

Short- and medium-term sectoral employment forecasts 2021–2027

Robert Stehrer

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european trade union institute

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Contents

Executive summary	5
1. Introduction	7
2. Methodological approach, trends and assumptions	10
2.1 Outline of methodological approach	10
2.2 Implementation	11
2.3 Trends and assumptions	11
3. Baseline scenario	18
3.1 Total economy level	18
3.2 Industry level (EU27)	21
3.3 Details by country and industry	23
4. Labour market groups	27
4.1 Sex	27
4.2 Age	29
4.3 Occupations	31
5. Alternative scenarios	33
5.1 Important challenges unfolding	33
5.2 Developments affecting economic performance	34
5.3 Structural developments	35
5.4 Assumptions for and results of alternative scenarios	36
6. Summary and conclusions	42
Bibliography	44
Appendix	45

Executive summary

This working paper provides forecasts of changes in employment levels, in total, by sector and by different labour force groups in Europe, from 2022 to 2027. These forecasts of employment levels, both in terms of persons employed and in terms of hours worked, have been produced under three different scenarios, a baseline, an optimistic and an adverse one. These scenarios incorporate assumptions about possible developments such as the evolution of the war in the Ukraine and their impact on energy prices and inflation, the evolution of the Covid-19 pandemic and any public health measures they may trigger, and developments in the EU economic governance and the policy responses of the ECB to inflation, all of which are expected to influence output growth. These developments are linked with different projections about output growth from 2022 to 2027 and their likely translation into sectoral output demand trends. For example, a reform in EU economic governance which would result in requirements on member states to reduce their public debt too fast through budget surpluses, or too sharp a tightening of the monetary policy of the ECB would be associated with slower output growth or outright recession. Our baseline scenario is based on the output growth forecasts of the European Commission in July 2022 for 2022–2023 and on the IMF output growth forecasts for the years thereafter.

Notable findings:

- While by 2027, under the baseline scenario, the number of employed persons is expected to have recovered to its 2021 level in the EU and most member states, it is projected to be lower than in 2021 in Romania, Ireland and Lithuania. Under an adverse scenario, the number of employed persons by 2027 is not expected to have recovered to its 2021 levels in Belgium, Poland and Latvia in addition to the aforementioned countries. It will just about have reached its 2021 levels in Germany, France, Bulgaria, and Czechia. By contrast, under the optimistic scenario, by 2027, the number of employed persons will have not recovered to its 2021 levels only in Romania and Ireland.
- Additionally, under the baseline scenario, by 2027, the number of hours worked is expected to be lower than in 2021 in Romania, Ireland, Estonia, Lithuania, Latvia, Poland and Denmark. Under the adverse scenario, the number of hours worked will not have recovered in Belgium, Czechia, Germany, France, and Sweden in addition to the aforementioned countries.

- If we compare the projected number of employed persons in 2027 to that of 2019, that is, prior to the pandemic, then this figure will not have recovered to its 2019 levels, in Ireland, Lithuania, Latvia, and Romania. In other words, the combined impact of the pandemic and the war is expected to have lasting effects until 2027 in the number of persons employed under the baseline scenario. If we look into the number of hours worked, by 2027, they are not expected to have reached their 2019, pre-pandemic levels in Czechia, Germany, Ireland, Latvia, Romania and Slovakia under the baseline scenario. Thus, the recovery that we have seen in 2021 in some member states is not likely to have continued by 2027 in some member states under the baseline scenario.
- Looking at shorter time-horizons, under the baseline scenario, by 2023, the number of hours worked is expected to have recovered to its pre-pandemic levels (2019) in only Denmark, Greece, Croatia, Hungary, the Netherlands, Poland, Portugal and Slovenia. In contrast, under the same scenario, by 2023, the number of persons employed is expected to have recovered to its pre-pandemic levels in the EU27 as a whole and in all but a handful of countries, namely Bulgaria, Czechia, Estonia, Lithuania, Latvia, Portugal, Romania and Slovakia.
- Under the adverse scenario, by 2023, the number of hours worked will be 1.7% lower than its 2021 level in the EU27 as a whole and lower than in 2021 in 15 member states, most notably, Belgium, Bulgaria, Czechia, Germany, Denmark, Finland, France, Ireland, Lithuania, Latvia, Poland, Romania, and Slovakia. Under this negative scenario, the number of hours worked in 2024 in the EU27 will be 2% lower than in 2021.
- Turning into employment developments by sector, under the baseline scenario, by 2027, hours worked in the EU are projected to have recovered to their 2021 levels in all NACE industries, except agriculture (12.9% lower), construction (1.9% lower) and financial and insurance activities (4.3% lower). Hours worked in information and communication, and professional, scientific, technical, administration and support services are expected to have grown the most by 2027 compared to 2021.
- Under the adverse scenario, by 2027, the hours worked are expected to be lower than in 2021 in agriculture (14% lower), manufacturing and other industry (4.2% lower, with hours worked in manufacturing alone expected to be 3% lower), construction (2.2% lower) and wholesale and retail trade, transportation and storage, accommodation and food service activities (1.1 % lower). By contrast, under the adverse scenario, by 2024, hours worked are expected to have just about recovered to their 2021 level only in public administration, health and education, real estate, and professional and other services, whereas they will be considerably lower (between 7.9 and 1.2 %) than in 2021 in all other sectors.

1. Introduction

Economies in Europe and worldwide (except China, which expects lower growth than the government planned) experienced a relatively strong recovery in the aftermath of the various waves of the Covid-19 pandemic at the end of 2021 and the beginning of 2022. Because of the vaccine roll-out and the milder omicron variant the economic and health-care impact of the last wave of the pandemic was much less severe than the previous waves, which started in 2020. Nevertheless, the future remains uncertain concerning potential mutations of the virus, their likely spread in Europe in autumn and winter, and other factors.

Unfortunately, on top of these developments, the Russian invasion of Ukraine in February this year has given rise – apart from the human and social disaster and the geopolitical consequences – to severe economic disruptions, such as high inflation rates and shortages of various products, especially energy. Furthermore, sanctions have been imposed, which will have strong negative impacts on growth and employment.

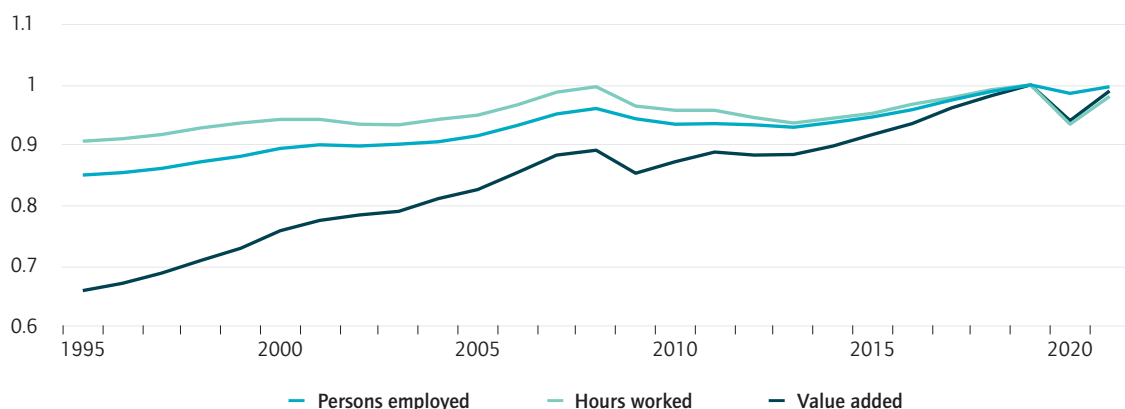
At the moment, it seems that the most important short and long-term challenges for future employment dynamics include: (i) the consequences of the Russian war against Ukraine, including the energy shortages resulting from supply disruptions, the accompanying inflation surge and the political and macroeconomic measures to fight this economic turmoil; (ii) the future development of the Covid-19 pandemic, particularly in autumn and winter; (iii) EU economic governance and related policies, including the dual transition to a digital and net-zero carbon economy and debates on the EU's open strategic autonomy; and (iv) the prevalence and conditions of remote working and changes in people's perceptions of work. These challenges might lead to important changes in employment levels and sectoral employment structures, first because of recent and current shocks (such as energy shortages) and second because of their aftermath and policy reactions. Some of these more long-haul structural changes and related policy responses were already under way before the pandemic, however.

This report provides forecasts of changes in total and sectoral (NACE Revision 2 'high-level' section aggregates) employment levels in Europe from 2022 to 2027, produced under scenarios combining macroeconomic forecasts and likely sectoral trends. The forecasts apply to all EU27 Member States and include results for the EU27 overall. These forecasts will provide possible scenarios to support, reinforce and stimulate policy advice for the European

labour movement. We generally follow the approach developed in Jestl and Stehrer (2021), outlined in Section 2.

The starting point of the scenarios is the employment situation in 2021, presented in Figure 1.1, together with long-term developments since 1995. Employment in terms of persons employed and, to a lesser extent, hours worked in the EU27 almost regained the pre-pandemic level in 2021. This is also the case for the individual Member States, as presented in Table 1.1. Regarding number of people employed, lower dynamics are observed for Latvia and Estonia. Considering hours worked, several countries are still below their 2019 levels, that is, before the pandemic outbreak. Concerning the longer run, it is interesting to note that the level of hours worked has just regained its 2008 level, whereas the number of people employed has increased since then.

Figure 1.1 Long-term development of persons employed and hours worked, EU27 (Index, 2019=1)



Source: Eurostat; author's calculations.

Figure 1.1 also indicates that value added (measured in real terms, that is, chain-linked volumes) has been growing much faster than employment, the difference being labour productivity growth – which therefore must be considered in any future scenarios – which is larger in terms of hours worked than persons employed.

Table 1.1 Long-term developments of persons employed (Index 2019=1)

Country	Persons employed												Hours worked											
	1995	2000	2008	2009	2010	2011	2012	2015	2018	2019	2020	2021	1995	2000	2008	2009	2010	2011	2012	2015	2018	2019	2020	2021
EU27	0.85	0.89	0.96	0.94	0.94	0.94	0.93	0.95	0.99	1.00	0.99	1.00	0.91	0.94	1.00	0.96	0.96	0.96	0.95	0.95	0.99	1.00	0.93	0.98
AT	0.79	0.83	0.90	0.90	0.90	0.92	0.93	0.94	0.99	1.00	0.98	1.00	0.87	0.92	0.96	0.93	0.93	0.95	0.94	0.94	0.98	1.00	0.91	0.96
BE	0.79	0.84	0.91	0.91	0.92	0.93	0.93	0.94	0.98	1.00	1.00	1.02	0.79	0.85	0.92	0.90	0.92	0.94	0.94	0.94	0.99	1.00	0.91	
BG	1.00	0.92	1.08	1.06	1.02	1.00	0.97	0.98	1.00	1.00	0.98	0.98	1.04	0.91	1.11	1.06	1.02	1.00	0.97	0.97	1.00	1.00	0.95	0.96
CY	0.66	0.71	0.91	0.91	0.91	0.91	0.88	0.83	0.96	1.00	0.99	1.01	0.70	0.75	0.94	0.93	0.93	0.93	0.90	0.84	0.96	1.00	0.94	0.97
CZ	0.94	0.89	0.96	0.94	0.93	0.93	0.93	0.95	1.00	1.00	0.98	0.99	0.96	0.95	0.96	0.94	0.94	0.94	0.93	0.94	1.00	1.00	0.92	0.95
DE	0.84	0.88	0.90	0.90	0.91	0.92	0.93	0.95	0.99	1.00	0.99	0.99	0.93	0.94	0.95	0.92	0.94	0.95	0.95	0.97	0.99	1.00	0.95	0.97
DK	0.87	0.92	0.98	0.95	0.93	0.93	0.92	0.94	0.99	1.00	0.99	1.01	0.90	0.98	1.02	0.98	0.96	0.97	0.96	0.97	0.99	1.00	0.97	1.01
EE	0.97	0.89	0.98	0.88	0.84	0.89	0.91	0.95	0.99	1.00	0.97	0.97		0.99	1.08	0.91	0.88	0.96	0.96	0.99	0.99	1.00	0.94	1.02
EL	0.89	0.92	1.04	1.03	1.00	0.96	0.92	0.92	0.99	1.00	0.99	0.99	0.92	0.96	1.08	1.06	1.01	0.98	0.96	0.93	1.01	1.00	0.89	0.97
ES	0.68	0.82	1.04	0.97	0.96	0.93	0.90	0.91	0.97	1.00	0.96	0.98	0.70	0.85	1.06	0.99	0.97	0.95	0.90	0.91	0.98	1.00	0.89	0.96
FI	0.77	0.86	0.96	0.94	0.93	0.95	0.96	0.94	0.98	1.00	0.98	1.01	0.84	0.92	1.00	0.96	0.96	0.97	0.97	0.95	0.99	1.00	0.97	1.01
FR	0.83	0.90	0.95	0.94	0.94	0.95	0.95	0.96	0.99	1.00	0.99	1.01	0.88	0.92	0.97	0.95	0.96	0.97	0.97	0.96	0.99	1.00	0.92	0.99
HR	0.92	0.91	1.03	1.02	0.98	0.95	0.91	0.92	0.97	1.00	0.99	1.00	0.96	0.96	1.08	1.07	1.04	1.00	0.95	0.92	0.96	1.00	0.99	1.00
HU	0.84	0.87	0.86	0.84	0.84	0.84	0.84	0.91	0.99	1.00	0.99	1.01	0.95	0.98	0.89	0.86	0.86	0.85	0.85	0.93	0.99	1.00	0.95	0.99
IE	0.57	0.73	0.92	0.85	0.83	0.81	0.81	0.89	0.97	1.00	0.97	1.03	0.64	0.81	0.97	0.88	0.79	0.78	0.77	0.86	0.97	1.00	0.90	0.96
IT	0.86	0.90	0.99	0.98	0.97	0.97	0.97	0.96	0.99	1.00	0.98	0.99	0.93	0.98	1.05	1.02	1.01	1.01	0.99	0.97	1.00	1.00	0.89	0.96
LT	1.07	1.01	1.03	0.95	0.90	0.90	0.92	0.97	0.99	1.00	0.98	1.00	1.00	1.00	1.07	0.95	0.92	0.91	0.92	0.97	0.99	1.00	0.94	0.97
LU	0.47	0.57	0.75	0.76	0.77	0.80	0.82	0.87	0.97	1.00	1.02	1.05	0.50	0.61	0.79	0.77	0.78	0.80	0.82	0.88	0.97	1.00	0.96	0.96
LV	1.04	1.03	1.17	1.01	0.94	0.95	0.97	0.99	1.00	1.00	0.98	0.95	1.19	1.18	1.26	1.05	0.97	1.00	1.00	1.01	1.02	1.00	0.94	0.93
MT	0.57	0.58	0.64	0.64	0.65	0.67	0.69	0.79	0.95	1.00	1.03	1.06	0.58	0.63	0.68	0.68	0.67	0.67	0.68	0.74	0.90	1.00	0.95	0.96
NL	0.76	0.85	0.93	0.92	0.91	0.92	0.92	0.92	0.98	1.00	0.99	1.01	0.78	0.87	0.92	0.91	0.90	0.91	0.90	0.91	0.97	1.00	0.97	1.00
PL	0.90	0.89	0.96	0.96	0.94	0.94	0.94	0.97	1.00	1.00	1.00	1.01	0.94	0.92	0.99	0.99	0.96	0.96	0.96	1.00	1.00	1.00	0.99	1.04
PT	0.91	1.02	1.03	1.00	0.98	0.96	0.93	0.92	0.99	1.00	0.98	1.00	0.92	1.03	1.02	1.00	0.98	0.95	0.91	0.92	0.99	1.00	0.91	0.95
RO	1.34	1.25	1.08	1.04	1.01	0.99	1.00	0.99	1.00	1.00	0.98	0.89	1.36	1.28	1.10	1.05	1.03	1.01	1.00	0.98	0.99	1.00	0.98	0.91
SE	0.81	0.84	0.89	0.87	0.88	0.90	0.90	0.94	0.99	1.00	0.99	1.00	0.82	0.86	0.90	0.87	0.89	0.91	0.91	0.95	1.00	1.00	0.97	0.99
SI	0.88	0.87	0.96	0.94	0.92	0.91	0.90	0.90	0.98	1.00	0.99	1.01	0.97	0.93	1.00	0.99	0.97	0.94	0.92	0.95	0.97	1.00	0.95	1.00
SK	0.86	0.83	0.92	0.90	0.89	0.90	0.90	0.93	0.99	1.00	0.98	0.98	0.94	0.89	0.97	0.95	0.95	0.96	0.96	0.96	1.00	1.00	0.91	0.91

Source: Eurostat; author's calculations.

