



# Annual Report on Intra-EU Labour Mobility 2022



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Unit E.1 — Labour Mobility, Public Employment Services, ELA

*E-mail: [EMPL-E1-UNIT@ec.europa.eu](mailto:EMPL-E1-UNIT@ec.europa.eu)*

*European Commission  
B-1049 Brussels*

# **Annual Report on Intra-EU Labour Mobility 2022**

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Written by Emmanuel Hassan, Linus Siöland, Berkay Akbaba, Daniela Cinova, Michela Gasperini and Matthew Geraci; Network of Experts on Free Movement of Workers and Social Security Coordination

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## Country codes<sup>1</sup>

<b>AT</b>	Austria	<b>EE</b>	Estonia	<b>IS</b>	Iceland	<b>PL</b>	Poland
<b>BE</b>	Belgium	<b>EL</b>	Greece	<b>IT</b>	Italy	<b>PT</b>	Portugal
<b>BG</b>	Bulgaria	<b>ES</b>	Spain	<b>LT</b>	Lithuania	<b>RO</b>	Romania
<b>CH</b>	Switzerland	<b>FI</b>	Finland	<b>LU</b>	Luxembourg	<b>SE</b>	Sweden
<b>CY</b>	Cyprus	<b>FR</b>	France	<b>LV</b>	Latvia	<b>SI</b>	Slovenia
<b>CZ</b>	Czechia	<b>HR</b>	Croatia	<b>MT</b>	Malta	<b>SK</b>	Slovakia
<b>DE</b>	Germany	<b>HU</b>	Hungary	<b>NL</b>	Netherlands	<b>UK</b>	United Kingdom
<b>DK</b>	Denmark	<b>IE</b>	Ireland	<b>NO</b>	Norway		

## Abbreviations and acronyms

<b>AEBR</b>	Association of European Border Regions
<b>AFMP</b>	Agreement on the Free Movement of Persons
<b>CEDEFOP</b>	European Centre for the Development of Vocational Training
<b>EEA</b>	European Economic Area, consisting of the Member States of the European Union and Iceland, Liechtenstein, and Norway
<b>EFTA</b>	European Free Trade Association, consisting of Iceland, Liechtenstein, Norway, and Switzerland <sup>2</sup>
<b>EU</b>	When not otherwise specified, 'EU' refers to the composition of the European Union in the reference year
<b>EU-27</b>	The European Union in its current composition of 27 Member States
<b>EU-28</b>	The European Union in its previous composition of 28 Member States, prior to the withdrawal of the United Kingdom on 31 January 2020
<b>EU-LFS</b>	EU Labour Force Survey <sup>3</sup>
<b>EURES</b>	European Employment Services, a cooperation network of public employment services, other employment services, trade unions, and employers' organisations
<b>ISCO</b>	The international standard classification of occupations <sup>4</sup>

<sup>1</sup> This report generally lists countries in alphabetical order of their codes, as per the guidelines in Publications Office of the European Union (2022), *Interinstitutional Style Guide*, Luxembourg, Publications Office of the European Union, Section 7.1. Exceptions are made when, for reasons of clarity, they are arranged by data size.

<sup>2</sup> Due to data restrictions, Liechtenstein is omitted from the analysis in this report.

<sup>3</sup> Eurostat (2022b), *European Union Labour Force Survey (EU-LFS)* [Online]. Available online: <https://ec.europa.eu/eurostat/web/microdata/european-union-labour-force-survey> [Accessed 15 September 2022].

<sup>4</sup> International Labour Organization (ILO) (2022), *The International Standard Classification of Occupations-ISCO-08* [Online]. Available online: <https://isco-ilo.netlify.app/en/isco-08/> [Accessed 12 December 2022].

<b>JVR</b>	Job vacancy rate
<b>NCO</b>	National Coordination Office
<b>NUTS</b>	Nomenclature of Territorial Units for Statistics
<b>ONS</b>	Office for National Statistics in the United Kingdom
<b>TCNs</b>	Third-country nationals, i.e. residents of EU and EFTA countries who are neither EU nor EFTA citizens
<b>TFEU</b>	Treaty on the Functioning of the European Union

## Definitions

<b>Active</b>	This category involves those who are in employment, or seeking employment (i.e. registered as unemployed). Unless mentioned otherwise, based on definition used in the EU-LFS: the group of 'employed' includes persons who did any work (one hour or more) for pay or profit during the reference week, and those who had a job or business but were temporarily absent. The group of 'unemployed' includes those who were not working during the reference week, but who had found a job starting within three months, or who are actively seeking employment and are available to work <sup>5</sup> .
<b>Agreement on the free movement of persons (AFMP)</b>	Bilateral Agreement between the EU and Switzerland that grants the citizens of Switzerland and the EU the right to freely choose their place of employment and residence within the national territories of the contracting parties. The Agreement was signed in 1999 and entered into force in 2002. It was subsequently extended to the Member States that joined the EU after 2002 <sup>6</sup> .
<b>Alpine region</b>	Macro-region that comprises bordering regions between Italy (Piedmont, Lombardy, Valle d'Aosta and Liguria), France (Franche-Comté, Rhône-Alpes, and Provence-Alpes-Côte d'Azur) and Switzerland (Lemanic region, Espace Mittelland and Ticino) (definition created for the purpose of this study).
<b>Border or bordering regions</b>	Regions at NUTS-2 level located along internal EU and EFTA borders.
<b>Centroepe region</b>	Macro-region that comprises bordering regions between Austria (Vienna, Lower Austria, Burgenland), Slovakia (Bratislava and Western Slovakia), Hungary (Central and Western Transdanubia) and Czechia (Southeast and Central Moravia) (definition created for the purpose of this study).
<b>Circular mobility</b>	Circular mobility is exercised by a person repeatedly changing residence between two or more countries (e.g. moving from Portugal to Belgium and back to Portugal – or Spain or any other MS). This definition is also used by the European Migration Network.
<b>Country of citizenship</b>	The country of which a person holds citizenship.

<sup>5</sup> Eurostat (2021), 'EU Labour Force Survey Database User Guide (data up to reference year 2020)', Eurostat, Luxembourg, p. 55.

<sup>6</sup> Swiss Confederation Central Compensation Office (CCO) (2022), *Agreement on the Free Movement of Persons - EU* [Online]. Available online: [https://www.zas.admin.ch/zas/en/home/bases-legales-et-coordination-internationale/coordination\\_internationale\\_securite\\_sociale/accord\\_libre\\_circulation\\_ue.html](https://www.zas.admin.ch/zas/en/home/bases-legales-et-coordination-internationale/coordination_internationale_securite_sociale/accord_libre_circulation_ue.html) [Accessed 15 September 2022].

<b>Country of origin</b>	The terms 'country of origin' and 'country of citizenship' are used interchangeably throughout the report.
<b>Country of residence</b>	The country in which a person habitually resides. According to Regulation (EC) No 862/2007 on Community statistics on migration and international protection <sup>7</sup> , 'usual residence' means the place at which a person normally spends the daily period of rest (...) or, by default, the place of legal or registered residence. In this report, persons are counted as residents of a certain country if they have resided there for at least 12 months or intend to do so. This is in line with measurement, as the EU-LFS <sup>8</sup> and the Eurostat migration statistics only capture persons who stay, or intend to stay, in a country for one year or more.
<b>Cross-border worker</b>	For the purposes of this study, cross-border workers are defined as EU or EFTA citizens who live in one EU or EFTA country and work in another, either as employees or self-employed. Cross-border workers therefore move across borders more or less regularly <sup>9</sup> . Cross-border workers may include the legally defined groups of seasonal <sup>10</sup> and frontier workers <sup>11</sup> and may also include some posted workers as specified in Regulation (EC) 883/2004 <sup>12</sup> . However, the data include all persons who live in one country and work in another. To align with the other parts of the study, data presented here look only at cross-border workers of EU or EFTA nationality. They can be EU and EFTA movers – meaning they live in a different Member State than their country of citizenship – and cross-border workers at the same time (e.g. where a French person lives in Belgium and works in Luxembourg).
<b>Eastern European countries</b>	Bulgaria, Czechia, Croatia, Hungary, Poland, Romania, Slovakia, Slovenia (definition created for the purpose of this study)
<b>Employed</b>	Any person engaged in an activity to produce goods or provide services for pay or profit, as per the definition of the International Labour Organization (ILO) <sup>13</sup> . Operationally, the concept is measured through specific surveys such as the EU-LFS. In the EU-LFS, a person is defined as employed if, in a reference week, they worked for at least one hour or had a job or business but were temporarily absent. The concept includes dependent and self-employed workers.
<b>Employment rate</b>	The percentage of employed persons, over the total population in the same reference group

<sup>7</sup> Regulation (EC) No 862/2007 of the European Parliament and of the Council of 11 July 2007 on Community statistics on migration and international protection.

