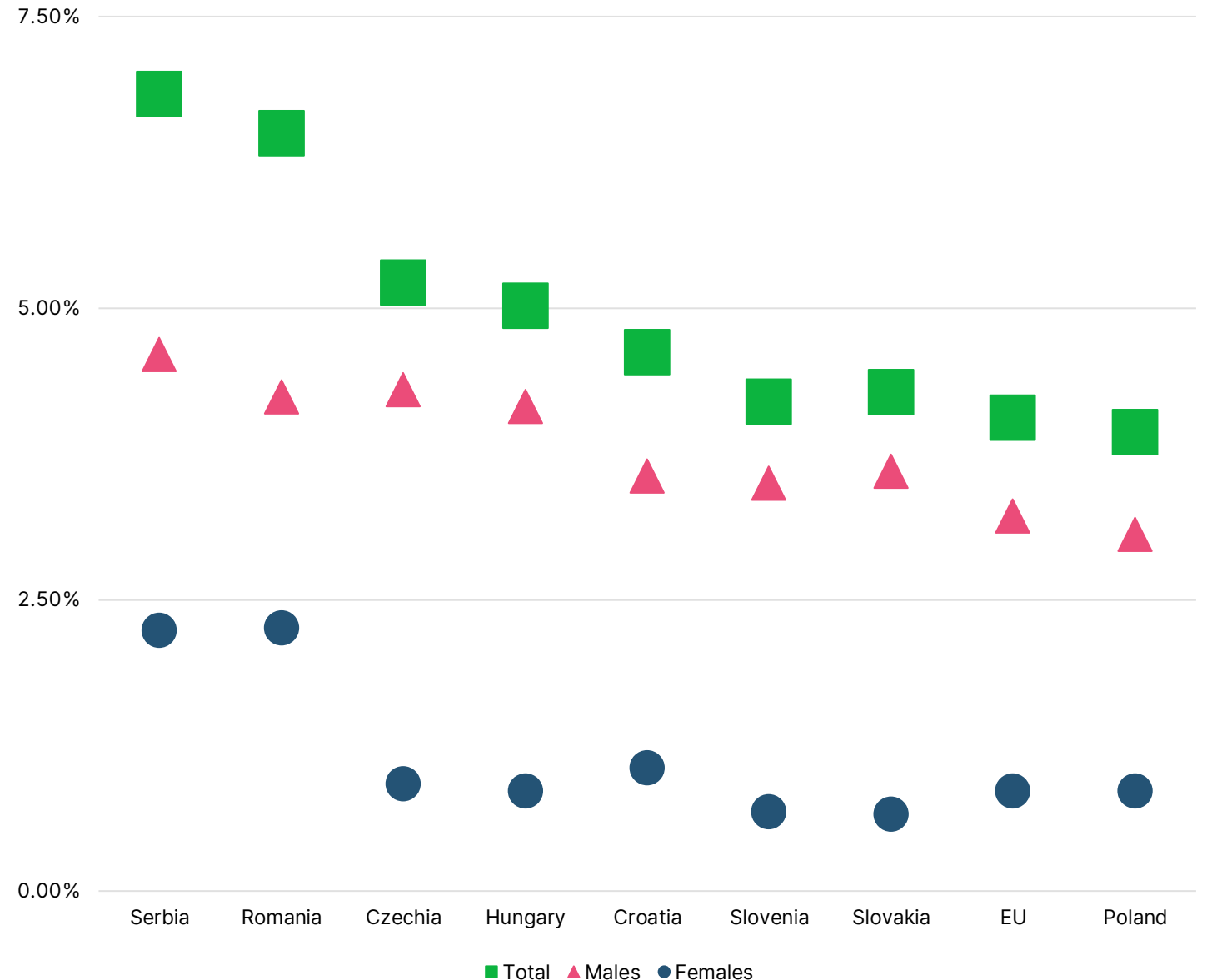
AI development and product integration will require educated workforce

AI development and product integration require a highly educated workforce, largely STEM graduates, especially from the field of computer science and software development.

In all CEE countries but one, the proportion of computer science graduates to all graduates is higher than the EU average. Poland is just below par.

Still, the field of computer science continues to be male-dominated, with only roughly 15% to 35% of graduates being female.