2. Methodological approach, trends and assumptions

2.1 Outline of methodological approach

Future employment developments will be assessed by analysing overall macroeconomic growth performance in conjunction with sectoral growth and labour productivity dynamics, following the approach developed in Jestl and Stehrer (2021). The starting point of the calculations is the GDP forecasts provided by the European Commission and the IMF.¹ As these forecasts do not provide a sectoral breakdown, we assume that the growth patterns from the period before the pandemic in 2020 will re-emerge in the years after the crisis, and we adapt sectoral growth rates in such a way that they correspond to the GDP growth forecasts. This assumes that there will be no significant shifts in sectoral growth rates and productivity performance after the pandemic. However, we assess sectoral growth and productivity dynamics for 2020–2021 using descriptive analysis to allow for changes to longer-term growth rates, if this seems warranted.

This approach can be formalised in the following way. We denote the forecasted GDP growth rate by $g_{GDP,t}$. From historical data, we obtain sectoral value-added growth rates (for example, averages over a certain period) denoted by \bar{g}_i (for industry i) and (nominal) sectoral shares from the latest year (or averaged over a specified period) denoted by \bar{s}_i . The overall growth rate can be expressed as a weighted sum of the sectoral growth rates, i.e. $\bar{g} = \sum_i s_i \bar{g}_i$.

To derive growth rates for a specific year t with the growth forecast given by $g_{GDP,t}$, we rescale the growth rates \bar{g}_i by the ratio $g_{GDP,t}/\bar{g}$, which results in $g_{GDP,t} = \sum_i \bar{s}_i g_{it}$, where g_{it} is the re-scaled industry-level value-added growth rate.

Further, using long-term growth rates for labour productivity by industry (either in terms of persons employed or hours worked) denoted by $\bar{\varphi}_i$ allows us to calculate the associated employment growth rates (in terms of persons employed or hours worked) for the coming years, given by

$$e_{it} = g_{it} - \bar{\varphi}_i$$

1. Recent publications include: European Commission (2022a) Russian invasion tests EU economic resilience, 1-5; European Commission (2022b) Russia's war worsens the outlook, 1; IMF (2022b); IMF (2022a).

Using these growth rates, one can translate them into the evolution in terms of numbers of persons employed or hours worked. Similar to the above, the benchmark productivity growth rates can be adjusted, if necessary.²

2.2 Implementation

This approach will be implemented in the following way. First, we take GDP growth rates for 2021 and the forecasts for the following years from the European Commission Summer Forecast (European Commission 2022a). Because GDP predictions in the European Economic Forecast are only available for 2022 and 2023, we also draw on predictions from the IMF published in April 2022 for the period 2024–2027 (IMF 2022b).

To break down these macroeconomic growth rates to the industry level, we use data on sectoral growth rates in real terms (chain-linked volumes) and (nominal) value-added shares. Data on longer-term developments for EU Member States (and some other European countries) are available from National Accounts for 2012–2020. We use them to calculate average annual growth rates for value-added and productivity (for persons employed and hours worked) and the nominal shares at the NACE Rev. 2 1-digit industry level. Using these growth rates and shares allows us to calculate employment growth and levels for future years. The starting point for employment levels will be the data from 2021. As in Jestl and Stehrer (2021), finally, we break down employment levels by industry to various labour market groups: (i) age groups (15–24, 29–49, 50–64, 65+), (ii) sex (female and male), and (iii) occupations (according to the ISCO-o8 1-digit classification). The data for this exercise comes from the EU Labour Force Survey (EU LFS), available from Eurostat.

2.3 Trends and assumptions

The following tables and graphs show the trend growth rates underlying the scenarios. According to these numbers, growth in the EU27 is expected to be at 1.5 per cent in 2023 and around 2 per cent in 2024 and 2025.

2. Implicitly, it is assumed that working-time arrangements (for example, short-time working scheme arrangements) that prevailed in the crisis year 2020 also persisted to a lesser extent in the post-pandemic period, particularly in 2021. Thus, growth rates in terms of persons employed are to some extent indicative, as changes in work-time arrangements – for example, the withdrawal of short-time working scheme arrangements or a shift towards part-time work – are not considered explicitly when considering the development of persons employed. For example, if more people would work part-time the number might be underestimated.

Table 2.1 Growth forecasts (in %)

Country	European Commission			IMF			
	2021	2022	2023	2024	2025	2026	2027
EU27	5.4	2.7	1.5	2.1	1.9	1.8	1.7
AT	4.8	3.7	1.5	2.3	1.9	1.8	1.8
BE	6.2	2.3	1.3	1.4	1.1	1.2	1.2
BG	4.2	2.8	2.3	4.2	3.0	2.8	2.8
CY	5.5	3.2	2.1	3.0	2.7	2.8	2.9
CZ	3.5	2.3	2.0	3.6	3.1	2.5	2.5
DE	2.9	1.4	1.3	1.5	1.4	1.2	1.1
DK	4.9	3.0	1.2	1.8	1.8	1.8	1.8
EE	8.3	1.6	1.9	3.8	3.6	3.3	3.3
EL	8.3	4.0	2.4	2.0	1.6	1.4	1.2
ES	5.1	4.0	2.1	3.1	2.0	1.7	1.6
FI	3.0	1.8	1.2	1.4	1.3	1.3	1.3
FR	6.8	2.4	1.4	1.5	1.4	1.4	1.4
HR	10.2	3.4	2.9	3.0	3.0	3.0	3.0
HU	7.1	5.2	2.1	3.6	3.3	2.9	2.7
IE	13.5	5.3	4.0	4.0	3.0	3.0	3.0
IT	6.6	2.9	0.9	1.3	1.1	1.0	0.5
LT	5.0	1.9	2.5	3.1	2.9	2.7	2.5
LU	6.9	2.6	2.1	2.9	2.5	2.5	2.5
LV	4.5	3.9	2.2	3.9	3.3	3.3	3.3
MT	10.4	4.9	3.8	3.9	3.3	3.4	3.3
NL	4.9	3.0	1.0	1.8	1.5	1.5	1.5
PL	5.9	5.2	1.5	3.2	3.3	3.3	3.3
PT	4.9	6.5	1.9	2.4	2.1	1.9	1.9
RO	5.9	3.9	2.9	3.8	3.5	3.5	3.5
SE	5.1	1.3	0.8	2.3	2.0	2.0	2.0
SI	8.1	5.4	1.0	2.9	2.9	2.8	2.7
SK	3.0	1.9	2.7	3.8	3.8	2.9	2.8

Source: European Commission (2022b); IMF (2022b).

But the growth rates for 2023 and further years seem rather optimistic, given recent developments. Therefore, we subtract 1 percentage point of growth in 2022 and 2023, 0.75 percentage points in 2024 and 0.5 percentage points in 2025, which serves as the baseline scenario. This reflects the downward revisions discussed in International Monetary Fund (2022a). A more optimistic scenario based on the growth rates given in Table 2.1 is provided in Section 5. Furthermore, employment numbers for a more pessimistic scenario with even lower growth rates as in the baseline scenario are provided there.

Table 2.2 provides an overview of long-term growth rates of value added, employment and productivity over the period 2012–2019, which serves as input for long-term growth rates for the scenarios. We have excluded the year 2021, which shows partly high growth rates due to economic uptake after the crisis, which are not representative of the longer period. Value added in the

EU27 has been growing by about 1.5 per cent annually. Employment has been growing by 0.83 per cent for the employed and 0.54 per cent for hours worked. The difference is labour productivity growth, which has been 0.64 per cent and 0.93 per cent, respectively.

Table 2.2 Average growth rates, 2012–2019 (in %)

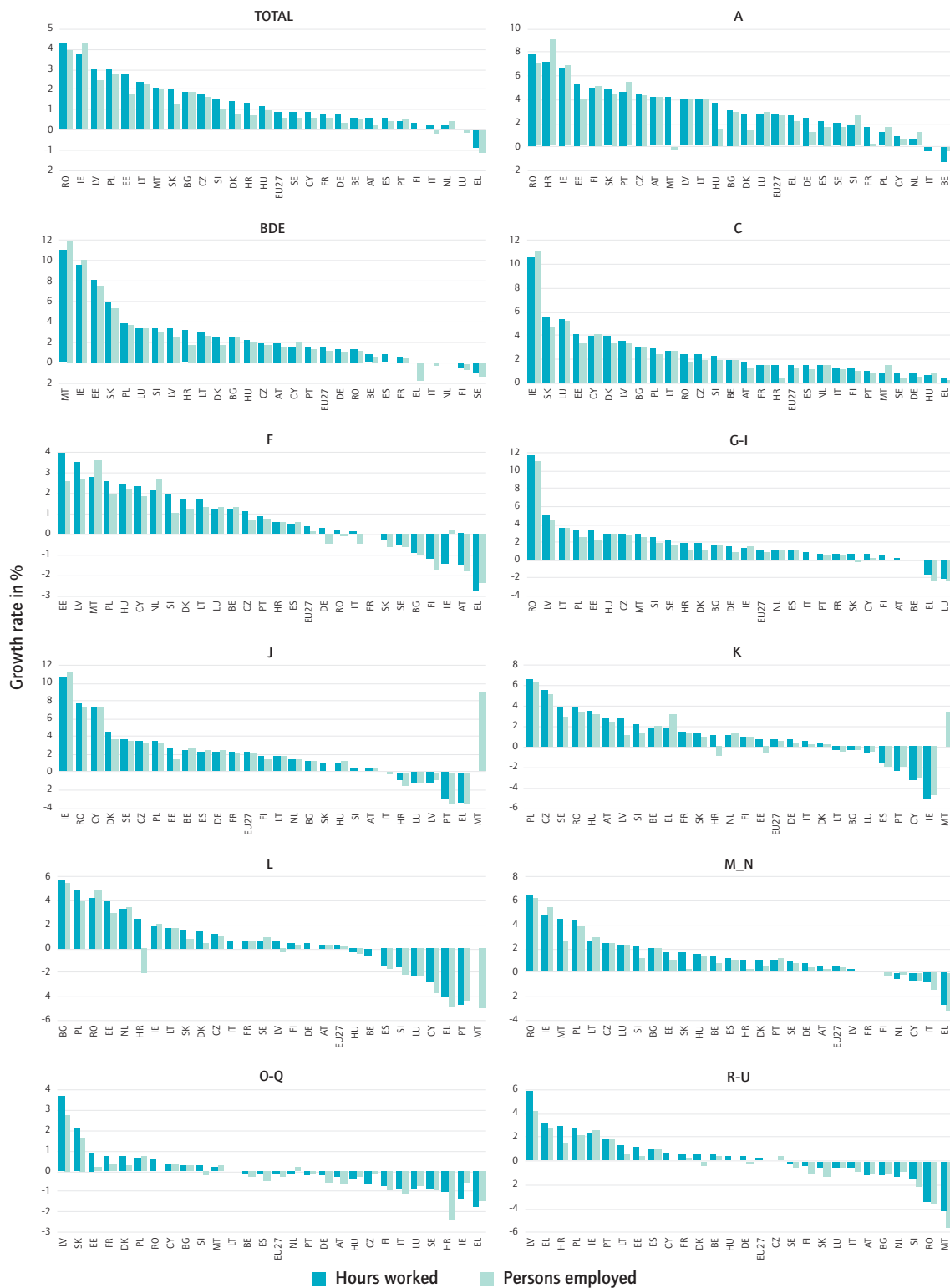
Country	Levels			Labour productivity	
	Value added	Persons employed	Hours worked	Persons employed	Hours worked
EU27	1.48	0.87	1.03	0.64	0.93
AT	1.33	1.20	1.18	0.23	0.63
BE	1.46	1.01	0.81	0.54	0.65
BG	1.96	0.06	0.17	1.92	1.91
CY	1.84	1.20	1.27	0.61	0.87
CZ	2.62	0.87	1.05	1.67	1.81
DE	1.45	0.96	0.79	0.36	0.77
DK	1.78	1.12	0.75	0.82	1.41
EE	3.28	1.31	1.36	1.80	2.77
EL	-0.57	0.54	1.25	-1.07	-0.84
ES	1.30	1.06	1.40	0.42	0.62
FI	0.70	0.97	0.67	0.02	0.34
FR	1.26	0.78	1.25	0.61	0.84
HR	1.39	0.78	0.20	0.68	1.36
HU	3.24	2.22	2.25	0.97	1.21
IE	7.00	3.00	3.56	4.24	3.70
IT	0.14	0.36	0.79	-0.19	0.25
LT	3.54	1.26	1.39	2.25	2.34
LU	2.79	2.89	2.50	-0.08	0.03
LV	3.06	0.25	-0.09	2.45	3.04
MT	7.26	4.91	4.69	1.99	2.10
NL	1.48	1.16	1.47	0.43	0.24
PL	3.47	0.82	0.96	2.70	3.01
PT	1.03	0.66	1.05	0.56	0.42
RO	4.11	-0.82	-0.92	3.92	4.24
SE	2.03	1.38	1.29	0.64	0.90
SI	2.36	1.28	1.31	1.08	1.56
SK	2.54	1.08	0.51	1.24	1.97

Source: Eurostat.

Of course, these longer-term growth rates differ widely across countries. Over this period, only Greece experienced negative value-added growth, at -0.57 per cent; nonetheless, there has been positive employment growth due to strongly negative labour productivity growth. Numbers for Italy and Romania indicate negative growth in hours worked.