<sup>8</sup> Eurostat (2018), 'EU Labour Force Survey Explanatory Notes (to be applied from 2017Q1 onwards)', Eurostat, Luxembourg.

<sup>9</sup> The frequency of commuting cannot be identified in the EU-LFS, which is the data source for the estimation of numbers of cross-border workers.

<sup>10</sup> Seasonal workers are defined in Regulation (EEC) No 1408/71 on the application of social security schemes to employed persons and their families moving within the Community, Article 1(c). They enjoy the right to free movement according Regulation (EU) No 492/2011 and equal treatment with nationals, according to Directive (EU) No 2014/54. For more details on the definition, cf. Fries-Tersch, et al. (2017), '2016 Annual Report on intra-EU Labour Mobility', Section 2.2.3.

<sup>11</sup> Frontier workers are defined as cross-border workers who return to their country of residence 'as a rule daily or at least once a week', according to Regulation (EC) No 883/2004 on the coordination of social security systems, Article 1(f). They have the right to equal treatment with nationals, according to Directive 2014/54/EU of 16 April 2014 on measures facilitating the exercise of rights conferred on workers in the context of freedom of movement for workers.

<sup>12</sup> Regulation No 883/2004. Further explanations on the legislative framework can be found in the specific report on posting: De Wispelaere, et al. (2021), 'Posting of workers: Report on A1 Portable Documents issued in 2020', European Commission (DG EMPL), Brussels.

<sup>13</sup> International Labor Organization (ILO) (2022), *Concepts and definitions* [Online]. Available online: <https://ilostat.ilo.org/resources/concepts-and-definitions/> [Accessed 15 September 2022].

<b>EU and EFTA movers</b>	EU or EFTA citizens who reside in an EU or EFTA country other than their country of citizenship (definition created for the purposes of the study).
<b>Foreigner</b>	Any person who is not a citizen of the country in which they reside. This term is used here to refer to both EU and EFTA movers and third-country nationals.
<b>Frontier worker</b>	Frontier workers are a subset of cross-border workers. In the context of Chapter 3 of this report, they are cross-border workers who specifically return to their country of residence <i>daily or at least weekly</i> , and who reside in a border region.
<b>Greater Region</b>	Macro-region that comprises bordering regions between Belgium (provinces of Liège and Luxembourg), Grand Duchy of Luxembourg, France (Lorraine) and Germany (Saarland and Trier) (definition created for the purpose of this study).
<b>Inflows</b>	The total number of persons who establish their usual residence <sup>14</sup> in the reference year in a given country for a period expected to be at least 12 months, having previously resided in a different country <sup>15</sup> .
<b>Inflow rate</b>	The percentage of inflows of a certain group of people over the population in the same reference group residing in the country of destination <sup>16</sup> .
<b>Inactive</b>	Any person who is neither employed nor unemployed according to the ILO definition (see above and below); this group of inactive typically includes people in retirement or early retirement, pupils/students/people in training, homemakers, those in compulsory military service, those with permanent disabilities <sup>17</sup> .
<b>International Standard Classification of Occupations (ISCO)</b>	A hierarchically structured categorisation that allows for the division of all jobs in the world into 436 unit groups (ISCO-4D). These groups, which form the most detailed level of the categorisation structure, are combined into 10 major groups (ISCO-1D), 43 sub-major groups (ISCO-2D), and 130 minor groups (ISCO-3D) based on their similarity of skill level and specialisation needed for the jobs. This report largely utilises ISCO-1D and ISCO-2D categorisations. <sup>18</sup>
<b>Job vacancy rate</b>	The number of total job vacancies over the sum of total occupied posts and total job vacancies. The figure is then multiplied by 100 and expressed as a percentage.
<b>Length of stay</b>	Years that movers have resided in the current country of residence.
<b>Macro-region</b>	Bundle of bordering regions or countries (depending on data availability) located along internal EU and EFTA borders.
<b>Meuse-Rhine region</b>	Macro-region that comprises bordering regions between Germany (Dusseldorf and Cologne), Belgium (provinces of Limburg, Antwerp, East Flanders and Prov.

<sup>14</sup> According to Regulation (EC) No 862/2007 'usual residence' means the place at which a person 'normally spends the daily period of rest (...) or, by default, the place of legal or registered residence'.

<sup>15</sup> Article 2(1)(c) of Regulation (EC) No 862/2007 defining 'immigration'. This Regulation is the basis for the collection of Eurostat migration data, which are mainly used in this report to calculate immigration rates.

<sup>16</sup> Inflow rates of EU movers are calculated as inflows of nationals over the total number of nationals residing in the country; total inflow rates are calculated as all inflows over the total population residing in the country.

<sup>17</sup> This list corresponds to different categories of inactive persons, as differentiated in the EU-LFS for the MAINSTAT variable, see: Eurostat (2021).

<sup>18</sup> International Labour Organization (ILO) (2022), *The International Standard Classification of Occupations-ISCO-08* [Online]. Available online: <https://isco-ilo.netlify.app/en/isco-08/> [Accessed 12 December 2022].

	Liège), and the Netherlands (provinces of Zealand and South Netherlands) (definition created for the purpose of this study).
<b>Mobile worker</b>	Active EU citizen who resides in a Member State or EFTA country other than their country of citizenship.
<b>Mobility</b>	EU or EFTA citizens moving their habitual residence to another Member State or EFTA country other than their country of citizenship and/or working in a different Member State or EFTA country to that where they reside (cross-border workers).
<b>Mover</b>	See entry for EU and EFTA movers.
<b>National</b>	Any person holding citizenship and living in the reported country of residence.
<b>Net intra-EU mobility</b>	Net intra-EU mobility is the difference between inflows and outflows of nationals, EU and EFTA movers from/into a certain EU Member State. It is calculated as the subtraction of outflows from inflows and can be negative (a Member State experiencing higher outflows than inflows) or positive (higher inflows than outflows).
<b>Nordic countries</b>	Denmark, Finland, Norway and Sweden (definition created for the purposes of this study).
<b>Outflows</b>	The total number of persons in the reference year who cease to have their usual residence <sup>19</sup> in a Member State for a period that is, or is expected to be, at least 12 months <sup>20</sup> .
<b>Outflow rate</b>	The percentage of outflows of a certain group of people over the population in the same reference group <sup>21</sup> residing in the country of origin <sup>22</sup> .
<b>Posted worker</b>	Posted workers for the purpose of this report includes persons covered under Articles 12 and 13 of Regulation (EC) No 883/2004 on the coordination of social security systems. It includes: the persons who are employed by an employer that normally carries out its activities in a Member State and who are posted by that employer to another Member State to perform work on its behalf (Art.12); the persons who normally pursue an activity as a self-employed person in a Member State who go to pursue a similar activity in another Member State (Art.12); and such persons who pursue an activity as an employed/self-employed person in two or more Member States (Art.13) <sup>23</sup> . While the last group are strictly speaking not considered as 'posted workers', in some cases the persons covered by Art.13 might also be posted under the conditions of the Posting of Workers Directive and their numbers are also estimated through PD A1 documents. Therefore, this group is included in the Commission's annual report on posting of workers and in the figure in Table 1 in this report; a separate figure only for the group of persons to which Art. 12 applies is provided in a footnote.
<b>Recent movers</b>	Movers who have resided in their country of residence for less than 2 years.

<sup>19</sup> According to Regulation (EC) No 862/2007 'usual residence' means the place at which a person 'normally spends the daily period of rest (...) or, by default, the place of legal or registered residence'.