AVERAGE DISTRIBUTION OF COMPUTER SCIENCE GRADUATES 2018-2022



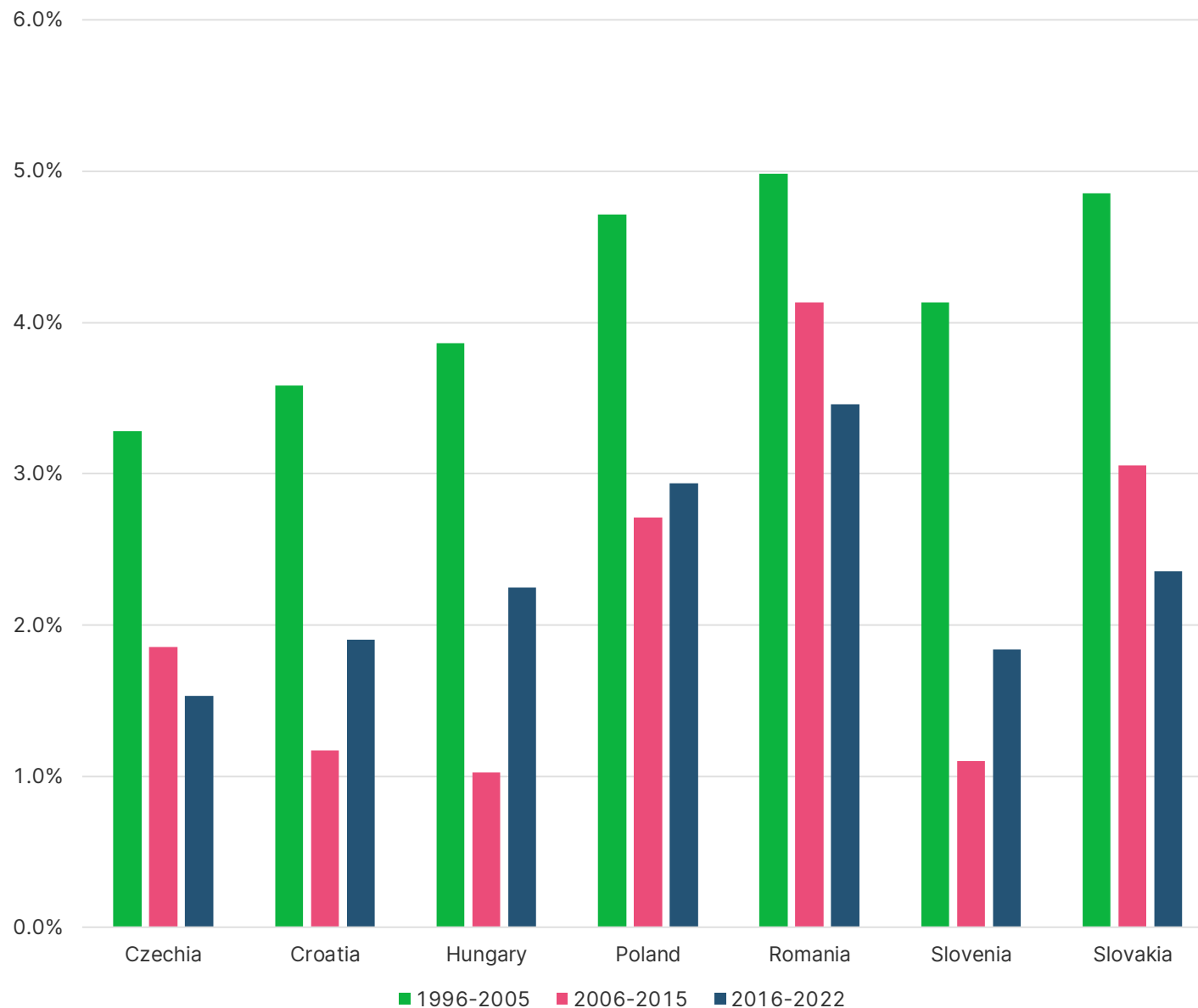
Initial findings suggest AI can boost productivity