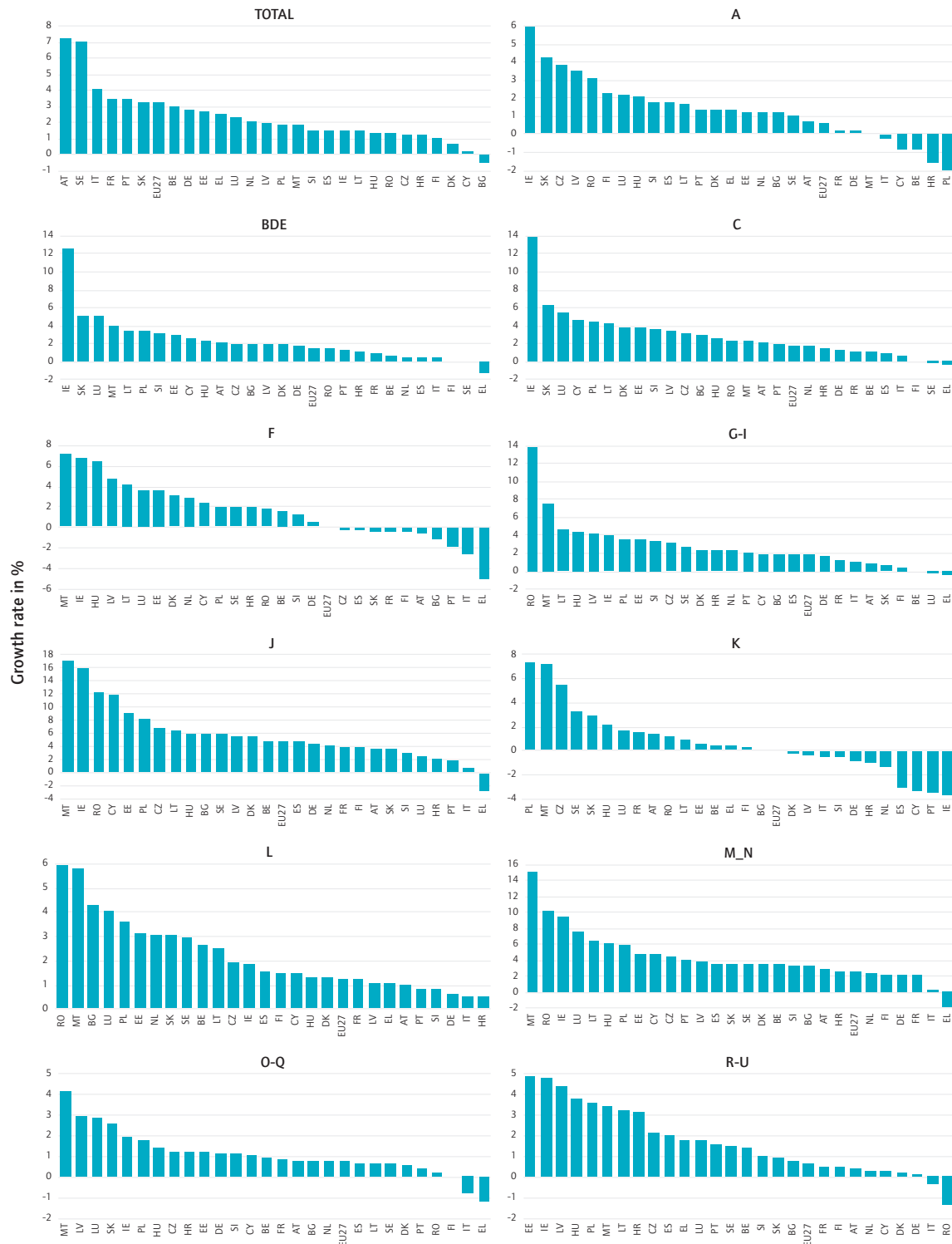
Figures 2.1 and 2.2 present the sectoral growth rates of these variables. Figure 2.3 shows the nominal value-added shares, which serve as weights in the calculations outlined above, though they are not discussed here in detail.

Figure 2.1 Labour productivity growth rates, 2012–2019 (in %)



Source: Eurostat; author's calculations.

Figure 2.2 Value-added growth rates, 2012–2019 (in %)



Source: Eurostat; own calculations.

Figure 2.3 Nominal shares in value added, average 2019–2021 (in %)



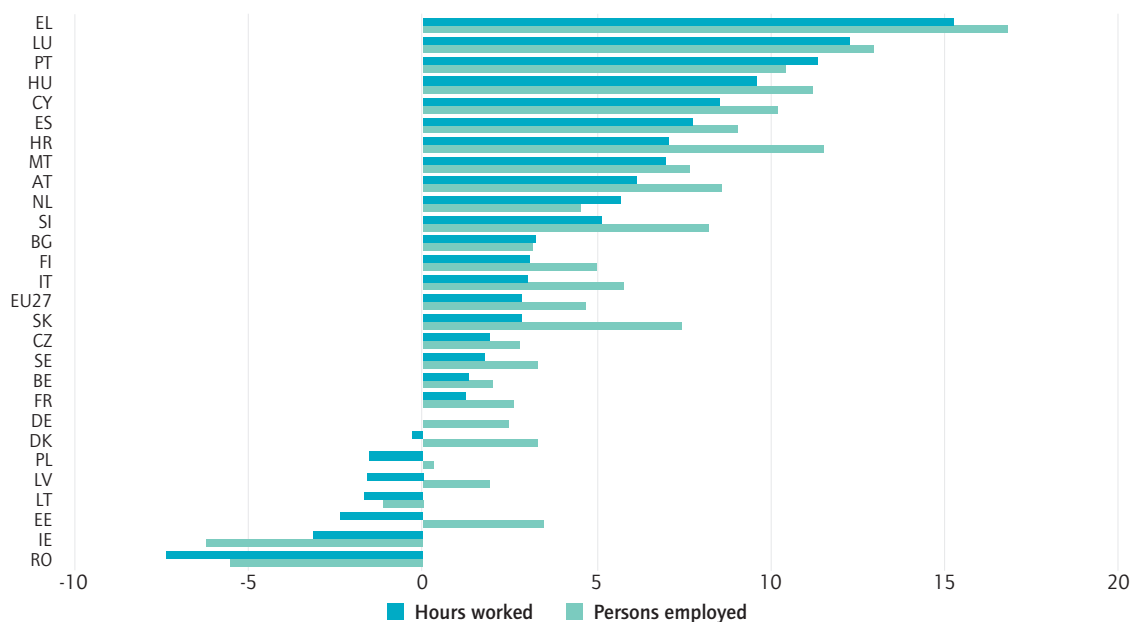
Source: Eurostat; author's calculations.

3. Baseline scenario

3.1 Total economy level

Figure 3.1 presents the results of the baseline scenarios in the long run (the year 2027). Employment in the EU27 would be 3 per cent higher in terms of hours worked and about 5 per cent higher in terms of persons employed. These employment effects are particularly high for Greece and Luxembourg because of their very low labour productivity growth rates over the long term, as shown in the previous section. Other countries – such as Portugal, Hungary and Cyprus – are characterised by relatively optimistic macroeconomic forecasts compared with the other economies,³ explaining the relatively positive employment dynamics.

Figure 3.1 EU Member States – Index (2021=100) for 2027



Source: Author's calculations.

3. The reasons for these higher growth rates are the strong recovery of the tourism sector in Portugal and Cyprus (where other services have also improved). For Hungary the main reason is a strong fiscal stimulus that boosted public investment and consumption (see European Commission 2022a).

At the other end of the spectrum, Romania and Ireland show high labour productivity growth rates, explaining the negative long-term employment changes. This is also the case for the Baltic countries (Estonia, Lithuania and Latvia).

Table 3.1 EU Member States – Index 2021=1

Country	Hours worked							Persons employed						
	2021	2022	2023	2024	2025	2026	2027	2021	2022	2023	2024	2025	2026	2027
EU27	1.000	1.008	1.003	1.007	1.012	1.021	1.029	1.000	1.011	1.009	1.016	1.024	1.036	1.047
AT	1.000	1.021	1.019	1.029	1.037	1.049	1.061	1.000	1.025	1.027	1.041	1.053	1.070	1.086
BE	1.000	1.006	1.003	1.003	1.002	1.008	1.013	1.000	1.008	1.005	1.006	1.007	1.013	1.020
BG	1.000	0.999	0.993	1.008	1.014	1.023	1.032	1.000	0.999	0.993	1.008	1.014	1.023	1.032
CY	1.000	1.013	1.016	1.030	1.043	1.064	1.085	1.000	1.016	1.021	1.038	1.054	1.077	1.102
CZ	1.000	0.995	0.987	0.997	1.005	1.012	1.019	1.000	0.996	0.990	1.001	1.011	1.019	1.028
DE	1.000	0.996	0.992	0.991	0.993	0.997	1.000	1.000	1.000	1.000	1.004	1.009	1.017	1.025
DK	1.000	1.006	0.994	0.990	0.989	0.993	0.997	1.000	1.012	1.006	1.008	1.013	1.023	1.033
EE	1.000	0.978	0.960	0.963	0.966	0.971	0.976	1.000	0.988	0.979	0.991	1.004	1.019	1.035
EL	1.000	1.038	1.062	1.084	1.105	1.130	1.153	1.000	1.041	1.066	1.091	1.115	1.142	1.168
ES	1.000	1.024	1.029	1.046	1.056	1.067	1.077	1.000	1.026	1.033	1.053	1.064	1.078	1.091
FI	1.000	1.005	1.003	1.006	1.011	1.021	1.031	1.000	1.008	1.010	1.016	1.024	1.037	1.050
FR	1.000	1.006	1.001	1.000	1.001	1.007	1.012	1.000	1.008	1.006	1.007	1.010	1.018	1.026
HR	1.000	1.010	1.016	1.025	1.037	1.053	1.071	1.000	1.017	1.030	1.046	1.065	1.090	1.115
HU	1.000	1.030	1.029	1.046	1.062	1.080	1.096	1.000	1.032	1.034	1.053	1.072	1.093	1.112
IE	1.000	1.006	0.999	0.994	0.983	0.976	0.969	1.000	1.001	0.988	0.978	0.961	0.949	0.938
IT	1.000	1.016	1.013	1.016	1.020	1.027	1.030	1.000	1.021	1.022	1.030	1.038	1.050	1.057
LT	1.000	0.986	0.977	0.978	0.978	0.982	0.983	1.000	0.987	0.979	0.980	0.982	0.986	0.988
LU	1.000	1.016	1.027	1.048	1.069	1.095	1.123	1.000	1.017	1.029	1.052	1.073	1.101	1.129
LV	1.000	0.999	0.980	0.981	0.979	0.981	0.984	1.000	1.004	0.992	0.999	1.002	1.011	1.019
MT	1.000	1.018	1.025	1.036	1.043	1.057	1.070	1.000	1.019	1.027	1.039	1.048	1.063	1.076
NL	1.000	1.018	1.015	1.023	1.031	1.044	1.057	1.000	1.016	1.011	1.018	1.023	1.034	1.046
PL	1.000	1.012	0.987	0.981	0.979	0.982	0.985	1.000	1.015	0.993	0.990	0.991	0.997	1.003
PT	1.000	1.051	1.056	1.069	1.081	1.098	1.114	1.000	1.049	1.053	1.064	1.076	1.090	1.105
RO	1.000	0.987	0.963	0.952	0.940	0.933	0.926	1.000	0.990	0.970	0.961	0.953	0.949	0.945
SE	1.000	0.994	0.983	0.989	0.995	1.006	1.017	1.000	0.997	0.988	0.997	1.006	1.020	1.033
SI	1.000	1.028	1.012	1.018	1.027	1.039	1.051	1.000	1.033	1.022	1.033	1.047	1.065	1.082
SK	1.000	0.989	0.987	0.997	1.010	1.020	1.028	1.000	0.997	1.001	1.019	1.040	1.058	1.074

Source: Author's calculations.

Table 3.1 shows the evolution over time. It is particularly interesting to note that the results suggest a decline (or stagnation) of employment in 2023 compared with 2022. Only from 2024 onward do the results suggest a gradual increase in employment levels. Table 3.2 shows the results using the pre-pandemic year 2019 as reference. For the EU27, the number of hours worked in 2027 would be only about 1 per cent higher compared with 2019; however, the number of persons employed would increase by more than 4 per cent. Furthermore, in several countries, employment levels (in terms of hours worked) are below the pre-pandemic level in 2027, whereas this is the case in terms of persons employed only for Ireland, Lithuania, Latvia and Romania.