<sup>20</sup> Article 2(1)(c) of Regulation (EC) No 862/2007 defining 'emigration'. This Regulation is the basis for the collection of Eurostat migration data, which are mainly used in this report to calculate emigration rates.

<sup>21</sup> Outflow rates of nationals are calculated as outflows of nationals over the total number of nationals residing in the country; total outflow rates are calculated as all outflows over the total population residing in the country.

<sup>22</sup> Regulation (EC) No 862/2007.

<sup>23</sup> For further information on the legislative background, see De Wispelaere, et al. (2021).

<b>Returnee</b>	A person carrying out return mobility (see below).
<b>Return mobility</b>	Return mobility is defined in this report as the movement of EU citizens to their country of citizenship for a long-term period (at least one year) after a long-term stay abroad (at least one year).
<b>Seasonal worker</b>	A person of EU and EFTA nationality working on a short fixed-term (seasonal) basis in an EU and EFTA country other than their country of residence, active in a sector marked by strong seasonal variation in labour demand (understood to chiefly refer to agriculture and accommodation and food services) <sup>24</sup> .
<b>Self-employed</b>	In this report, the number of self-employed nationals and EU movers is measured with data from the EU-LFS. Here, self-employed are defined as persons who work in their own business, professional practice or farm for the purpose of earning a profit and who employ other persons or not <sup>25</sup> .
<b>Sub-major occupation</b>	See entry for International Standard Classification of Occupations (ISCO).
<b>Stock</b>	Refers to the number of a certain group of persons (e.g. EU-27 movers) on a given date in a defined geographical area, as indicated by official statistics.
<b>Tri-border region</b>	Macro-region that comprises bordering regions between Germany (mainly Bavaria and Saxony), Poland (North- and Southwest and Silesian region) and Czechia (North- and Southwest regions) (definition created for the purpose of this study).
<b>Unemployed</b>	Any person who is not currently employed but who is available for work within two weeks and is actively seeking work (as per the ILO definition).
<b>Unemployment rate</b>	The share of unemployed from all active (unemployed plus employed) persons in a given reference population.
<b>Upper Rhine region</b>	Macro-region that comprises bordering regions between Switzerland (Northwestern: Kantons Basel-Stadt, Basel-Landschaft, Aargau, Jura and Solothurn), France (Alsace) and Germany (parts of Baden-Wuerttemberg and Rhineland-Palatinate) (definition created for the purpose of this study).
<b>Working age</b>	People aged between 20 and 64 years.

<sup>24</sup> This definition derived from Fries-Tersch, et al. (2021), 'Intra-EU Mobility of Seasonal Workers: Trends and Challenges', European Commission (DG EMPL), Brussels.

<sup>25</sup> Eurostat (2018).

## Executive summary

### Introduction

The annual report on intra-EU labour mobility provides updated information on labour mobility trends in EU and EFTA countries based on 2020/2021 data. The analysis considers the mobility of all working age EU citizens (20-64 years) in particular the mobility of the EU citizens in this age group who are active in the labour market (i.e. employed and unemployed).

Each annual report also covers special topics associated with intra-EU labour mobility. This edition focuses on the mobility of cross-border workers in the EU and EFTA on the one hand, and on mobility within specific occupations on the other. In addition to the two thematic chapters, Chapter 1 analyses the movement and characteristics of the mobile population in EU and EFTA while Chapter 2 develops on labour market indicators.

The two main data sources are Eurostat population and international migration statistics and the European Labour Force Survey (EU-LFS), collected until October 2022<sup>26</sup>. Where necessary, the coherence between these two sources as well as their comparability over time are discussed in the report. In practice the following rules were applied:

- **Flows of movers:** Inflows and outflows of movers to EU Member States are measured based on Eurostat population statistics<sup>27</sup>. In this report, the latest available data is for 2020 (i.e. those who moved in the course of 2020).
- **Stocks of movers:** Headline statistics on the number of movers residing in another EU Member State than that of their citizenship (the 'stock' of movers) are gathered from Eurostat population statistics<sup>28</sup>. In this report, the latest available data is for 2021 (i.e. for those movers registered on 1 January 2021).
- **Socio-demographic and labour market indicators:** Eurostat population data lacks the detail required to study some demographic aspects of the mover population (e.g. movers by nationality *and* country of destination), as well as specific issues in the labour market. To facilitate a more accurate analysis of these concepts, data from the EU-LFS is used<sup>29</sup>. The latest available data in this report is annual averages for 2021.
- **Thematic chapters on cross-border mobility and occupational mobility:** For the thematic chapters, publicly available data again provide less detail than is required for an accurate study. Hence, data in these chapters generally rely on EU-LFS extractions, unless otherwise indicated.

<sup>26</sup> For more details on these sources, the differences between them and issues of comparability, see Annex B.

<sup>27</sup> Eurostat (2022a), *Emigration by age group, sex and citizenship [Migr\_emi1ctz]* [Online]. Available online: [https://ec.europa.eu/eurostat/web/products-datasets/-/MIGR\\_EMI1CTZ](https://ec.europa.eu/eurostat/web/products-datasets/-/MIGR_EMI1CTZ); Eurostat (2022c), *Immigration by age group, sex and citizenship [Migr\_imm1ctz]* [Online]. Available online: [https://ec.europa.eu/eurostat/databrowser/view/migr\\_imm1ctz/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/migr_imm1ctz/default/table?lang=en).

<sup>28</sup> Eurostat (2022g), *Population on 1 January by age group, sex and citizenship [Migr\_pop1ctz]* [Online]. Available online: [https://ec.europa.eu/eurostat/databrowser/view/MIGR\\_POP1CTZ](https://ec.europa.eu/eurostat/databrowser/view/MIGR_POP1CTZ).

<sup>29</sup> However, due to differences in measurement and sampling, the total number of movers in the EU-LFS differs from the total found in Eurostat population statistics. In Table 1, which presents the key indicators of the report, these are duly presented separately.

## Main findings

### 1 The mobile working age population in 2016-2021

**Overall trend.** Overall, there was a significant decline of actual labour mobility during 2020, in large part due to the restrictions put in place because of the COVID-19 pandemic. However, stocks of movers remained stable, as both outward and return mobility declined.

**Flows of working age movers.** In 2020, inflows of working age movers at the EU and EFTA level declined by 21% and outflows decreased by 14%. Thus, the flows consisted in 2020 of 804 000 EU movers and 611 000 persons returning to their country of citizenship. Inflows by EU and EFTA movers made up 31% of the total inflows at the EU and EFTA level. Total inflows were mostly driven by third-country nationals, making up nearly half of the total inflows (46%), whereas returning nationals made up 23%. Outflows by EU movers made up 29% of the total outflows at the EU and EFTA level, as well as TCNs. Total outflows were mostly driven by nationals, with a share of 42%.

57% of incoming EU movers at the EU and EFTA level were male, like in 2020. This proportion was particularly high in Eastern European countries, such as Poland, Latvia, and Bulgaria. Only three Member States (Italy, Greece, and Ireland) reported more working age women than men moving into the country. Incoming EU and EFTA movers are relatively younger than the population at large, indicating that individuals that are earlier in their career are more likely to move to another EU or EFTA country. The Nordic countries and the Netherlands recorded the highest shares of the youngest age group (20-34), whereas Croatia and Bulgaria mostly saw older movers settling in.

**Stocks of working age movers.** Between 2020 and 2021, the stock of foreign EU citizens remained relatively stable with around 10.2 million working age EU citizens residing in an EU country different than their country of citizenship<sup>30</sup>. The composition of EU movers by citizenship has remained broadly the same since 2016, with Romanians remaining the largest individual group (27%) followed by Polish (12%) and Italian (10%)<sup>31</sup>.

More than 30% of the working age EU movers (3.4 million) resided in Germany, remaining the main destination country for EU citizens in 2021. Luxembourg had the highest share of EU movers as a proportion of their total population at 42%, followed by Cyprus with 14%. The overall male to female ratio among EU movers in 2021 remained comparable to previous years, with 51% of movers being male and 49% being female. In 2021, 42% of the working age EU movers were between 35-49 years old.