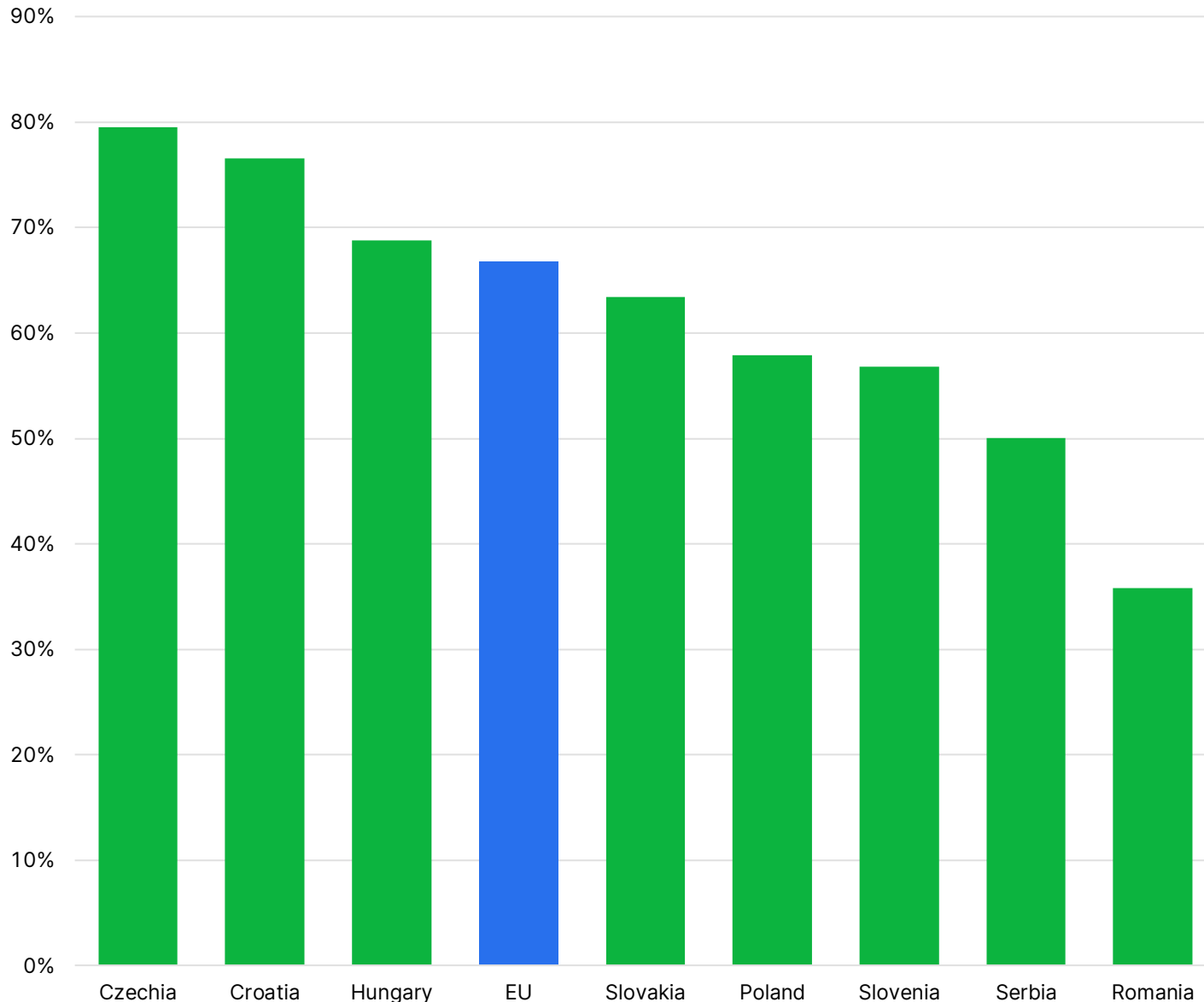
The results from an online experiment in which professionals were randomly exposed to ChatGPT show that use of it substantially raised productivity. The average time taken decreased by 40% and output quality rose by 18% (Noy and Zhang, 2023)

Workers in the manufacturing and finance sectors who work with AI tend to be positive about its impact on performance and working conditions (OECD, 2023).

If productivity gains are sufficiently large, income levels could surge for most workers (IMF, 2024).