Table 3.2 EU Member States and EU27 by industry – Index 2019=1

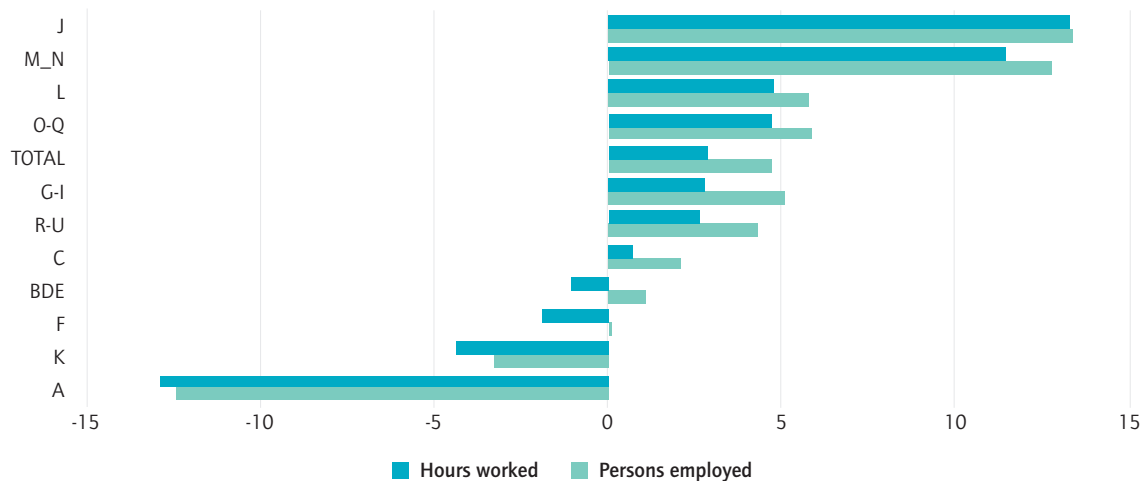
Country	Hours worked									Persons employed								
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2019	2020	2021	2022	2023	2024	2025	2026	2027
EU27	1.000	0.935	0.981	0.988	0.984	0.988	0.993	1.002	1.009	1.000	0.986	0.997	1.008	1.007	1.014	1.021	1.033	1.044
AT	1.000	0.913	0.960	0.980	0.979	0.988	0.995	1.007	1.019	1.000	0.984	1.004	1.029	1.032	1.045	1.057	1.074	1.091
BE	1.000	0.915								1.000	1.000	1.017	1.025	1.023	1.024	1.024	1.031	1.038
BG	1.000	0.953	0.963	0.962	0.957	0.971	0.977	0.986	0.995	1.000	0.977	0.979	0.978	0.972	0.986	0.992	1.001	1.010
CY	1.000	0.936	0.971	0.984	0.986	1.000	1.013	1.033	1.054	1.000	0.995	1.007	1.023	1.028	1.045	1.061	1.085	1.109
CZ	1.000	0.923	0.951	0.946	0.939	0.949	0.956	0.963	0.969	1.000	0.983	0.986	0.983	0.976	0.988	0.997	1.005	1.014
DE	1.000	0.951	0.967	0.964	0.959	0.959	0.960	0.964	0.968	1.000	0.992	0.992	0.993	0.992	0.996	1.001	1.010	1.017
DK	1.000	0.970	1.007	1.013	1.001	0.997	0.996	1.000	1.004	1.000	0.989	1.013	1.025	1.019	1.021	1.026	1.036	1.047
EE	1.000	0.940	1.016	0.994	0.976	0.978	0.981	0.987	0.992	1.000	0.973	0.974	0.963	0.954	0.966	0.979	0.993	1.008
EL	1.000	0.892	0.969	1.006	1.029	1.050	1.071	1.095	1.117	1.000	0.988	0.992	1.033	1.058	1.083	1.106	1.133	1.159
ES	1.000	0.894	0.957	0.980	0.984	1.001	1.010	1.021	1.031	1.000	0.959	0.982	1.007	1.014	1.033	1.045	1.058	1.070
FI	1.000	0.975	1.006	1.011	1.009	1.012	1.017	1.027	1.037	1.000	0.981	1.014	1.022	1.023	1.030	1.038	1.051	1.064
FR	1.000	0.918	0.990	0.996	0.991	0.990	0.991	0.997	1.002	1.000	0.991	1.009	1.017	1.014	1.016	1.019	1.027	1.035
HR	1.000	0.986	0.998	1.009	1.014	1.023	1.035	1.052	1.069	1.000	0.988	1.000	1.017	1.030	1.046	1.065	1.090	1.115
HU	1.000	0.952	0.990	1.019	1.018	1.035	1.051	1.069	1.085	1.000	0.989	1.009	1.041	1.043	1.062	1.082	1.102	1.121
IE	1.000	0.903	0.963	0.968	0.962	0.957	0.946	0.939	0.933	1.000	0.972	1.030	1.031	1.018	1.008	0.991	0.978	0.966
IT	1.000	0.890	0.961	0.977	0.974	0.976	0.980	0.987	0.990	1.000	0.979	0.985	1.006	1.007	1.014	1.022	1.034	1.042
LT	1.000	0.943	0.969	0.955	0.947	0.947	0.948	0.951	0.953	1.000	0.984	0.996	0.982	0.975	0.976	0.978	0.982	0.984
LU	1.000	0.960	0.963	0.978	0.989	1.010	1.030	1.055	1.081	1.000	1.019	1.050	1.068	1.080	1.104	1.127	1.156	1.186
LV	1.000	0.944	0.934	0.933	0.916	0.917	0.914	0.917	0.919	1.000	0.977	0.952	0.956	0.944	0.950	0.954	0.962	0.970
MT	1.000	0.947	0.955	0.973	0.979	0.990	0.997	1.010	1.022	1.000	1.028	1.057	1.077	1.086	1.099	1.107	1.123	1.138
NL	1.000	0.972	1.004	1.021	1.019	1.027	1.035	1.048	1.061	1.000	0.995	1.014	1.030	1.026	1.032	1.038	1.049	1.060
PL	1.000	0.992	1.042	1.054	1.028	1.022	1.020	1.023	1.026	1.000	1.000	1.015	1.030	1.007	1.005	1.006	1.012	1.018
PT	1.000	0.907	0.947	0.995	1.000	1.012	1.024	1.040	1.055	1.000	0.981	1.002	1.051	1.055	1.066	1.077	1.092	1.106
RO	1.000	0.984	0.912	0.900	0.879	0.868	0.857	0.851	0.845	1.000	0.982	0.895	0.885	0.868	0.860	0.852	0.849	0.845
SE	1.000	0.968	0.993	0.987	0.976	0.982	0.988	0.999	1.010	1.000	0.987	0.999	0.996	0.988	0.996	1.005	1.019	1.033
SI	1.000	0.952	1.005	1.033	1.017	1.023	1.032	1.044	1.056	1.000	0.994	1.008	1.042	1.030	1.041	1.055	1.073	1.091
SK	1.000	0.912	0.913	0.903	0.900	0.910	0.922	0.931	0.938	1.000	0.981	0.975	0.972	0.977	0.994	1.015	1.032	1.048
Industry	Hours worked									Persons employed								
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2019	2020	2021	2022	2023	2024	2025	2026	2027
TOTAL	1.000	0.935	0.981	0.988	0.984	0.988	0.993	1.002	1.009	1.000	0.986	0.997	1.008	1.007	1.014	1.021	1.033	1.044
A	1.000	0.981	0.978	0.957	0.932	0.911	0.890	0.871	0.853	1.000	0.984	0.959	0.939	0.915	0.895	0.875	0.857	0.840
BDE	1.000	0.991	1.002	1.003	0.992	0.990	0.988	0.990	0.991	1.000	1.000	0.997	1.001	0.994	0.995	0.997	1.003	1.008
C	1.000	0.925	0.961	0.965	0.956	0.957	0.958	0.964	0.968	1.000	0.973	0.970	0.976	0.970	0.972	0.976	0.983	0.990
F	1.000	0.953	1.028	1.025	1.021	1.017	1.014	1.011	1.008	1.000	1.011	1.040	1.041	1.040	1.040	1.041	1.041	1.042
G-I	1.000	0.883	0.934	0.942	0.936	0.940	0.944	0.953	0.960	1.000	0.965	0.969	0.980	0.978	0.986	0.994	1.007	1.019
J	1.000	0.996	1.067	1.099	1.092	1.113	1.136	1.174	1.209	1.000	1.021	1.073	1.106	1.098	1.120	1.143	1.181	1.217
K	1.000	0.977	0.996	0.988	0.981	0.974	0.966	0.959	0.952	1.000	0.995	0.996	0.991	0.985	0.980	0.974	0.969	0.964
L	1.000	0.936	0.998	1.008	1.009	1.016	1.024	1.035	1.046	1.000	0.993	1.004	1.016	1.018	1.027	1.036	1.049	1.062
M_N	1.000	0.928	0.991	1.014	1.017	1.034	1.053	1.079	1.104	1.000	0.978	1.005	1.030	1.035	1.055	1.076	1.105	1.133
O-Q	1.000	0.983	1.021	1.030	1.034	1.042	1.050	1.060	1.069	1.000	1.007	1.029	1.041	1.046	1.056	1.066	1.078	1.090
R-U	1.000	0.894	0.949	0.954	0.955	0.959	0.963	0.969	0.974	1.000	0.980	0.986	0.994	0.997	1.004	1.011	1.020	1.028

Source: Author's calculations.

3.2 Industry level (EU27)

Figure 3.2 shows the same results for the EU27 by industry. Employment in industries J (Information and communications) and M&N (Professional, scientific, technical, administration and support service activities) will grow by more than 10 per cent, whereas employment levels will decline strongly in industries A (Agriculture, forestry and fishing) and less so in industry K (Financial and insurance activities), according to these calculations. Employment levels will change very little in C (Manufacturing), BDE (Mining, quarrying and other industry), and F (Construction), whereas in the remaining industries, employment will only change by about 3–5 per cent.

Figure 3.2 Industry level – Index (2021=100) for 2027



Source: Author's calculations.

The dynamics over time are presented in Table 3.2. There are fairly continuous dynamics of employment in all industries; the dip in 2023 – observed for the whole economy, as reported above – is visible mainly in industries G–I (Wholesale and retail trade, Transportation and storage, and Accommodation and food service activities) and J (Information and communications). In terms of persons employed, however, the index in 2027 is above 1 for all industries except A (Agriculture), C (Manufacturing), and K (Financial and insurance activities).

Table 3.3 Industry level – Index 2021=1

Industry	Hours worked							Persons employed						
	2021	2022	2023	2024	2025	2026	2027	2021	2022	2023	2024	2025	2026	2027
TOTAL	1.000	1.008	1.003	1.007	1.012	1.021	1.029	1.000	1.011	1.009	1.016	1.024	1.036	1.047
A	1.000	0.978	0.953	0.931	0.910	0.891	0.871	1.000	0.979	0.954	0.933	0.913	0.894	0.876
BDE	1.000	1.001	0.990	0.988	0.986	0.988	0.990	1.000	1.005	0.998	0.999	1.001	1.007	1.011
C	1.000	1.005	0.995	0.996	0.997	1.003	1.007	1.000	1.007	1.000	1.003	1.006	1.014	1.021
F	1.000	0.997	0.993	0.990	0.987	0.984	0.981	1.000	1.000	1.000	1.000	1.000	1.001	1.001
G-I	1.000	1.008	1.002	1.006	1.010	1.019	1.028	1.000	1.012	1.010	1.017	1.026	1.039	1.051
J	1.000	1.030	1.023	1.043	1.065	1.100	1.133	1.000	1.030	1.024	1.043	1.065	1.101	1.134
K	1.000	0.993	0.985	0.978	0.971	0.964	0.957	1.000	0.995	0.989	0.983	0.978	0.973	0.967
L	1.000	1.010	1.011	1.018	1.026	1.037	1.048	1.000	1.012	1.014	1.023	1.032	1.045	1.058
M_N	1.000	1.023	1.026	1.044	1.063	1.089	1.114	1.000	1.025	1.030	1.050	1.071	1.100	1.128
O-Q	1.000	1.009	1.013	1.020	1.028	1.038	1.047	1.000	1.011	1.016	1.026	1.035	1.047	1.059
R-U	1.000	1.006	1.006	1.010	1.015	1.021	1.027	1.000	1.008	1.012	1.018	1.026	1.035	1.043

Source: Author's calculations.

Table 3.2 (lower panel) presents the changes compared with the pre-pandemic situation in 2019. Employment levels in terms of hours worked compared with this year are higher only in F (Construction), J (Information and communications), L (Real estate activities), M&N (Professional, scientific, technical, administration and support service activities) and O–Q (Public administration, defence, education, human health and social work activities).

The following section presents the details of employment levels for 2027 (Index 2021=1) by country and industry for an overview. Appendix Section A.2 provides details for each country and industry.

3.3 Details by country and industry

3.3.1 Hours worked

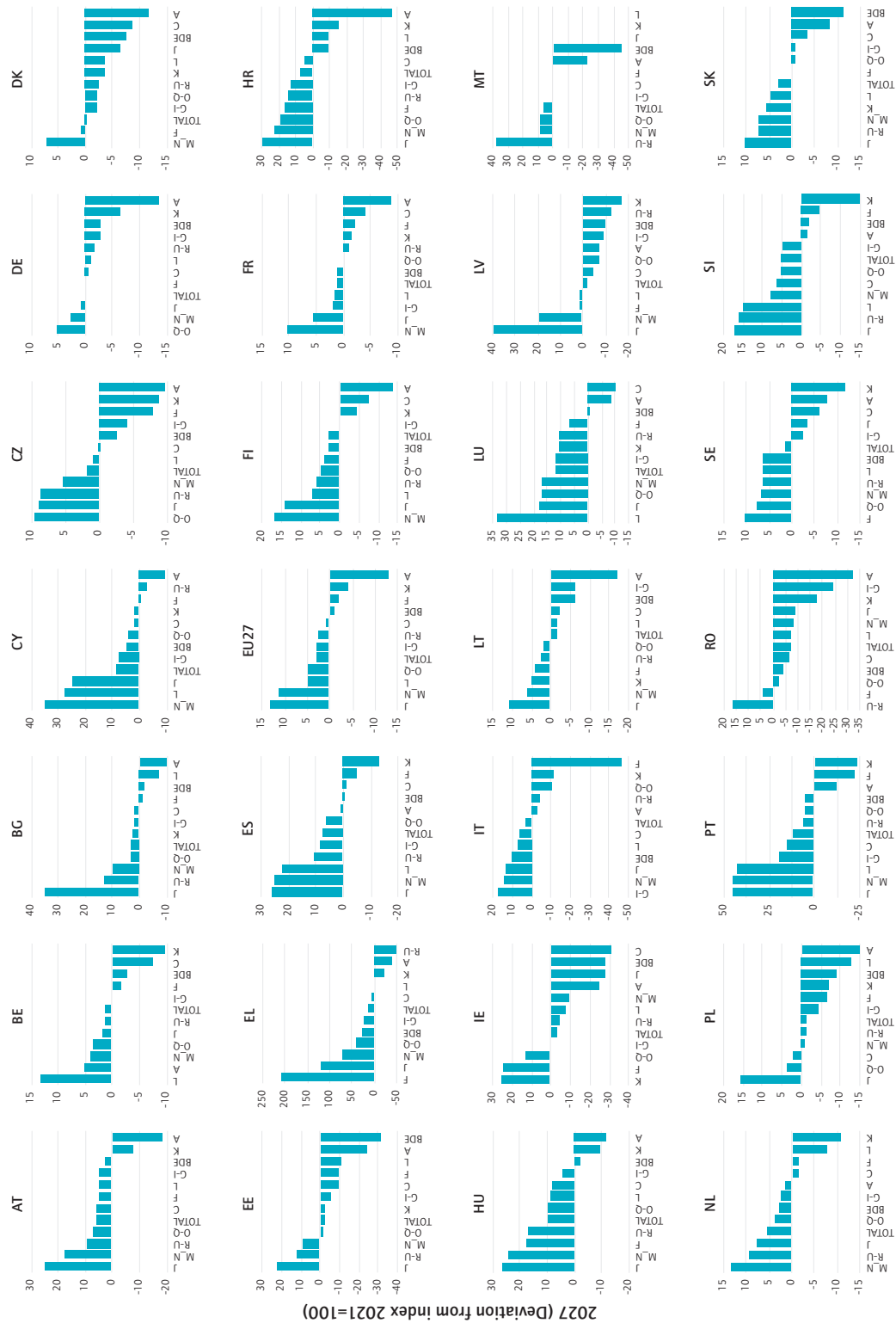
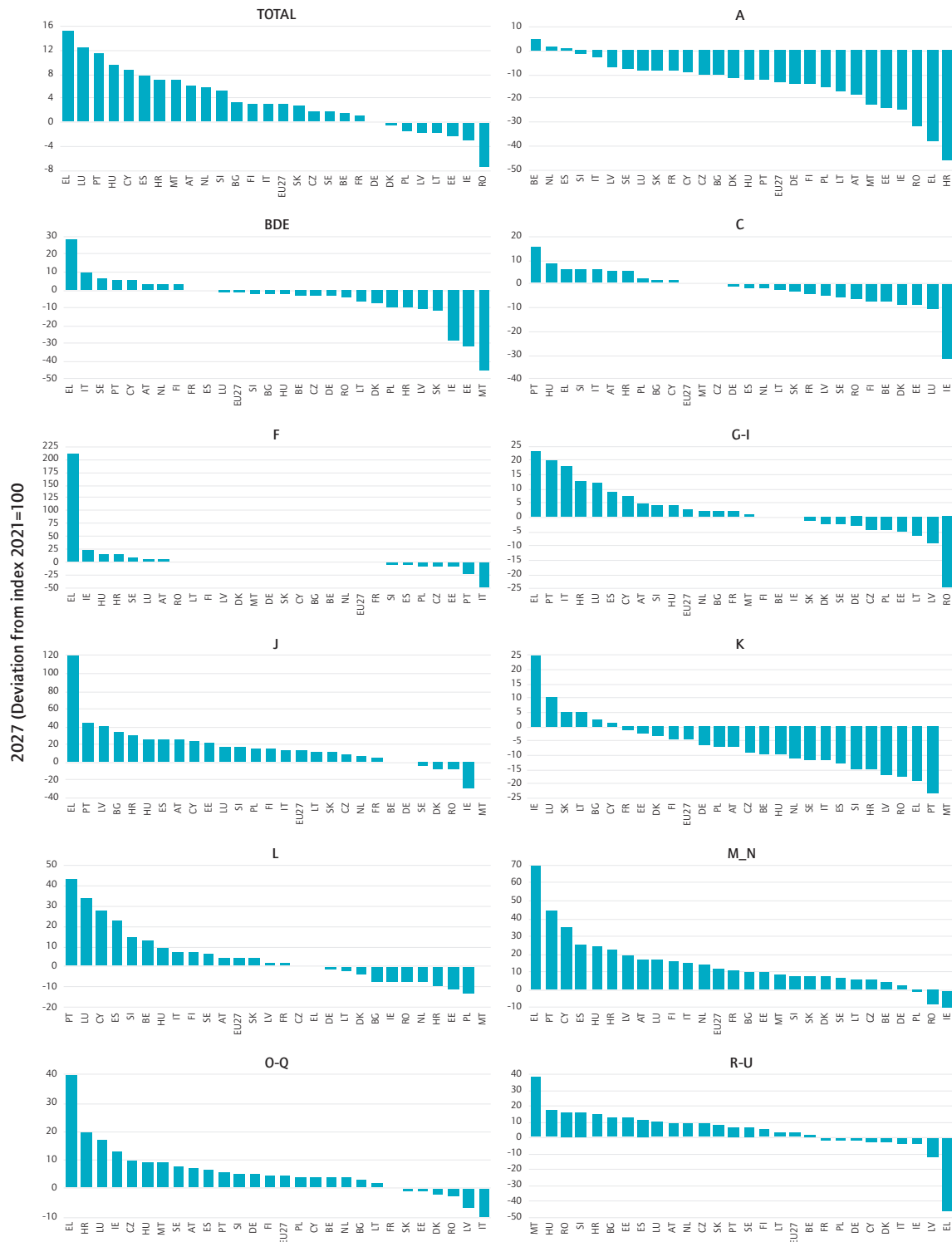


Figure 3.3 Hours worked – by country over industries: Index (2021=100) for 2027

Source: Author's calculations.