**Specific categories of working age movers.** In 2021, there were ca. 1.7 million cross-border workers in the EU and EFTA, similar to 2020. The most important countries of origin were France (424 000) and Poland (190 000), whereas the main destination countries were Germany (378 000) and Switzerland (345 000).

<sup>30</sup> This estimate is based on Eurostat population statistics. According to EU-LFS data, which is differently sampled, there are just over 8 million EU movers. For a more extensive discussion of these data sources, see Annex B.

<sup>31</sup> Note that these estimates are based on EU-LFS data, as the required detailed is not available in Eurostat population statistics.

In 2021, the total number of postings in the EU and EFTA amounted to 3.6 million (-4.4% compared to 2020), distributed among an estimated 2.6 million individual persons (+3.2% compared to 2020).

An estimated 589 000 movers returned to their countries of origin in 2020. The largest returning destination is Germany at 108 000.

## 2 The labour market performance of mobile workers

**Overall trend.** After a decrease in the activity and employment rates of EU movers and third-country nationals in 2020 due to the COVID-19 pandemic, rates were once again increasing towards pre-pandemic level in 2021. Unemployment rates started decreasing, but remained above pre-pandemic levels. Third-country nationals overall had lower employment and activity rates. This is true for the whole 2016-2021 period.

The proportion of self-employed EU movers and third-country nationals decreased significantly in 2020 during the COVID-19 pandemic, but has returned to pre-pandemic levels in 2021. The proportion of self-employed nationals remained relatively steady (if decreasing in the longer term) over the period impacted by the pandemic.

**Labour market situation.** At EU level, 81% of EU movers (6.5 million individuals) were active on the labour market in 2021, compared to 79% of nationals and 70% of third-country nationals. EU movers and nationals both had an employment rate of 74% in 2021. This compares to 59% for third-country nationals. In 2021, EU movers had an unemployment rate of 9%. This was higher than nationals (6%) but lower than third-country nationals (16%). Compared to 2016, the unemployment rate has decreased in all three nationality groups.

The highest employment rates of EU movers in EU Member States were found in the Netherlands (80%) and Germany (78%), while the lowest were found in Greece (56%) and Italy (64%) in 2021. There were 446 000 self-employed EU movers during that year, most of whom were found in construction (28% of all self-employed movers), wholesale and retail trade (13%), and professional occupations (13%).

In 2021, 16% of EU movers and 12% of nationals had fixed-term employment contracts. Third-country nationals had fixed-term contracts at a significantly higher rate, at 27%. A similar pattern, although with smaller differences between groups, was identified for the proportion of part-time work.

**Some determinants to labour market integration.** At the EU level, female movers had an employment rate of 67% (vs. 82% for male movers), which varied significantly across the Member States. Female nationals in 2021 had an employment rate of 69% compared to 79% for men, and female third-country nationals had the lowest rate of employment by a significant margin at 47% (vs. 71% for male third-country nationals). The proportion of workers with fixed-term contracts were similar between male and female movers, both of which were slightly higher than that of nationals. The difference was much larger for part-time work: which stood at 28% for female nationals (against 7% for male nationals) and 37% for female EU movers (vs. 8% for male EU movers). For EU movers, nationals and third-country nationals alike, 35-49-year-olds had the highest employment rate at the EU level. Those aged 20-34 years old had the highest unemployment rate.

In 2021, 32% of EU movers had a high level of education, up from 28% in 2016. Similar patterns were identified among nationals. The proportion of third-country nationals with high educational attainment also increased, but stood at 24% in 2021. 28% of EU movers

had low educational attainment, compared to 18% of nationals and 46% of third-country nationals.

The most common occupations among movers on an EU level were elementary occupations (18%), professionals (18%) and service and sales workers (16%). Both movers and third-country nationals were overrepresented relative to nationals in elementary occupations and craft and related trades. The largest sector of work for movers was manufacturing (17%). Relative to nationals, EU movers were most overrepresented in construction and accommodation and food services.

### 3 Cross-border workers in the EU and EFTA

**Overall trends.** There were ca. 1.7 million cross-border workers active in the EU and EFTA in 2021. The main countries of destination, Germany (378 000 incoming workers), Switzerland (345 000) and Luxembourg (212 000) attracted almost 60% of all cross-border workers.

**Characteristics of cross-border workers.** Ca. 1.1 million cross-border workers were men (70% of the total). This is not surprising considering that 46% of cross-border workers were employed in manufacturing and construction, which are typically male-dominated. Service sectors which account for substantial parts of cross-border work are transportation and storage, wholesale and retail trade and human health and social work (together 30% of cross-border workers).

Cross-border workers were most often (42%) between 35 and 49 years old. However, this population is ageing; the proportion of those above 50 years increased from 23% in 2016 to 27% in 2021 (ca. + 60 000), while the proportion of those below 35 years decreased from 34% to 31% (ca. – 52 000).

Compared to employed EU movers and nationals, cross-border workers were more likely to hold a medium level of education (54% vs 39% of EU movers and 49% of nationals). However, the level of skills among cross-border workers has been increasing; those with high education rose from 28% to 34% between 2016 and 2021 (ca. + 93 000). This is also reflected in occupational patterns; the share of professional occupations rose from 14% to 18% (ca. + 51 000). Craft and related trades remained the most important occupation among cross-border workers (ca. 381 000 or 24%).

**Comparing cross-border work in macro-regions.** The Alpine region (incl. bordering regions between France, Switzerland, and Italy), the Upper Rhine region (Switzerland, Germany and France) and the Greater Region (France, Belgium, Luxembourg and Germany) hosted almost 50% of the total flows of cross-border workers. Other significant areas for cross-border work were Meuse-Rhine region (Netherlands, Belgium, and Germany), Tri-border region (Germany, Poland, and Czechia) and Centrope region (Austria, Hungary, Slovakia, and Czechia).

The majority of the flows were uni-directional towards the regions enjoying higher levels of economic development in Austria, Luxembourg, Germany and Switzerland. Hints of bi-directional flows were found in the Meuse-Rhine macro-region.

Manufacturing and construction were particularly important among cross-border workers going to Austria and Germany, which generally had low to medium education levels. Workers to Luxembourg, Belgium and Switzerland were mostly employed in service-related activities, including those requiring high skills, such as professional scientific and technical activities and financial and insurance services.

While several factors influence the extent and nature of cross-border work (e.g. socio-cultural and economic aspects), one key facilitator of cross-border movements of workers is the institutional cooperation among border regions. This is particularly strong in certain macro-regions (e.g. Upper-Rhine and Greater Region)

## 4 Occupational mobility among movers

**Overall trends.** There are clear signs of a general shift towards professional occupations among EU movers from 2016 to 2021. This has been accompanied by a process of skill-based polarisation over the same period, represented by a decreasing share of medium skilled mobile workers. The largest share of EU movers are found in occupations requiring low-to-medium skills, such as cleaners and helpers (10% of all movers; 559 000), labourers in mining, construction, manufacturing and transport (8%; 334 000), and building and related trades workers (7%; 445 000).

A limited number of occupations in Germany, Spain, France, Italy and the Netherlands appear to be experiencing labour shortages, including science and engineering professionals, labourers in mining, construction, manufacturing and transport, and business and administration professionals. However, the number of EU movers in these occupations relative to nationals does not suggest that intra-EU labour mobility can significantly address these potential labour shortages in the short-term.

**Analysis at ISCO-2D level.** The limitations of data collected at the ISCO-2D level, including its broad measurement of skills and tasks performed, and its tendency to mask notable differences between and within occupations, hinder the ability to identify whether specific jobs, such as nurses or pharmacists, are experiencing labour shortages.

**Identifying potential labour market pressures.** From 2016 to 2021, professionals saw the strongest employment growth (4% vs. average of -0.7%) and job vacancy rate (as proxied by information on online job advertisements) in 2021 (5% vs. average of 3.8%), with the highest employment growth and job vacancy rates found among information and communications technology professionals (8.2% and 13.1%, respectively). In contrast, elementary occupations saw the lowest employment growth (-2.3%) and job vacancy rates (3.7%). Italy and Bulgaria had relatively weak employment growth (-0.3 and -0.6%) across most occupations, while Spain, Poland, Romania and Bulgaria had the lowest job vacancy rates, rarely exceeding 4%.