AVERAGE PRODUCTIVITY GROWTH IN THE REGION





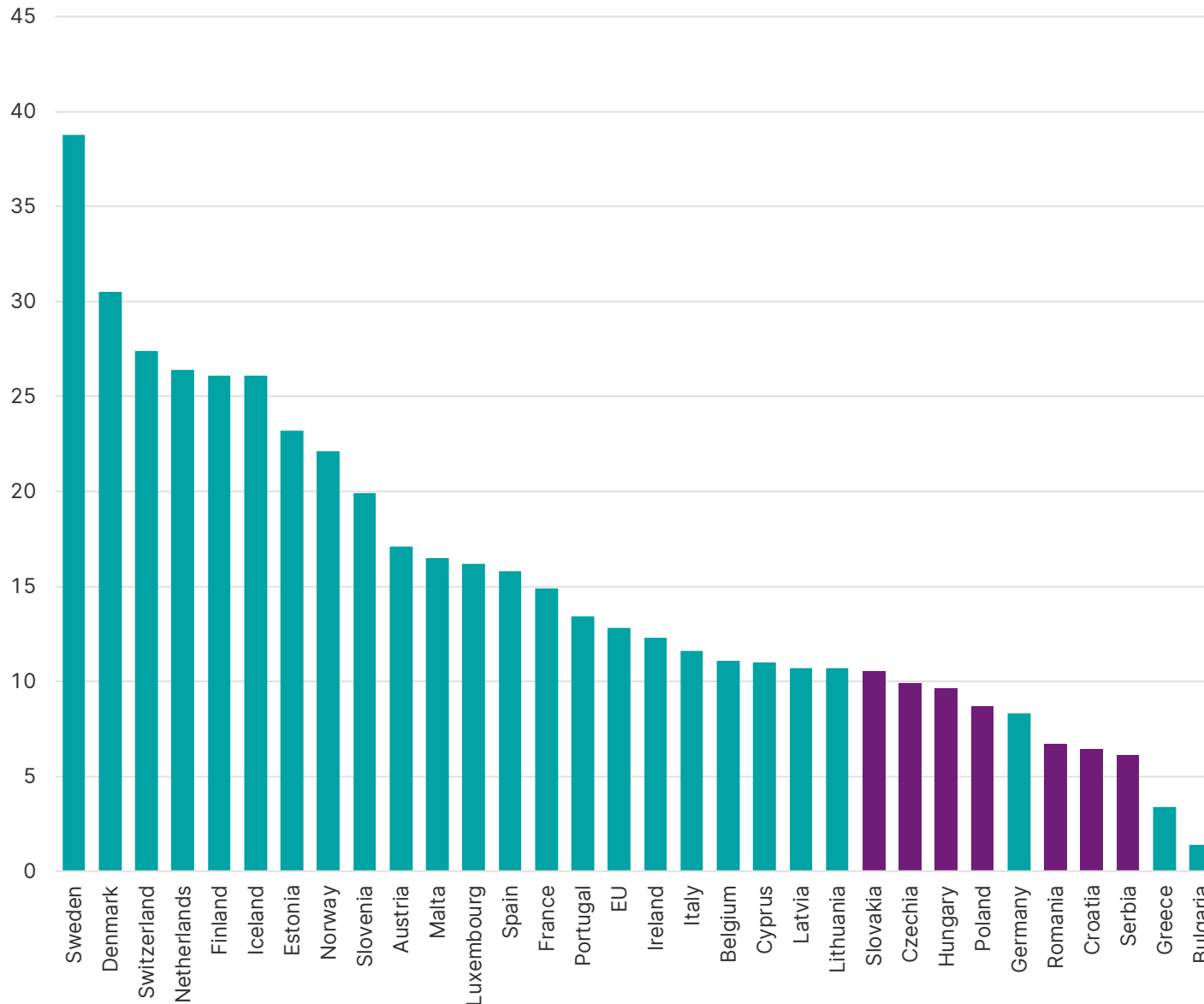
Digital literacy

The level of digital skills varies strongly among CEE countries.

Digital literacy is key for digital productivity and the ability to learn and adapt to new technology.

Eurostat understands information and data, communication and collaboration, content creation, safety and problem solving skills as the five most important 'digital skills'.

Czechia, Croatia and Hungary lead the CEE countries in digital skills and are above the EU average. Among the rest, Romania is a stark outlier, as the only country with less than 40% or 50% of workers with good digital skills.



Lifelong education remains lowest in region

Lifelong education, which is not sufficiently developed in the region, represents a challenge for effective adoption of AI and for green transition, as well as following labor market adjustments.

The addition of skills even after completing formal education is essential for the ability to respond flexibly to changing conditions on the labor market.

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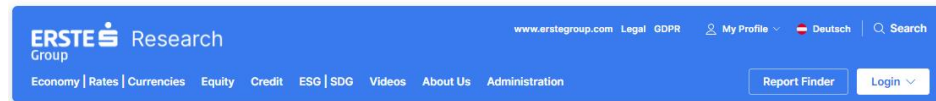


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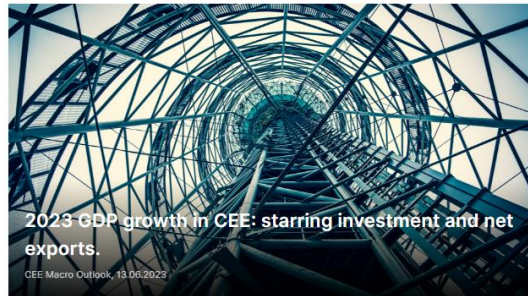


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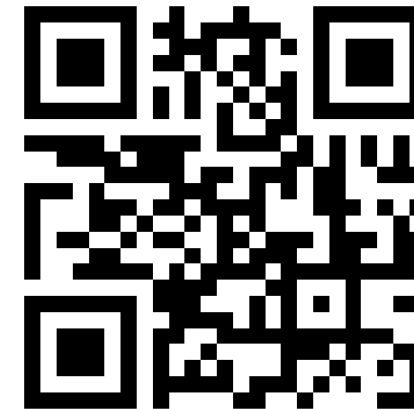
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