Figure 3.4 Hours worked – by industry over countries: Index (2021=100) for 2027



Source: Author's calculations.

3.3.2 Persons employed

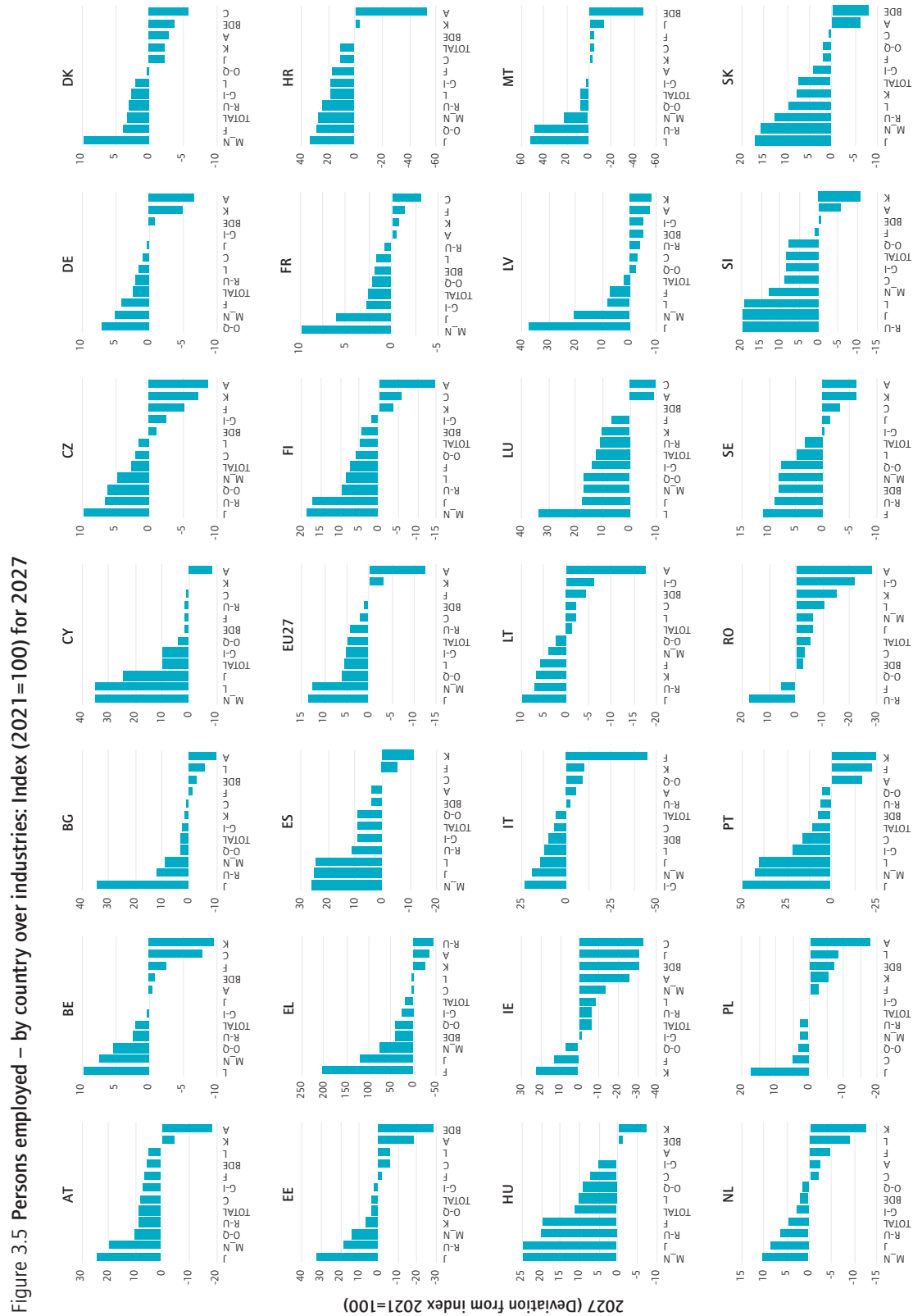
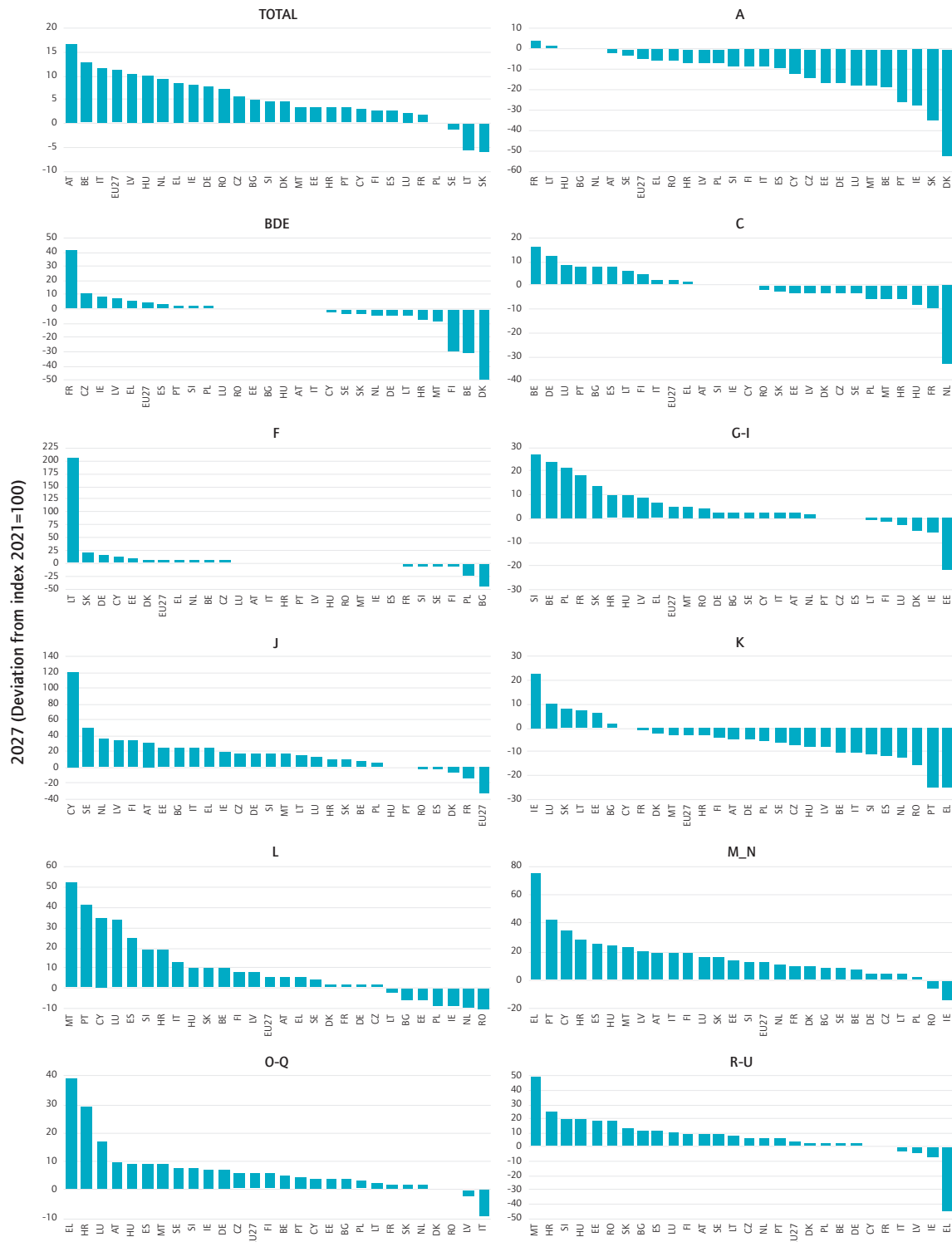


Figure 3.6 Persons employed – by industry over countries: Index (2021=100) for 2027



Source: Author's calculations.

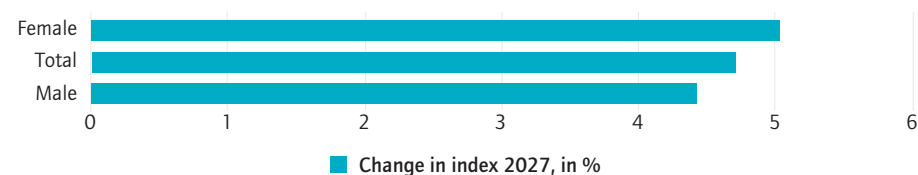
4. Labour market groups

In this section, we break down the labour market dynamics by various employment groups according to sex, age and occupational categories. These distinctions are based on the information from the EU LFS data, which only allows us to distinguish the number of persons employed into these groups. Specifically, the shares for each group are calculated by industry, again using the averages for 2019–2021, which are then applied to the scenarios.⁴ General information on shares and growth rates for the labour market groups considered are presented in Appendix Section A.3. In this section, we present only the most important results over the long run, with the short-term dynamics being reported in Appendix Section A.4 for all dimensions.

4.1 Sex

Figure 4.1 shows the results for female and male workers. According to these calculations, employment dynamics are slightly more nuanced towards female workers, with an increase of about 5 per cent, whereas the increase for male workers is only around 4.5 per cent. This pattern of more favourable dynamics concerning females is similar in most countries except Hungary. In countries in which employment is declining, the negative dynamics are larger for males than for females, with the exception of Romania (see Figure 4.2).

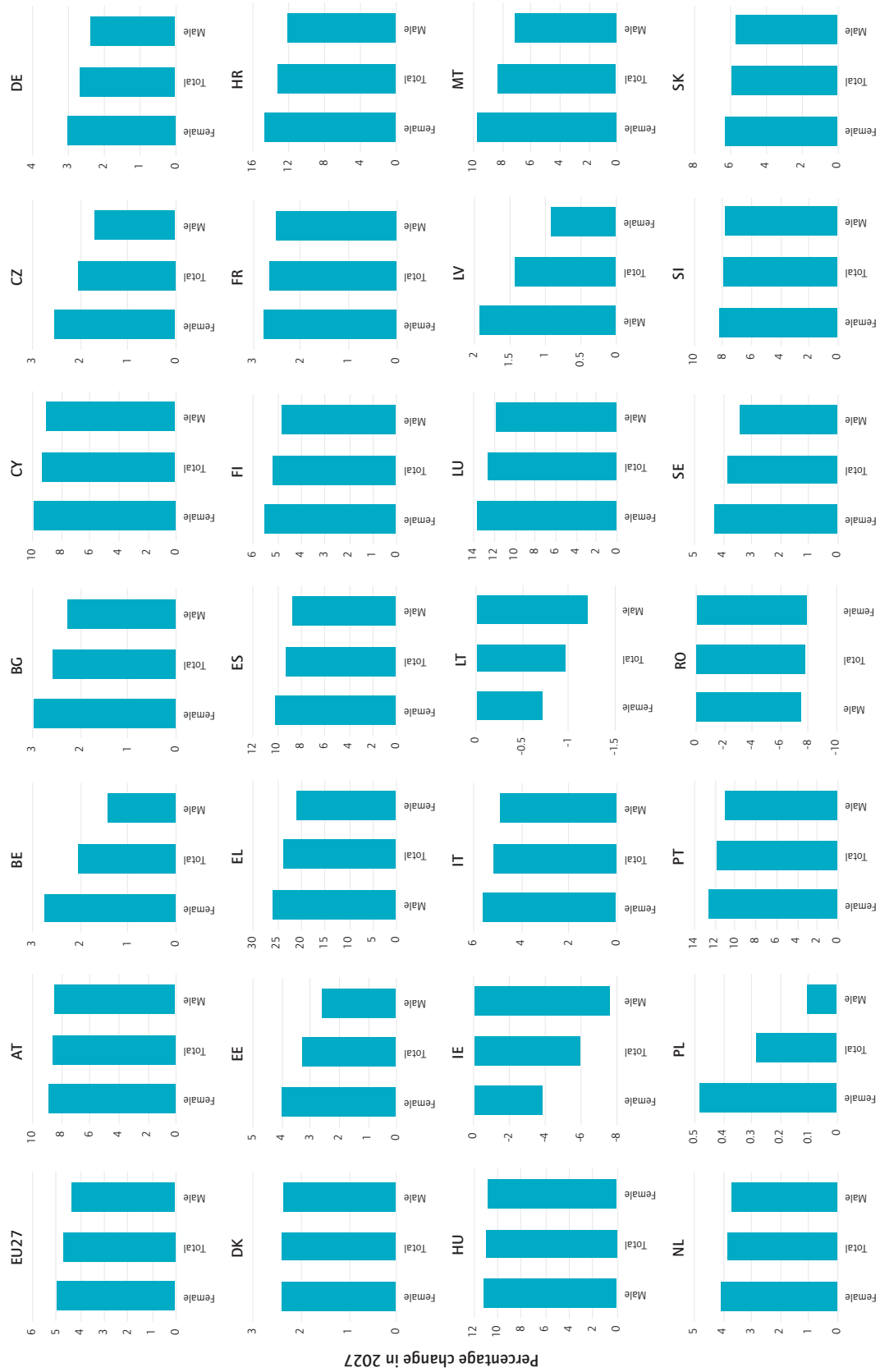
Figure 4.1 Change in employment by sex in EU27 – Index (2021=100) for 2027



Source: Author's calculations.

4. It should be emphasised that these results by labour market groups are based on constant shares of the various employment groups considered. We have not considered changes in the respective shares of these groups in the individual industries. This feature can be implemented in a next step. Consequently, the dynamics of labour market groups are driven by changes in the sectoral employment shares, which are driven by differentiated growth and productivity performance. As sectors tend to have different employment compositions, forecasted developments at the sectoral level shape what happens with the forecasts of the labour market groups at the total economy level.

Figure 4.2 Change in employment by sex in EU Member States – Index (2021=100) for 2027

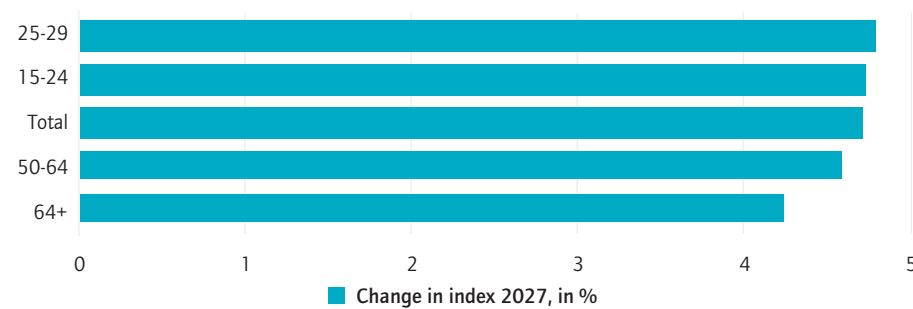


Source: Author's calculations.