**Occupational trends among EU movers.** In 2021, the most popular occupations among EU movers decreased at the EU level across all population groups, such as cleaners and helpers (9% of all EU movers), building and related trades workers (7%), personal service workers (6%), sales workers (6%), and labourers in mining, construction, manufacturing and transport (5%). However, the size of the mobile labour force relative to total employment is relatively minor.

The 2016-2021 period also saw a significant decrease in the share of mobile workers with a medium level of education and an increase in the share of those with high or low levels of education. Additionally, EU movers were more likely to be overqualified for low skill jobs compared to the local population.

**Linking labour shortages with occupational mobility.** Based on limited data availability, it appears that only a few prevalent occupations among EU movers indicate signs of a potential labour shortage, with science and engineering professionals being the most-in-demand among the five Member States studied in further detail (Germany, France, Spain, Italy, and the Netherlands).

In Italy, France, and the Netherlands, signs of labour shortages are primarily indicated by occupations requiring low-to-medium skills, such as numerical and material recording clerks, labourers in mining, construction, manufacturing, and transport, as well as metal, machinery and related trades workers. In contrast, many high-skilled occupations in Germany and Spain, such as business and administration professionals and science and engineering associate professionals, indicate signs of labour market pressures.

The overall small share of EU movers relative to nationals suggests that intra-EU labour mobility is currently unable to significantly mitigate potential labour shortages at the occupational level in the short-term.

## Introduction

This edition analyses the developments of a particularly interesting period in terms of labour mobility. While last year's report was marked by the impact of the COVID-19 pandemic (and was discussed in a separate thematic chapter), data from 2021 now allows for a closer analysis of some aspects of post-pandemic labour mobility, and whether pre-pandemic trends and levels have been reached again.

Definitions of specific concepts and terms are provided in the preamble to this report. However, a few customary terms are worth reiterating, and are applied throughout this report, as follows:

- **EU:** Unless otherwise specified, any mention of 'the EU' refers to the current composition of the European Union in 27 Member States, in place at the time of writing. This also applies to mentions of 'EU movers'. If a data point refers to the EU-28, i.e. including the UK, this is mentioned explicitly.
- **EU movers, EU and EFTA movers:** EU movers refers to individuals of EU nationality that reside in another EU or EFTA country. 'EU and EFTA movers' include those of both EU and EFTA nationality, usually for reasons of data availability.
- **Age of reference population:** Unless explicitly stated otherwise, the reference population in all sections is working age individuals aged between 20 and 64. This definition is aligned with the social scoreboard, which sets the employment rate of 20-64-year-olds as a headline indicator.

## Aim of the report

This report presents general information on intra-EU mobility, together with information on e.g. occupational structure, age structure and employment rates of active movers based on harmonised and comparable statistics. Thus it delivers on Article 29 of Regulation (EU) 2016/589<sup>32</sup>, namely to monitor and make public labour mobility flows and patterns in the Union. Next to the general overview of developments in the past year, it dedicates specific attention to topical issues.

Specific topics addressed in previous Annual Reports include:

- The impact of the COVID-19 pandemic on mobility; return mobility (2021).
- Mobility of high-skilled workers; impact of demographic change (2020).
- Mobility spells – analysis of length of stays abroad of EU movers (2019).
- Qualifications of EU-28 movers; household composition of EU-28 movers (2018).
- The gender dimension of mobility; language and other obstacles and drivers of mobility; mobility of health professionals (2017).
- Mobility of pensioners; return mobility (2016).
- Cross-border workers (2015).
- Mobility of young and highly educated people (2014).

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<sup>32</sup> Regulation (EU) 2016/589 on a European network of employment services (EURES), workers' access to mobility services and the further integration of labour markets.

## Structure of the report

This year's report has been reworked to improve readability and to streamline the presentation of findings. The structure is therefore different compared to previous years, although the key indicators remain the same.

Some of the noticeable changes compared to the previous are:

- A clearer distinction between general patterns related to the mobile working age population in terms of flows and stocks on the one hand, and, on the other hand, the labour situation and performance of mobile workers;
- A more in-depth analysis of the labour situation and performance of mobile workers, with the introduction of new indicators; and
- A comprehensive comparison of the various characteristics and situation of EU movers to those of nationals and migrants.

The report is structured as follows. Chapter 1 focuses on the annual flows of EU movers in the EU and EFTA countries and the total amount of movers that are resident in EU and EFTA countries in 2020. Comparison is made between countries in 2020 (or the most recently available year), and on an EU aggregate level since 2014. The focus is on the 27 Member States of the EU in 2021 – however, data limitations mean that for some indicators, comparison over time is made for the EU-28 in 2014-2019, and for the EU-27 thereafter. This is clearly indicated in the notes to each figure and table.

Chapter 2 focuses on the labour market performance of mobile workers. The first section of the chapter compares activity, employment and unemployment rates, levels of self-employment among movers and third-country nationals compared to nationals, and the incidence of temporary work contracts and part-time work<sup>33</sup>.

Chapter 3 analyses cross-border and frontier work by outlining levels and trends of cross-border workers (and their demographic and socio-economic characteristics) in 2021 and over time since 2016. One section is dedicated to the specific context of the largest regions of cross-border work in the EU and EFTA and a comparison of the profiles of frontier workers active there. The chapter closes with considerations on the challenges and opportunities created by teleworking.

Finally, Chapter 4 investigates occupational mobility among EU movers from 2016 to 2021. The first section examines labour demand at the occupation level, both across the EU and in selected Member States. The following section details the mobile labour supply across occupations, concentrating on the prevalence of EU movers compared to nationals. The chapter closes by identifying signs of occupational imbalances in the form of labour shortages at the national level and assessing the extent in which EU movers can mitigate them.

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<sup>33</sup> Note that these two indicators are included for the first time and have not previously been regularly analysed in the annual mobility reports.

## Legal background: EU applicable rules and recent developments

The principle of free movement of workers is enshrined in Article 45 of the Treaty on the Functioning of the European Union (TFEU). Until 1993, the Treaty rules on free movement of persons applied only to economically active persons (i.e. employed persons and jobseekers)<sup>34</sup>. In 1993, the Maastricht Treaty gave new life to the EU rules on free movement of persons, enshrining the Article 20 right of EU citizenship, while Article 21 gave all EU citizens and their family members the right (in principle) to move and reside freely within the EU. These provisions must be viewed in the context of the general principle of non-discrimination based on nationality enshrined in Article 18 of the TFEU and in Article 21(2) of the Charter of Fundamental Rights of the European Union.

Secondary legislation set out more detailed rules to regulate free movement, through Directive (EC) No 2004/38 on the right of citizens of the Union and their family members to move and reside freely within the territory of the Member States<sup>35</sup>. The Directive codified previous legislation that dealt separately with distinct categories of EU citizens. The specific rights concerning free movement of workers and their family members are provided in Regulation (EU) No 492/2011 (replacing Regulation (EC) No 1612/68). Accordingly, all Union citizens and their family members have the right to move and reside freely within the territory of the Member States<sup>36</sup>. Inactive EU citizens have the right to reside in another Member State for more than three months if they have sufficient resources and comprehensive sickness insurance cover<sup>37</sup>. Directive (EU) No 2014/54 on measures facilitating the exercise of rights conferred on workers in the context of freedom of movement for workers aims to ensure more effective and uniform application of the right to free movement and provides specific rules for effective enforcement.

The free movement of persons also applies to countries that are part of EFTA<sup>38</sup>, as a result of the Agreement creating the European Economic Area (EEA) and the Agreement on the Free Movement of Persons (AFMP) with the Swiss Federation<sup>39</sup>.

For the years 2020 and 2021, the following recent developments may also be noted:

- Following **the withdrawal of the UK from the EU (or 'Brexit')** in January 2020, and the end of the transition period in January 2021, the rules on the freedom of movement ceased to apply for both UK and EU citizens. EU citizens no longer received preferential treatment, which has led to significant labour shortages in various sectors in both the EU and the UK (e.g. road freight transport).

<sup>34</sup> Regulation (EU) No 492/2011 on freedom of movement for workers within the Union.