4.2 Age

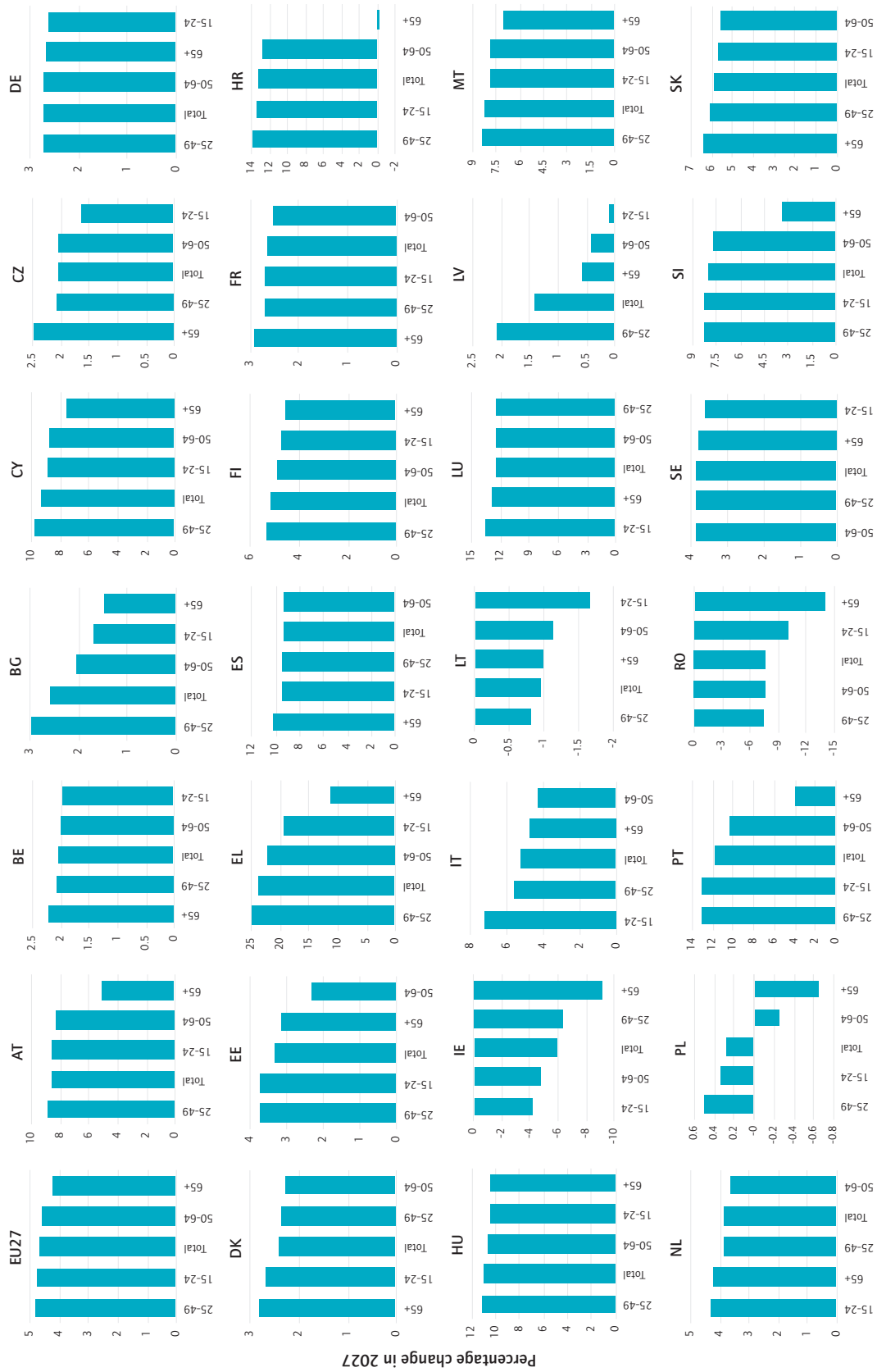
The employment dynamics are also slightly more favourable towards younger workers and are least dynamic for workers aged 65 or older, as can be seen in Figure 4.3, although differences are small. In this case, however, there is a strong heterogeneity across countries (see Figure 4.4), with several economies having more favourable dynamics for older workers. In Belgium, the Czech Republic, Germany, Lithuania, Latvia and Sweden, young people 15–24 years of age have the lowest growth rates. In Belgium, the Czech Republic, Denmark, Spain, France and the Slovak Republic, workers 65 or older have the highest growth rates.

Figure 4.3 Change in employment by age in EU27 – Index (2021=100) for 2027



Source: Author's calculations.

Figure 4.4 Change in employment by age in EU Member States – Index (2021=100) for 2027



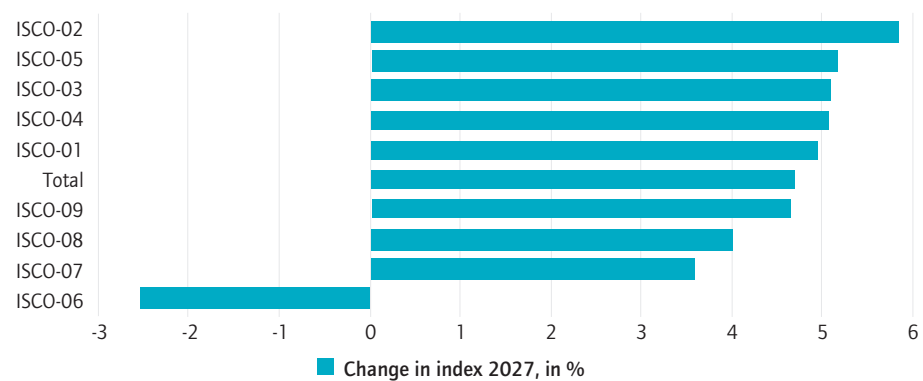
Source: Author's calculations.

4.3 Occupations

Finally, Figure 4.5 shows the dynamics by occupational categories. The largest increase is expected for Professionals (ISCO-o8 Group 2), with an increase of almost 6 per cent. Most of the other occupational groups grow by about 5 per cent. ISCO-o8 Groups 8 (Plant and machine operators and assemblers) and 7 (Craft and related trades workers), however, grow a bit less, at 4 and 3.5 per cent, respectively. Only one occupational group – ISCO-o8 Group 6 (Skilled agricultural, forestry and fishery workers) – is decreasing, consistent with the predicted decline in employment in agriculture.

This latter aspect – the negative or slow growth of ISCO-o8 Group 6 – is consistent across countries, as shown in Figure 4.6. Also, Group 2 (Professionals) is among the fastest-growing (or slowest-declining) occupational groups in all countries.

Figure 4.5 Change in employment by occupations in EU27 – Index (2021=100) for 2027



Source: Author's calculations.

Figure 4.6 Change in employment by occupations in EU member states - Index (2021=100) for 2027



Source: Author's calculations.

5. Alternative scenarios

5.1 Important challenges unfolding

Unfortunately, over recent months, significant disruptions have evolved, implying negative risks for economic recovery. Particularly, the European economies (among other developed nations) have come under the spectre of 'stagflation' as a result of energy and other basic commodity shocks. Though these have been looming since 2021, they have intensified since February because of Russia's invasion of Ukraine and the economic sanctions imposed by many advanced democracies on Russia. Further severe sanctions and counter-sanctions are pending. Inflation has already risen to rates not seen in the past 40 years. Many major economies (particularly the United States) and the European Central Bank have tightened their monetary policies. The increases in interest rates are likely to dampen economic growth, with the fear of a downturn or recession becoming omnipresent.

Global value chain disruptions have persisted and might intensify again (for example, in China) depending on how the pandemic and the war in Ukraine evolve. Concerning the pandemic, it is by no means certain that a future variant will be as manageable as omicron turned out to be. In these respects, the debate about European strategic autonomy regarding the supply of several critical goods is evolving. It may imply some structural changes in the European economy, although this is likely to be a gradual and long-term process (which could speed up because of the Russian war). Finally, a new refugee wave is entering Europe as more than 4–5 million Ukrainians are expected to leave their country (or have already done so). This has mainly impacted only a few countries so far, however.

On the policy side, the new crisis mode is likely to delay debate and conclusions regarding the impending EU economic governance reform, especially the fiscal rules reform that sets the context for national fiscal policies. New public spending pressures have emerged beyond the post-pandemic reconstruction, however, most notably for defence, the accommodation and integration of the wave of war refugees, and the mitigation of rising energy costs. Furthermore, the roll-out of Recovery and Resilience Facility (RFF) spending has started and should result in positive growth impacts. Digital and green transitions are already impacting the organisation of economic and social life, precipitating the automation and digitalisation of goods production and services provision. These structural changes are and will be taking place amid the current uncertainty regarding how vigorously public debt consolidation will be pursued.

At the more micro-level and at the same time, remote working, while having been rolled back to some extent, seems to be becoming a structural feature of organising work. In addition, there might be a change in attitudes to work as debates on changing perceptions of work and work–life balance have become more prominent.

5.2 Developments affecting economic performance

Let us discuss some of these challenges in more detail and how they might change the results from the baseline scenario presented above.

5.2.1 Consequences of the war in Ukraine and the inflation surge

The most daunting development has been the Russian war against Ukraine, which started in February this year, with an unforeseeable time horizon and outcome. This aggression can impact European economies in several ways, including (i) a surge in inflation, as can already be seen (though inflationary pressures which were already visible before the conflict began); (ii) an impact on energy supplies (particularly oil and gas) to Europe due to sanctions, counter-sanctions and war effects; (iii) migration waves to Europe; and (iv) increases in public spending (for example, increasing defence budgets, speeding up the green transition to develop alternatives to Russian supplies, and establishing support schemes to ease high energy prices).

These developments will likely cause various policy responses, particularly in monetary policy (for example, monetary tightening to combat the spectre of inflation) and the fiscal side (such as potential measures to address the economic fallout from energy shortages).

Model implementation: The impacts of these developments are largely reflected in the overall forecasts of output growth used and will be modelled by changing the macro-growth rates for a sensitivity analysis.

5.2.2 Covid-19 pandemic and related public health measures

The crucial question regarding the Covid-19 pandemic is whether any future virus variants will have characteristics that render social distancing measures necessary again. This would also depend on whether, and if so, to what extent, measures to reduce the airborne transmission of the virus would be taken and enforced and whether – and if so, how fast – one would have vaccines that are effective across strains of the virus. In addition, the spread of the virus in other parts of the world (for example, China) might again imply disruptions of global value chains, which needs to be considered. It seems that a significant worsening of the situation is unlikely, however.

Model implementation: The impacts of these developments are again largely reflected in the overall macro-growth forecasts used and will be modelled by changing the macro-growth rates for sensitivity analysis in the same way.

5.2.3 EU economic governance and related policies

The suspension of EU fiscal rules during the pandemic facilitated the roll-out of unprecedented public measures to support businesses, protect jobs and provide household income replacement. These policy measures significantly dampened the negative economic effects of the pandemic. They are now gradually being reduced, and repayment of the pandemic debt and reduction of public debt have started. Even though the RRF will support national public investment programmes, fiscal consolidation coupled with EU fiscal rules is likely to re-emerge in the post-pandemic years, though these could again be postponed because of the impacts of the Russian war.⁵ On the other hand, monetary policy is currently tightening, with interest rates hiked to 1.25 per cent recently⁶ in response to the strong increases in inflation. This feeds fears that growth which is anyway subdued due to high uncertainty will be further diminished in the near and medium terms.

Model implementation: The impacts of these developments are largely reflected in the overall macro-growth forecasts used. Thus upward deviations from these growth rates will provide a sensitivity analysis. By contrast, as tightening monetary policy might impact negatively on growth an adverse scenario with even lower growth rates compared with the baseline is presented.

5.3 Structural developments

5.3.1 Dual transition to a digital and net-zero carbon economy

The pandemic is widely understood as a catalyst for the digital transition because it emphasised, for instance, digital communication and meetings. Companies are expected to invest intensively in additional digital solutions. Furthermore, the European Green Deal (EGD) and the RRF are strongly committed to the green transition of EU economies. This has repercussions for the energy and transport sectors, among others, and cross-links to the digital economy.

Model implementation: The impact of digital technologies on employment levels or labour productivity is still under debate, with some recent

5. These scenarios therefore are only based on different macroeconomic growth rates and do not have an industry-specific component.

6. Specifically, the interest rate on the main refinancing operations and the interest rates on the marginal lending facility and the deposit facility will be increased to 1.25, 1.50 and 0.75 per cent, respectively, with effect from 14 September 2022.

literature pointing towards a very limited effect (for example, Stehrer 2022). Consequently, we do not expect a strong impact from this side.

5.3.2 The prevalence and conditions of remote work and changes in the perception of work

During the pandemic, with many workplaces in forced closure, working remotely has become the norm for many people. While it can enhance workers' flexibility and work autonomy, thus helping to achieve a work-life balance, empirical evidence indicates that it can also negatively affect mental health. Many argue that teleworking and various working-time arrangements are already the new normal and will persist in the post-pandemic period. In addition, there seems to be a possible change in attitudes towards work, which might impact the supply side of workers.

Model implementation: These very micro-level changes are difficult to implement in the model outlined above. Furthermore, some of these developments might be better screened from a supply-side perspective; however, this cannot be implemented in the model suggested for this project.

5.4 Assumptions for and results of alternative scenarios

Most of the abovementioned challenges will likely imply a downward risk to growth in the short term. In the long term, however, one might see more positive outcomes under certain circumstances. Therefore, additional scenarios can be implemented in the following way:

1. *Adverse scenario:* In this scenario, we reduce the macroeconomic growth rates as reported in Table 2.1 by 2 percentage points in 2022 and 2023, 1.5 percentage points in 2024, and 1 percentage point in 2025. Even worse, we might model a 'stagflationary' situation with low growth in 2022 and zero growth in 2023.
2. *Optimistic scenario:* In this scenario, we assume growth rates as reported in Table 2.1.