<sup>35</sup> Directive 2004/38/EC on the right of citizens of the Union and their family members to move and reside freely within the territory of the Member States.

<sup>36</sup> Ibid.

<sup>37</sup> Juravle, et al. (2013), 'A fact finding analysis on the impact on the Member States' social security systems of the entitlements of non-active intra-EU migrants to special non-contributory cash benefits and healthcare granted on the basis of residence', European Commission (DG EMPL), Brussels.

<sup>38</sup> EFTA countries included in this report are Iceland, Norway, and Switzerland. Liechtenstein was excluded as no data are available from the EU-LFS.

<sup>39</sup> Decision (EC) 2002/309 as regards the Agreement on Scientific and Technological Cooperation, of 4 April 2002 on the conclusion of seven Agreements with the Swiss Confederation; Decision (EC) 94/1 on the conclusion of the Agreement on the European Economic Area between the European Communities, their Member States and the Republic of Austria, the Republic of Finland, the Republic of Iceland, the Principality of Liechtenstein, the Kingdom of Norway, the Kingdom of Sweden and the Swiss Confederation.

- Despite many attempts from the EU and Switzerland to negotiate a ‘framework agreement’ to develop **EU-Swiss bilateral relations** and political integration, the Swiss government decided to definitively terminate negotiations in May 2021 due to several concerns (including migration). This has led to strained relations between the parties, but new efforts to rebuild ties have been taken in the past year from the Swiss side with a proposal of various sectoral agreements instead of an all-encompassing deal.
- In response to the **COVID-19 pandemic**, the EU Member States started applying a coordinated approach to restrict free movement in 2020. As of November 2022, all EU and EFTA Member States have lifted their COVID-19 travel restrictions for both intra-EU and third-country travellers.
- Since the start of **Russia’s aggression against Ukraine** in February 2022, the European Commission has put in place various measures to facilitate the access of people fleeing the war in Ukraine to the EU labour market. For instance, on 3 March 2022, the EU activated the Temporary Protection Directive giving people fleeing the war the legal right to stay in an EU Member State for an initial period of 1 year, which can be extended up to 3 years. On 10 October 2022 the ‘EU Talent Pool Pilot’ was launched within the framework of EURES. The aim is for beneficiaries of temporary protection or adequate protection under national law to be able to find employment more easily: they can use the EU Talent Pool Pilot to create their CVs, present their skills and professional experience.

## Overview of key indicators

Different forms of **labour mobility** are identified and analysed in this report.

**Long-term labour mobility**, where persons move their residence to a country of which they are not a citizen, *for at least one year*<sup>40</sup>, to seek or take up work; this concept of long-term mobility must be distinguished from the legal term ‘permanent residence’, meaning the right to permanently reside in a country after a residence of at least five years<sup>41</sup>. Developments in the long-term mobility of all movers, those of working age, and active movers (or workers) are presented in Table 1, under points 1 and 2, which compares data from two sources – Eurostat population statistics and the EU Labour Force Survey (EU-LFS). However, these two sources are not fully comparable<sup>42</sup>.

**Cross-border mobility**, where someone resides in one country but is employed or self-employed in another and moves across borders regularly for this purpose; this concept itself houses different definitions (see box ‘definitions’ at the beginning of this report) and the key figures are presented in Table 1, point 3.

<sup>40</sup> The main EU-wide data sources – the EU-LFS and Eurostat population/migration statistics – count people who live, or intend to live, in a certain country for at least one year.

<sup>41</sup> Directive 2004/38/EC.

<sup>42</sup> The three main reasons are: (1) EU-LFS statistics generally only cover the population in private households, while population statistics cover the whole population, including those living in collective households (e.g. conscripts in the armed forces); (2) The rules for defining the usual resident population in the EU-LFS at times differ from the rules in population statistics; and (3) Population statistics usually refer to particular dates (January 1 in the case of Eurostat), while EU-LFS statistics generally refer to the average quarterly or annual figures. This is expanded upon in Eurostat (2022h), ‘Quality report of the European Union Labour Force Survey 2020’, Publications Office of the European Union, Luxembourg, pp. 31-32. – For more details see Annex B.

**Posting of workers**, where a person employed by an employer that normally carries out its activities in one Member State is sent i.e. 'posted' by that employer to another Member State to perform work on its behalf for a limited period. It also includes posted self-employed persons – those who normally pursue an activity as self-employed in a certain Member State and who go to pursue a similar activity in another Member State. The data reported in Table 1 below also include persons who pursue an activity as an employed/self-employed person in two or more Member States<sup>43</sup>.

To prove that they are already affiliated to a social security scheme of a Member State (the one they are posted from), these persons have to ask their national social security institution for a certificate (portable document A1, PD A1) which they can show to concerned bodies in the destination country. Based on these PD A1 forms a statistic of posted workers is established. Data on portable documents issued to posted workers is analysed in a separate report<sup>44</sup> and key figures are shown in Table 1, point 4.

**Return mobility**, where long-term movers return to their country of origin. As there is not exact data available on this phenomenon, it is estimated based on the number of nationals moving to their country of nationality (i.e. the number of nationals among inflows).

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<sup>43</sup> See table of definitions for explanation and for further information on the legislative background, see most recently De Wispelaere, et al. (2021).

<sup>44</sup> Ibid.

**Table 1: Main indicators of intra-EU labour mobility in 2021**

Type of mobility	1 January 2021	1 January 2020	Change 2020/2021
<b>1. Long-term EU and EFTA movers in the EU according to Eurostat population statistics<sup>45</sup></b>			
• <b>All ages</b> *	13.9 million	13.6 million	(+2.5%)
• <b>Working age</b> (20-64 years) *	10.2 million	10.2 million	(+0.02%)
<i>Working age movers as a share of the total working age population<sup>46</sup></i>	3.9%	3.8%	(+0.1 pps)
	<b>Annual average 2021</b>	<b>Annual average 2020</b>	<b>Change 2020/2021</b>
<b>2. Long-term EU and EFTA movers in the EU according to the EU-LFS</b>			
• <b>Working age</b> (20-64 years) **	8.0 million	8.0 million	(±0.0%)
• ... of which <b>active movers</b> (employed or looking for work) **	6.5 million	6.4 million	(+2.6%)
<i>Active movers as a share of the total labour force<sup>47</sup></i>	3.1%	3.1%	(+0.0 pps)
<b>3. Cross-border workers<sup>48</sup></b> (20-64 years)	1.7 million	1.7 million	(-1.5%)
<i>As a share of the total number of employed EU citizens in the EU<sup>49</sup></i>	0.9%	0.9%	(-0.0 pps)

<sup>45</sup> EU-28 data used for France, Greece, Hungary, Malta and Poland in 2020 for reasons of data availability.

<sup>46</sup> According to Eurostat population statistics, the total working age population in the EU in 2021 was 263.7 million, and in 2020 264.6 million.

<sup>47</sup> According to EU-LFS statistics, the total active population in the EU in 2021 was 211 million, and in 2020 209.8 million.

<sup>48</sup> This refers to cross-border workers living in an EU country and working in an EU or EFTA country.

<sup>49</sup> The number of total employed EU citizens in the EU in 2021 was 181.5 million and in 2020 180.9 million. This number includes employed EU nationals working in their country of citizenship, employed EU movers in another EU or EFTA country and cross-border workers living in an EU country and working in an EU or EFTA country. The number of cross-border workers used for this calculation only includes cross-border workers who are nationals of their country of residence; cross-border workers who are not nationals of their country of residence would also be EU movers.

	2021	2020	Change 2020/2021
<b>4. Number of postings<sup>50</sup></b> (of employed and self-employed), all ages (no. of PDs A1) ***	3.6 million <sup>51</sup>	3.7 million	(-4.4%)
... equals approximate number of persons (estimated number) <sup>52</sup>	2.6 million	2.5 million	(+3.2%)
	2020	2019	Change 2019/2020
<b>5. Annual return mobility</b> (20-64 years) ****	589 000	721 000	(-18%)
... as a ratio to EU nationals leaving their country of origin in 2020 *****	75%	71%	(+4 pps)

\* *Source:* Eurostat population statistics [Migr\_pop1ctz]<sup>53</sup>.