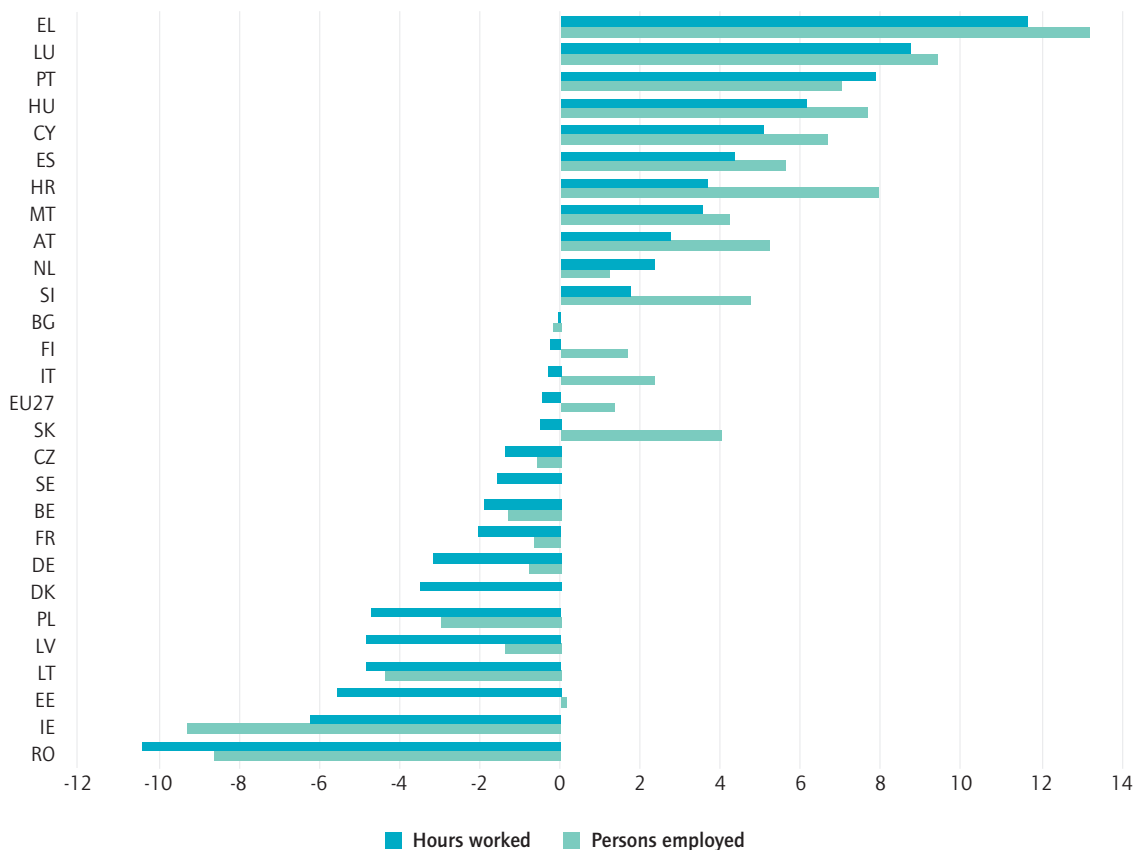
The results of these scenarios are presented in the next subsections. Concerning the adverse scenario, employment growth will be dampened again. For the EU27, this would result in levels of hours worked about 2 per cent lower than those observed for 2021, with only a very gradual recovery until 2027, though still not reaching the same level as 2021. In terms of persons employed, the situation is only slightly better. Results show that in 2027, employment levels would be slightly higher than in 2021. Compared with the baseline scenario, this would imply that employment levels would

be 3 per cent lower in 2027. Similar magnitudes are calculated for the EU Member States and by industries.⁷

According to the optimistic scenario, employment dynamics are more favourable, with levels above those in the reference year 2021. Specifically, in 2027, employment levels in terms of hours worked would have increased by 6 per cent (compared with about 3 per cent in the baseline scenario) and persons employed by about 8 per cent (compared with almost 5 per cent in the baseline scenario). These more optimistic dynamics are also observable in individual countries and industries. According to this scenario, only Romania and Ireland would face negative employment trends (for persons employed) until 2027.

5.4.1 Adverse scenario

Figure 5.1 EU Member States – Index (2021=100) for 2027



Source: Author's calculations.

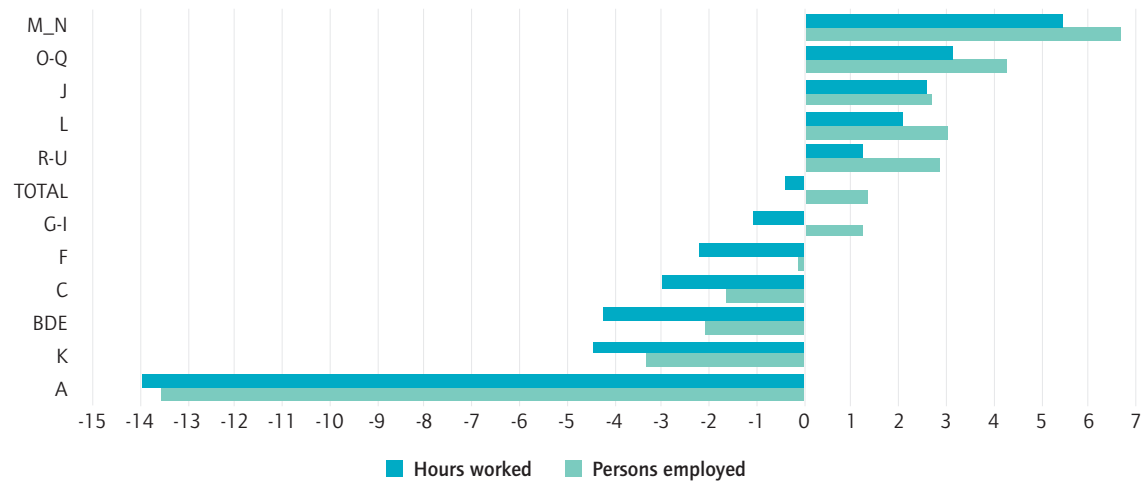
7. These scenarios are therefore based only on different macroeconomic growth rates and do not have an industry-specific component.

Table 5.1 Results by EU Member States and EU27 industries – Index 2021=1

Country	Hours worked							Persons employed						
	2021	2022	2023	2024	2025	2026	2027	2021	2022	2023	2024	2025	2026	2027
EU27	1.000	0.998	0.983	0.980	0.980	0.988	0.996	1.000	1.001	0.989	0.989	0.991	1.003	1.014
AT	1.000	1.011	0.999	1.001	1.004	1.015	1.027	1.000	1.015	1.007	1.013	1.020	1.036	1.052
BE	1.000	0.996	0.983	0.976	0.970	0.976	0.981	1.000	0.998	0.985	0.979	0.974	0.981	0.987
BG	1.000	0.989	0.973	0.981	0.982	0.991	0.999	1.000	0.989	0.973	0.980	0.981	0.990	0.999
CY	1.000	1.003	0.996	1.002	1.010	1.030	1.051	1.000	1.006	1.001	1.010	1.021	1.043	1.067
CZ	1.000	0.985	0.967	0.970	0.973	0.980	0.986	1.000	0.986	0.970	0.974	0.978	0.986	0.995
DE	1.000	0.986	0.972	0.964	0.961	0.965	0.968	1.000	0.990	0.980	0.976	0.977	0.985	0.992
DK	1.000	0.996	0.974	0.963	0.957	0.961	0.965	1.000	1.002	0.986	0.980	0.980	0.990	1.000
EE	1.000	0.968	0.940	0.936	0.934	0.939	0.944	1.000	0.978	0.959	0.964	0.972	0.987	1.002
EL	1.000	1.028	1.041	1.055	1.070	1.094	1.116	1.000	1.031	1.046	1.062	1.080	1.107	1.132
ES	1.000	1.014	1.008	1.018	1.022	1.033	1.043	1.000	1.016	1.013	1.025	1.031	1.044	1.056
FI	1.000	0.995	0.983	0.979	0.979	0.988	0.998	1.000	0.998	0.990	0.988	0.991	1.004	1.017
FR	1.000	0.996	0.981	0.973	0.969	0.974	0.980	1.000	0.998	0.986	0.980	0.978	0.986	0.994
HR	1.000	1.000	0.996	0.997	1.004	1.020	1.037	1.000	1.007	1.009	1.018	1.031	1.055	1.080
HU	1.000	1.020	1.009	1.018	1.029	1.046	1.062	1.000	1.022	1.013	1.025	1.038	1.058	1.077
IE	1.000	0.996	0.979	0.967	0.951	0.944	0.938	1.000	0.991	0.968	0.952	0.930	0.919	0.907
IT	1.000	1.006	0.993	0.988	0.987	0.994	0.997	1.000	1.011	1.002	1.002	1.005	1.017	1.024
LT	1.000	0.976	0.958	0.951	0.947	0.950	0.952	1.000	0.977	0.959	0.953	0.950	0.954	0.957
LU	1.000	1.006	1.006	1.020	1.035	1.061	1.087	1.000	1.007	1.009	1.023	1.040	1.066	1.094
LV	1.000	0.989	0.960	0.954	0.947	0.950	0.952	1.000	0.994	0.972	0.972	0.970	0.978	0.987
MT	1.000	1.008	1.005	1.008	1.010	1.023	1.036	1.000	1.009	1.007	1.011	1.015	1.029	1.042
NL	1.000	1.008	0.995	0.996	0.998	1.011	1.023	1.000	1.006	0.991	0.990	0.991	1.001	1.012
PL	1.000	1.002	0.967	0.954	0.947	0.950	0.953	1.000	1.005	0.973	0.963	0.959	0.965	0.971
PT	1.000	1.041	1.035	1.040	1.047	1.063	1.079	1.000	1.039	1.033	1.036	1.042	1.056	1.070
RO	1.000	0.977	0.944	0.926	0.909	0.903	0.896	1.000	0.980	0.950	0.935	0.922	0.918	0.914
SE	1.000	0.984	0.963	0.962	0.963	0.974	0.985	1.000	0.987	0.968	0.970	0.974	0.987	1.000
SI	1.000	1.018	0.992	0.991	0.994	1.006	1.018	1.000	1.023	1.002	1.005	1.013	1.031	1.048
SK	1.000	0.979	0.967	0.970	0.978	0.987	0.995	1.000	0.987	0.981	0.992	1.007	1.024	1.040
Industry	Hours worked							Persons employed						
	2021	2022	2023	2024	2025	2026	2027	2021	2022	2023	2024	2025	2026	2027
TOTAL	1.000	0.998	0.983	0.980	0.980	0.988	0.996	1.000	1.001	0.989	0.989	0.991	1.003	1.014
A	1.000	0.975	0.945	0.921	0.898	0.879	0.860	1.000	0.975	0.947	0.923	0.901	0.883	0.865
BDE	1.000	0.991	0.971	0.961	0.955	0.957	0.958	1.000	0.995	0.978	0.972	0.969	0.975	0.979
C	1.000	0.993	0.973	0.965	0.960	0.966	0.970	1.000	0.995	0.977	0.971	0.969	0.977	0.983
F	1.000	0.996	0.991	0.988	0.984	0.981	0.978	1.000	1.000	0.998	0.998	0.998	0.998	0.999
G-I	1.000	0.996	0.979	0.974	0.973	0.982	0.989	1.000	1.000	0.986	0.985	0.988	1.000	1.012
J	1.000	0.999	0.962	0.959	0.964	0.996	1.026	1.000	1.000	0.963	0.959	0.965	0.997	1.027
K	1.000	0.992	0.985	0.977	0.970	0.963	0.956	1.000	0.994	0.988	0.983	0.977	0.972	0.967
L	1.000	1.002	0.994	0.996	0.999	1.010	1.021	1.000	1.004	0.998	1.000	1.006	1.018	1.030
M_N	1.000	1.006	0.991	0.996	1.005	1.030	1.054	1.000	1.008	0.995	1.002	1.013	1.041	1.067
O-Q	1.000	1.004	1.003	1.007	1.012	1.022	1.031	1.000	1.006	1.007	1.013	1.020	1.032	1.043
R-U	1.000	1.001	0.997	0.998	1.000	1.006	1.012	1.000	1.004	1.003	1.006	1.011	1.020	1.029

Source: Author's calculations.

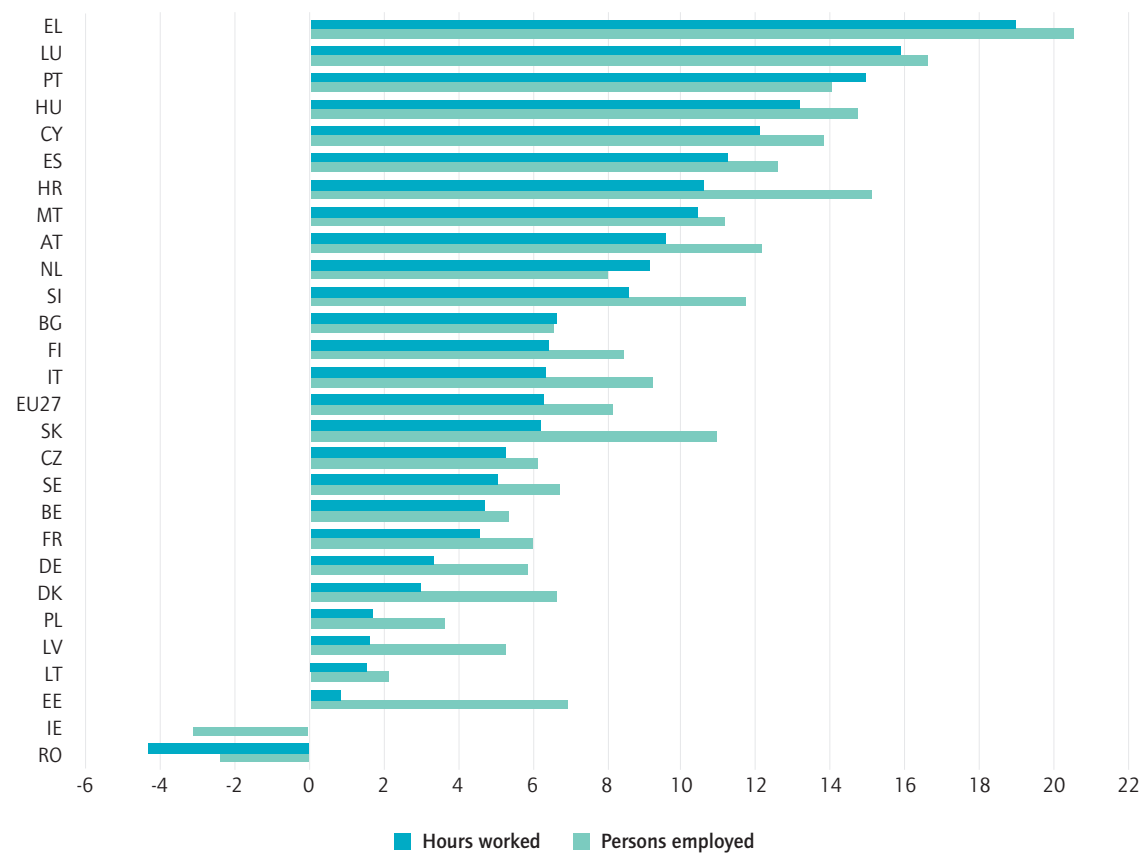
Figure 5.2 Industry level – Index (2021=100) for 2027



Source: Author's calculations.

5.4.2 Optimistic scenario

Figure 5.3 EU Member States – Index (2021=100) for 2027



Source: Author's calculations.

Table 5.2 Results by EU Member States and EU27 industries – Index 2021=1

Country	Hours worked							Persons employed						
	2021	2022	2023	2024	2025	2026	2027	2021	2022	2023	2024	2025	2026	2027
EU27	1.000	1.018	1.023	1.035	1.045	1.054	1.063	1.000	1.021	1.029	1.044	1.058	1.070	1.081
AT	1.000	1.031	1.040	1.057	1.070	1.083	1.096	1.000	1.035	1.048	1.069	1.087	1.104	1.122
BE	1.000	1.016	1.023	1.031	1.035	1.041	1.047	1.000	1.018	1.025	1.034	1.040	1.047	1.053
BG	1.000	1.009	1.013	1.036	1.048	1.057	1.066	1.000	1.009	1.013	1.036	1.047	1.056	1.066
CY	1.000	1.023	1.036	1.058	1.077	1.098	1.121	1.000	1.026	1.041	1.066	1.088	1.112	1.138
CZ	1.000	1.005	1.007	1.025	1.038	1.045	1.053	1.000	1.006	1.010	1.029	1.044	1.053	1.061
DE	1.000	1.006	1.012	1.019	1.025	1.030	1.033	1.000	1.010	1.020	1.031	1.042	1.051	1.059
DK	1.000	1.016	1.014	1.018	1.022	1.026	1.030	1.000	1.022	1.026	1.036	1.046	1.056	1.067
EE	1.000	0.988	0.980	0.990	0.998	1.003	1.009	1.000	0.998	0.999	1.019	1.037	1.053	1.069
EL	1.000	1.048	1.082	1.113	1.140	1.166	1.189	1.000	1.051	1.087	1.120	1.150	1.179	1.205
ES	1.000	1.034	1.049	1.075	1.090	1.102	1.112	1.000	1.036	1.053	1.082	1.099	1.113	1.126
FI	1.000	1.015	1.023	1.034	1.044	1.054	1.064	1.000	1.018	1.030	1.044	1.057	1.071	1.084
FR	1.000	1.016	1.021	1.028	1.034	1.040	1.045	1.000	1.018	1.026	1.035	1.043	1.052	1.060
HR	1.000	1.020	1.036	1.053	1.070	1.088	1.106	1.000	1.027	1.050	1.074	1.099	1.125	1.151
HU	1.000	1.040	1.049	1.074	1.097	1.115	1.132	1.000	1.042	1.054	1.082	1.107	1.128	1.148
IE	1.000	1.016	1.019	1.022	1.015	1.008	1.001	1.000	1.011	1.008	1.006	0.993	0.981	0.969
IT	1.000	1.026	1.033	1.044	1.053	1.061	1.063	1.000	1.031	1.042	1.058	1.072	1.084	1.092
LT	1.000	0.996	0.997	1.005	1.011	1.014	1.016	1.000	0.997	0.999	1.008	1.014	1.019	1.021
LU	1.000	1.026	1.047	1.077	1.104	1.131	1.159	1.000	1.027	1.049	1.080	1.108	1.137	1.166
LV	1.000	1.009	1.000	1.009	1.011	1.014	1.016	1.000	1.014	1.012	1.027	1.035	1.044	1.053
MT	1.000	1.028	1.046	1.064	1.077	1.091	1.104	1.000	1.029	1.048	1.068	1.082	1.097	1.111
NL	1.000	1.028	1.035	1.051	1.065	1.078	1.092	1.000	1.026	1.032	1.046	1.057	1.068	1.080
PL	1.000	1.022	1.007	1.008	1.011	1.014	1.017	1.000	1.025	1.013	1.018	1.024	1.030	1.036
PT	1.000	1.061	1.077	1.098	1.116	1.133	1.150	1.000	1.059	1.074	1.093	1.110	1.125	1.140
RO	1.000	0.997	0.983	0.979	0.972	0.964	0.957	1.000	1.000	0.990	0.988	0.984	0.980	0.976
SE	1.000	1.004	1.003	1.017	1.028	1.039	1.051	1.000	1.007	1.008	1.025	1.039	1.053	1.067
SI	1.000	1.038	1.033	1.046	1.060	1.073	1.086	1.000	1.043	1.042	1.061	1.081	1.099	1.117
SK	1.000	0.999	1.007	1.025	1.044	1.053	1.062	1.000	1.007	1.021	1.047	1.074	1.092	1.109
Industry	Hours worked							Persons employed						
	2021	2022	2023	2024	2025	2026	2027	2021	2022	2023	2024	2025	2026	2027
TOTAL	1.000	1.018	1.023	1.035	1.045	1.054	1.063	1.000	1.021	1.029	1.044	1.058	1.070	1.081
A	1.000	0.982	0.960	0.941	0.922	0.902	0.883	1.000	0.983	0.962	0.944	0.925	0.906	0.887
BDE	1.000	1.011	1.010	1.015	1.019	1.021	1.022	1.000	1.015	1.018	1.026	1.033	1.039	1.044
C	1.000	1.016	1.018	1.028	1.035	1.041	1.046	1.000	1.018	1.023	1.035	1.044	1.053	1.060
F	1.000	0.998	0.995	0.992	0.989	0.987	0.984	1.000	1.001	1.002	1.002	1.003	1.004	1.004
G-I	1.000	1.020	1.025	1.038	1.049	1.058	1.067	1.000	1.023	1.033	1.050	1.065	1.079	1.091
J	1.000	1.061	1.086	1.132	1.173	1.211	1.248	1.000	1.061	1.086	1.132	1.173	1.212	1.249
K	1.000	0.993	0.986	0.979	0.971	0.964	0.957	1.000	0.995	0.989	0.984	0.979	0.973	0.968
L	1.000	1.018	1.027	1.041	1.053	1.065	1.076	1.000	1.020	1.030	1.046	1.060	1.073	1.086
M_N	1.000	1.040	1.061	1.093	1.122	1.150	1.177	1.000	1.042	1.065	1.100	1.131	1.162	1.191
O-Q	1.000	1.014	1.022	1.033	1.044	1.053	1.063	1.000	1.016	1.026	1.039	1.051	1.063	1.075
R-U	1.000	1.010	1.015	1.023	1.029	1.036	1.042	1.000	1.013	1.020	1.031	1.040	1.050	1.058

Source: Author's calculations.

Figure 5.4 Industry level – Index (2021=100) for 2027



Source: Author's calculations.

5.4.3 Employment dynamics by labour force groups under alternative scenarios

Table A.33 in the annex, compares the results of the three scenarios by labour market groups for EU27. In all three scenarios the employment levels of females and males in 2027 would surpass the ones in 2021, however only by 2% (females) and 1% (males) in the adverse scenario. In the more optimistic scenario employment levels in 2027 would be higher by around 8% for both groups. Such results are also similarly the case when considering age groups, i.e. employment levels are about 1.5% higher in the adverse scenario (1.1% for those aged older than 64), whereas in the more optimistic scenario the levels would increase between 7 and 8%. With respect to occupational groups employment levels for managers, professionals, technicians and associate professionals and services and sales workers, but also elementary occupations, would increase between 1-2% in the adverse scenario and between 8 and 9% in the more optimistic scenario. For craft and related trade workers and plant and machine operators, and assemblers there would be hardly any increase in employment levels in the adverse scenario, whereas employment levels would increase by 6.7% and 7.5%, respectively, in the more optimistic scenario. Finally, the employment levels of skilled agricultural, forestry, and fishery workers would decline by 5% in the adverse scenario in 2027, but remain constant in the more optimistic scenario.

6. Summary and conclusions

In 2022, the economies of the EU27 seemed to have more or less recovered from the impact of the pandemic that hit the world economy in 2020 and 2021. Unfortunately, the Russian war of aggression against Ukraine, which started in February 2022, has imposed a further big and unprecedented shock to the world economy, and specifically the European economies, because of their strong dependencies on energy supplies and other goods from Russia and Ukraine. This has resulted in a surge of inflation rates in most of the advanced economies (though they had begun increasing before the war started) and a dampening of economic growth, leading to downward revisions of the previous optimistic short- and long-term growth forecasts.

In this report, we use these output growth forecasts and combine them with long-term growth rates (trends) of value added and labour productivity at the sectoral level, allowing us to generate scenarios concerning likely future employment dynamics. The results in the baseline scenario point towards meagre employment growth over the years to come in the EU27, though levels will remain above those in 2021. According to this scenario, in 2027, employment would grow by about 3 per cent for hours worked and almost 5 per cent for persons employed, though there are big differences across the EU Member States (driven mainly by differences in labour productivity growth rates and macroeconomic forecasts). In terms of industries, Information and communications (NACE Rev. 2 J) and Professional, scientific, technical, administration and support service activities (NACE Rev. 2 M&N) would be the fastest growing industries, whereas employment would decline in Agriculture (NACE Rev. 2 A) and Financial and insurance activities (NACE Rev. 2 K). Breaking down these trends by labour market groups indicates that employment dynamics are slightly more favourable for females and younger workers. There are big differences across countries, however, particularly concerning age groups. In terms of occupational categories, Professionals (ISCO-o8 code 2), Services and Sales Workers (ISCO-o8 code 5), Technicians and Associate Professionals (ISCO-o8 code 3) and Clerical Support Workers (ISCO-o8 code 4) will grow relatively faster. The only declining occupational group is Skilled Agricultural, Forestry, and Fishery Workers (ISCO-o8 code 6), according to these scenarios.

In a scenario with strongly dampened growth rates in the short term and lower growth rates in the long term, the calculations indicate that employment would not or only barely recover over the period considered compared with the levels in 2021. In a more optimistic scenario (with growth rates in line

with this year's forecasts by the European Commission in summer and the IMF 2022b), employment dynamics would be more favourable, and levels would be above the ones in 2021 over the whole period.

Employment levels would be higher by 6 per cent (in terms of hours worked) and 8 per cent (in terms of persons employed) in 2027 for the EU27. Given current circumstances, however, this might be by far too optimistic a scenario.

In terms of policies, one has to find a delicate balance between combatting the high inflation rates without reducing economic dynamics and keeping up real income levels and demand. Rapid measures to reduce energy dependencies, particularly from Russia, are needed in Europe. This goes hand in hand with speeding up the green transition, which is one of the main policy changes needed to fight global warming.

Bibliography

- European Commission (2022a) European economic forecast – Spring 2022. Institutional Paper 173, Publications Office of the European Union.
- European Commission (2022b) European economic forecast – Summer 2022. Institutional Paper 183, Publications Office of the European Union.
- IMF (2022a) World Economic Outlook – Update July 2022: Gloomy and more uncertain, International Monetary Fund.
- IMF (2022b) World Economic Outlook: War sets back the global recovery, International Monetary Fund.
- Jestl S. and Stehrer R. (2021) EU employment dynamics: the pandemic years and beyond,, Working Paper 2021.09, ETUI.
- Stehrer R. (2022) The impact of ICT and intangible capital accumulation on labour demand growth and functional income shares, wiiw Working Paper 218, The Vienna Institute for International Economic Studies.

Appendix

Employment by labour force groups and scenarios for EU-27, Index 2021=1

	Sex													
	Female							Male						
	2021	2022	2023	2024	2025	2026	2027	2021	2022	2023	2024	2025	2026	2027
Baseline scenario	1.000	1.011	1.011	1.018	1.027	1.039	1.050	1.000	1.010	1.008	1.015	1.022	1.034	1.044
Optimistic scenario	1.000	1.020	1.030	1.045	1.059	1.071	1.083	1.000	1.020	1.028	1.043	1.056	1.067	1.079
Adverse scenario	1.000	1.001	0.992	0.992	0.996	1.007	1.019	1.000	1.000	0.988	0.988	0.990	1.001	1.011
	Age													
	15-24							25-49						
	2021	2022	2023	2024	2025	2026	2027	2021	2022	2023	2024	2025	2026	2027
Baseline scenario	1.000	1.011	1.009	1.016	1.024	1.036	1.047	1.000	1.011	1.009	1.017	1.025	1.037	1.048
Optimistic scenario	1.000	1.021	1.029	1.044	1.058	1.070	1.082	1.000	1.020	1.029	1.044	1.058	1.070	1.082
Adverse scenario	1.000	1.001	0.989	0.989	0.992	1.003	1.014	1.000	1.001	0.990	0.990	0.992	1.004	1.015
	50-64							>64						
	2021	2022	2023	2024	2025	2026	2027	2021	2022	2023	2024	2025	2026	2027
	2021	2022	2023	2024	2025	2026	2027	2021	2022	2023	2024	2025	2026	2027
Baseline scenario	1.000	1.010	1.009	1.016	1.024	1.035	1.046	1.000	1.009	1.008	1.014	1.021	1.032	1.042
Optimistic scenario	1.000	1.020	1.028	1.043	1.055	1.067	1.078	1.000	1.019	1.027	1.041	1.053	1.064	1.075
Adverse scenario	1.000	1.001	0.990	0.990	0.993	1.004	1.014	1.000	1.000	0.989	0.988	0.990	1.001	1.011
	Occupational groups													
	OC1 - Managers							OC2 - Professionals						
	2021	2022	2023	2024	2025	2026	2027	2021	2022	2023	2024	2025	2026	2027
Baseline scenario	1.000	1.011	1.010	1.017	1.026	1.038	1.050	1.000	1.012	1.013	1.022	1.031	1.045	1.058
Optimistic scenario	1.000	1.021	1.030	1.046	1.060	1.073	1.085	1.000	1.022	1.033	1.050	1.066	1.080	1.094
Adverse scenario	1.000	1.001	0.989	0.989	0.992	1.004	1.015	1.000	1.002	0.993	0.994	0.998	1.012	1.024
	OC3 - Technicians and Associate Professionals							OC4 - Clerical Support Workers						
	2021	2022	2023	2024	2025	2026	2027	2021	2022	2023	2024	2025	2026	2027
	2021	2022	2023	2024	2025	2026	2027	2021	2022	2023	2024	2025	2026	2027
Baseline scenario	1.000	1.011	1.011	1.018	1.027	1.039	1.051	1.000	1.011	1.010	1.018	1.026	1.039	1.051
Optimistic scenario	1.000	1.021	1.030	1.046	1.059	1.072	1.085	1.000	1.021	1.030	1.046	1.060	1.073	1.085
Adverse scenario	1.000	1.001	0.991	0.992	0.995	1.007	1.018	1.000	1.001	0.990	0.991	0.994	1.006	1.017
	OC5 - Services and Sales Workers							OC6 - Skilled Agricultural, Forestry, and Fishery Workers						
	2021	2022	2023	2024	2025	2026	2027	2021	2022	2023	2024	2025	2026	2027
	2021	2022	2023	2024	2025	2026	2027	2021	2022	2023	2024	2025	2026	2027
Baseline scenario	1.000	1.011	1.011	1.019	1.027	1.040	1.052	1.000	0.997	0.986	0.981	0.977	0.976	0.975
Optimistic scenario	1.000	1.021	1.031	1.046	1.060	1.073	1.085	1.000	1.005	1.001	1.002	1.002	1.001	1.000
Adverse scenario	1.000	1.002	0.991	0.992	0.995	1.007	1.019	1.000	0.990	0.971	0.961	0.953	0.952	0.950
	OC7 - Craft and Related Trades Workers							OC8 - Plant and Machine Operators, and Assemblers						
	2021	2022	2023	2024	2025	2026	2027	2021	2022	2023	2024	2025	2026	2027
	2021	2022	2023	2024	2025	2026	2027	2021	2022	2023	2024	2025	2026	2027
Baseline scenario	1.000	1.008	1.006	1.012	1.018	1.027	1.036	1.000	1.010	1.007	1.013	1.019	1.030	1.040
Optimistic scenario	1.000	1.017	1.024	1.037	1.047	1.057	1.067	1.000	1.020	1.027	1.041	1.054	1.065	1.075
Adverse scenario	1.000	1.000	0.988	0.987	0.988	0.998	1.006	1.000	0.999	0.986	0.985	0.986	0.996	1.006
	OC9 - Elementary Occupations													
	2021	2022	2023	2024	2025	2026	2027							
	2021	2022	2023	2024	2025	2026	2027							
Baseline scenario	1.000	1.010	1.009	1.016	1.024	1.036	1.047							
Optimistic scenario	1.000	1.020	1.029	1.044	1.057	1.069	1.080							
Adverse scenario	1.000	1.001	0.990	0.989	0.992	1.003	1.014							

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