\*\* *Source:* EU-LFS 2021, custom extraction by Milieu.

\*\*\* *Source:* HIVA-KU Leuven, administrative data PD A1 questionnaire. Unlike previous reports, these figures exclude the UK.

\*\*\*\* *Source:* Eurostat international migration statistics [Migr\_imm1ctz]. Approximation by using numbers of nationals moving to their country of citizenship.

\*\*\*\*\* *Source:* Eurostat, international migration statistics [Migr\_imm1ctz, migr\_emi1ctz]<sup>54</sup>. Share of EU nationals moving to their country of citizenship (returnees) from EU nationals leaving their country of citizenship (outflows), age group 20-64. Figures are calculated based on aggregates excluding Cyprus, Portugal, Greece and France for both return mobility and outflows, as figures are not available for outflows of nationals.

<sup>50</sup> The number indicates the total number of PDs A1 issued by EU Member States and EFTA countries referring to Articles 12 and 13 of Regulation 883/2004. PDs A1 are issued for persons insured in a Member State other than the Member State of (temporary) employment. The number of PDs A1 is not necessarily equal to the number of posted workers. Note that differences exist in the definition of 'posting' between Regulation (EC) No 883/2004 and Regulation 96/71/EC (Posting of Workers Directive).

<sup>51</sup> Of these, 2.2 million were covered under Art. 12 (approximately 1.4 million persons), 1.3 million under Art. 13 (approximately 1.2 million persons), 0.1 million for others (e.g. Art. 16).

<sup>52</sup> Based on figures provided by 19 Member States. These statistics are discussed more extensively in De Wispelaere, et al. (2022, forthcoming), 'Posting of workers – Report on A1 Portable Documents issued in 2021', HIVA - KU Leuven, Leuven.

<sup>53</sup> Eurostat (2022c).

<sup>54</sup> Ibid.; Eurostat (2022a).

# 1 The mobile working age population in 2016-2021

## 1.1 Introduction

This chapter provides an overview of the recent developments on working age movers within the EU and EFTA. The first section focuses on the trends in flows of working age movers, both at the EU and EFTA level and at the country level. It also identifies the main corridors between EU and EFTA countries and breaks down the composition in gender and age. The second section examines the trends in stocks of working age movers in more detail and goes more into depth at the movers' characteristics by country of residence. The last section of this chapter focuses on specific categories of working age movers, including cross-border workers, posted workers and returnees.

### Key findings

#### **Overall trend**

- There was a significant decline of labour mobility during 2020, in large part due to the restrictions put in place as a result of the COVID-19 pandemic. However, stocks of movers remained stable, as both outward and return mobility declined.

#### **Developments in the flows of working age movers**

- In 2020, based on population statistics from Eurostat, inflows of working age movers at the EU and EFTA level declined by 21% and outflows decreased by 14%.
- Inflows by EU and EFTA movers made up 31% of the total inflows at the EU and EFTA level. They were mostly driven by TCNs, making up nearly half of the total inflows (46%), whereas nationals made up 23%.
- Outflows by EU movers made up 29% of the total outflows at the EU and EFTA level, similar to TCNs (29%). They were mostly driven by nationals, with a share of 42%.
- 57% of incoming EU movers at the EU and EFTA level were male, similar to the previous year. This proportion was particularly high in Eastern European countries, such as Poland, Latvia and Bulgaria. Only three Member States (Italy, Greece and Ireland) reported more working age EU and EFTA women than men moving into the country.
- Incoming EU and EFTA movers are relatively younger than the population at large, indicating that individuals that are earlier in their career are more likely to move to another EU or EFTA country. The Nordic countries and the Netherlands recorded the highest shares of the youngest age group (20-34), whereas Croatia and Bulgaria mostly saw older movers settling in.

**Stocks of working age movers**

- The stock of foreign EU citizens remained relatively stable between 2020 and 2021 with around 10.2 million working age EU citizens residing in an EU country different than their country of citizenship.
- The composition of EU movers by citizenship has remained broadly the same since 2016, with Romanians remaining the largest individual group. In 2021, just over 2 million were Romanian (27%), 920 000 Polish (12%) and 811 000 Italian (10%).
- More than 40% of the working age EU movers (3.4 million) resided in Germany, remaining the most important destination country for EU citizens in 2021.
- Luxembourg had the highest share of EU movers as a proportion of their total population at 42%, followed by Cyprus with 14%<sup>55</sup>.
- The overall male to female ratio among the EU movers in 2021 remained comparable to previous years, with 51% of the movers being male and 49% being female.
- In 2021, 42% of the working age EU movers were between 35-49 years old.

**Specific categories of working age movers**

- In 2021, there were ca. 1.7 million cross-border workers reported in the EU and EFTA, similar to the level in 2020. The most important countries of origin remained France (424 000) and Poland (190 000), whereas the main destination countries were Germany (378 000) and Switzerland (345 000).
- In 2021, the total number of postings in the EU and EFTA amounted to 3.6 million (-4.4% compared to 2020), distributed among an estimated 2.6 million individual persons (+3.2% compared to 2020). However, national data from several Member States indicate a rise again in the number of postings in the second semester of 2020 and 2021.
- An estimated 589 000 movers returned to their countries of origin in 2020. The largest returning destination is Germany at 108 000.

## 1.2 Labour mobility in 2016-2020

This section presents the inflows, outflows, and net mobility of working age movers at the EU and EFTA level<sup>56</sup>. Inflows refer to the movement of EU and EFTA movers, third-country nationals, and nationals into an EU or EFTA country, whereas outflows entail the movement of these groups out of the country. Net mobility shows the difference between

<sup>55</sup> Percentage calculated as a share of foreign EU citizens in the total population.

<sup>56</sup> Annex C.1 contains tables of the inflows, outflows and net flows of nationals (Table), EU movers (Table) and third-country nationals (Table) by Member State.

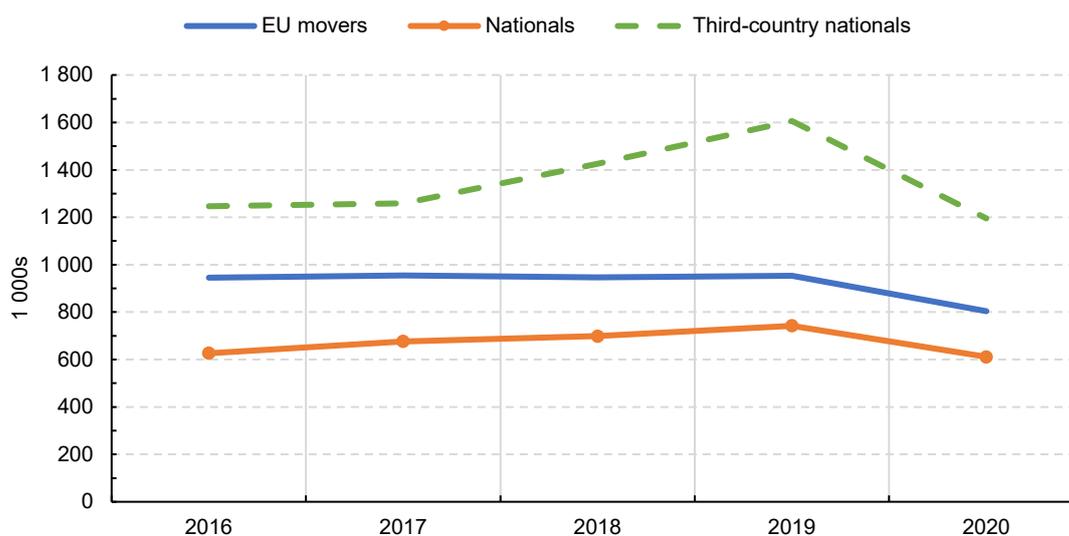
inflows and outflows. The section first presents trends in the EU and EFTA, and thereafter the levels in each country<sup>57</sup>.

## 1.2.1 Trends in labour mobility flows

### Inflows to the EU and EFTA in 2016-2020

From 2019 to 2020, the inflow of working age movers at the EU and EFTA level fell by 21%, from 3.3 million to 2.6 million. Figure 1 shows the development in the 2016-2020 period for three main nationality groups: EU movers, nationals of the reporting country, and third-country nationals. In 2020, inflows consisted of 804 000 EU movers, 611 000 nationals (i.e. returnees to their country of citizenship, discussed further in Section 1.4.3) and 1.2 million third-country nationals<sup>58</sup>. The inflow of all three nationality groups decreased in 2020, most significantly for third-country nationals. This is likely an effect of the restrictions on travel and movement imposed by the COVID-19 pandemic, and in the longer term, the year 2020 is likely to be an outlier in terms of flows<sup>59</sup>.

**Figure 1: Inflows of movers in the EU and EFTA, 2016-2020**



Note: For 2016-2019, 'EU movers' and 'Third-country nationals' refer to citizens from (non-)EU-28 countries. From 2020 onwards, the reference group is (non-)EU-27 countries. EFTA movers have been omitted due to small size.

Source: Eurostat international migration statistics (Migr\_imm1ctz), Milieu calculations.

### Outflows in the EU and EFTA in 2016-2020

In 2020, 1.6 million individuals moved from their previous EU and EFTA country of residence. This group consisted of 469 000 EU movers, 686 000 nationals, and 467 000

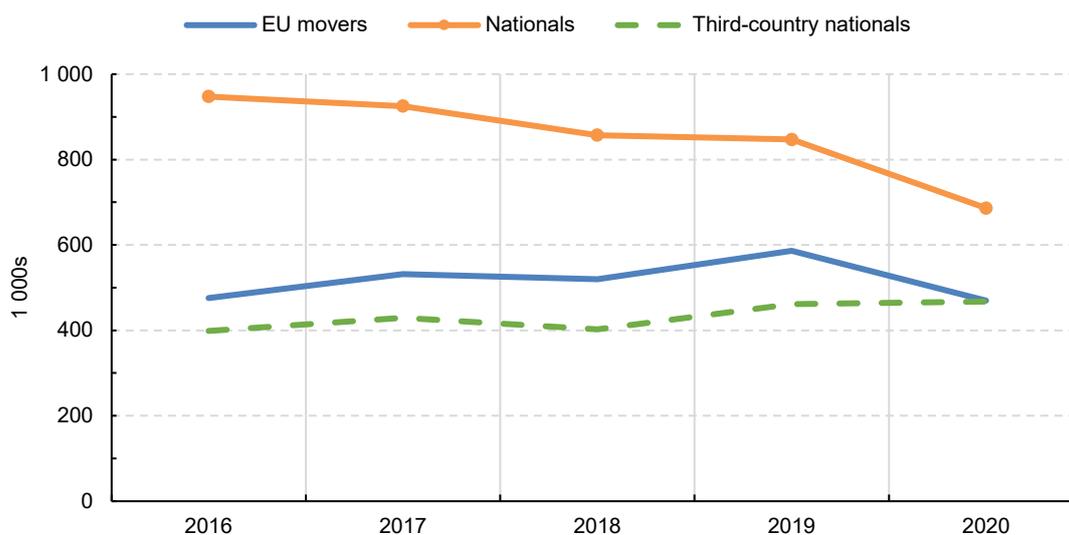
<sup>57</sup> The absolute inflows, outflows and net flows to all EU countries in 2016-2021 are shown in Table (nationals), Table (EU movers) and Table (third-country nationals) in Annex C.1.

<sup>58</sup> Throughout the time period, there have also been inflows of 15 000-16 000 EFTA movers.

<sup>59</sup> The effect of the Covid-19 pandemic on labour mobility was discussed in a thematic chapter of the 2021 labour mobility report; cf. Fries-Tersch, et al. (2022), '2021 Annual Report on Intra-EU Labour Mobility', European Commission (DG EMPL), Brussels, Ch. 3.

third-country nationals. As shown in Figure 2, this generally decreased because of the pandemic, similarly to inflows: the number of EU movers and nationals leaving their country of residence fell significantly by ca. 20% each compared to 2019 (although for nationals, this reinforces a longer-term trend of declining outflows)<sup>60</sup>. The outflow of third-country nationals remained relatively steady, however. It should be added that no information is available on the destination of outflows: hence, some of those identified in this data may have left the EU altogether.

**Figure 2: Outflows of movers in the EU and EFTA, 2016-2020**



Note: Data not available for Cyprus, France, Greece, and Portugal. For 2016-2019, 'EU movers' and 'Third-country nationals' refer to citizens from (non-)EU-28 countries. From 2020 onwards, the reference group is (non-)EU-27 countries. Estimated values in 2020 for 'EU movers' and 'TCNs' in Estonia and Malta, and 'Nationals' in Estonia.

Source: Eurostat international migration statistics (Migr\_emi1ctz), Milieu calculations.

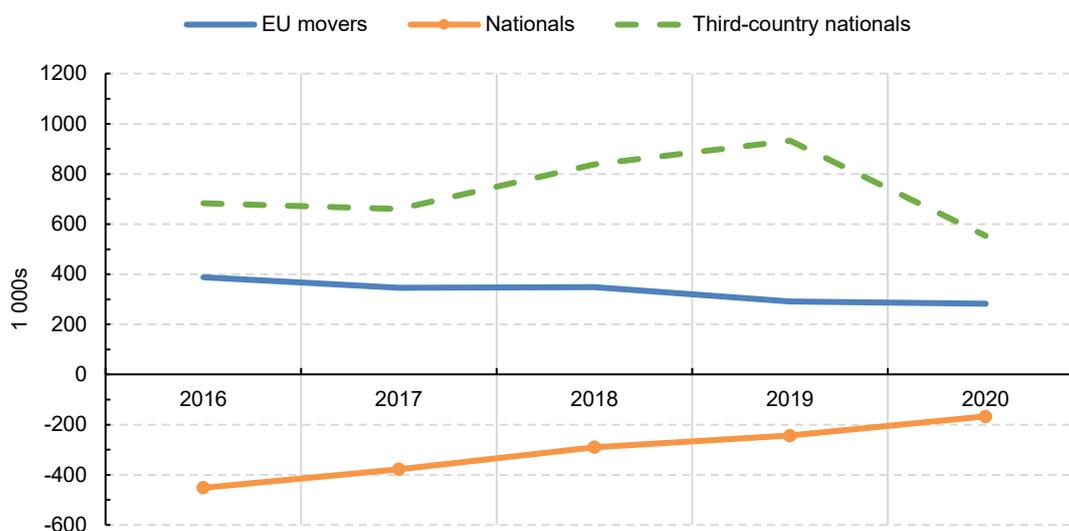
## Net mobility in the EU and EFTA in 2016-2020

As shown in Figure 3, the net mobility of EU movers has slightly decreased over time, and stands at +282 000 in 2020. Nationals are the only group with a consistently negative net mobility with a negative balance of -167 000 in 2020 (although this has decreased over time). Third-country nationals have the highest net mobility throughout the period, with a positive balance of +553 000 in 2020.

When all nationality groups are taken together, the total balance is +668 000: in other words, inflows outpace outflows for all the years studied. This difference has its roots in some inflows originating in non-EU and EFTA countries<sup>61</sup>. This is especially likely to be the case for third-country nationals, who are less likely to have moved from a previous EU and EFTA country of residence.

<sup>60</sup> Only six Member States (Bulgaria, Finland, Lithuania, Poland, Slovenia and Slovakia) had higher outflows in 2020 compared to 2019, generally by small amounts.

<sup>61</sup> Information is not available on the previous country of residence of movers.

**Figure 3: Net mobility of movers in the EU and EFTA, 2016-20**

Note: Data not available for 'EFTA movers' as well as Cyprus, France, Greece, and Portugal. For 2016-2019, 'EU movers' and 'Third-country nationals' refer to citizens from (non-)EU-28 countries. From 2020 onwards, the reference group is (non-)EU-27 countries. Estimated values in 2020 for 'EU movers' and 'TCNs' in Estonia and Malta, and 'Nationals' in Estonia.

Source: Eurostat international migration statistics (Migr\_imm1ctz, Migr\_emi1ctz), Milieu calculations.

## 1.2.2 Flows of movers by country in 2020

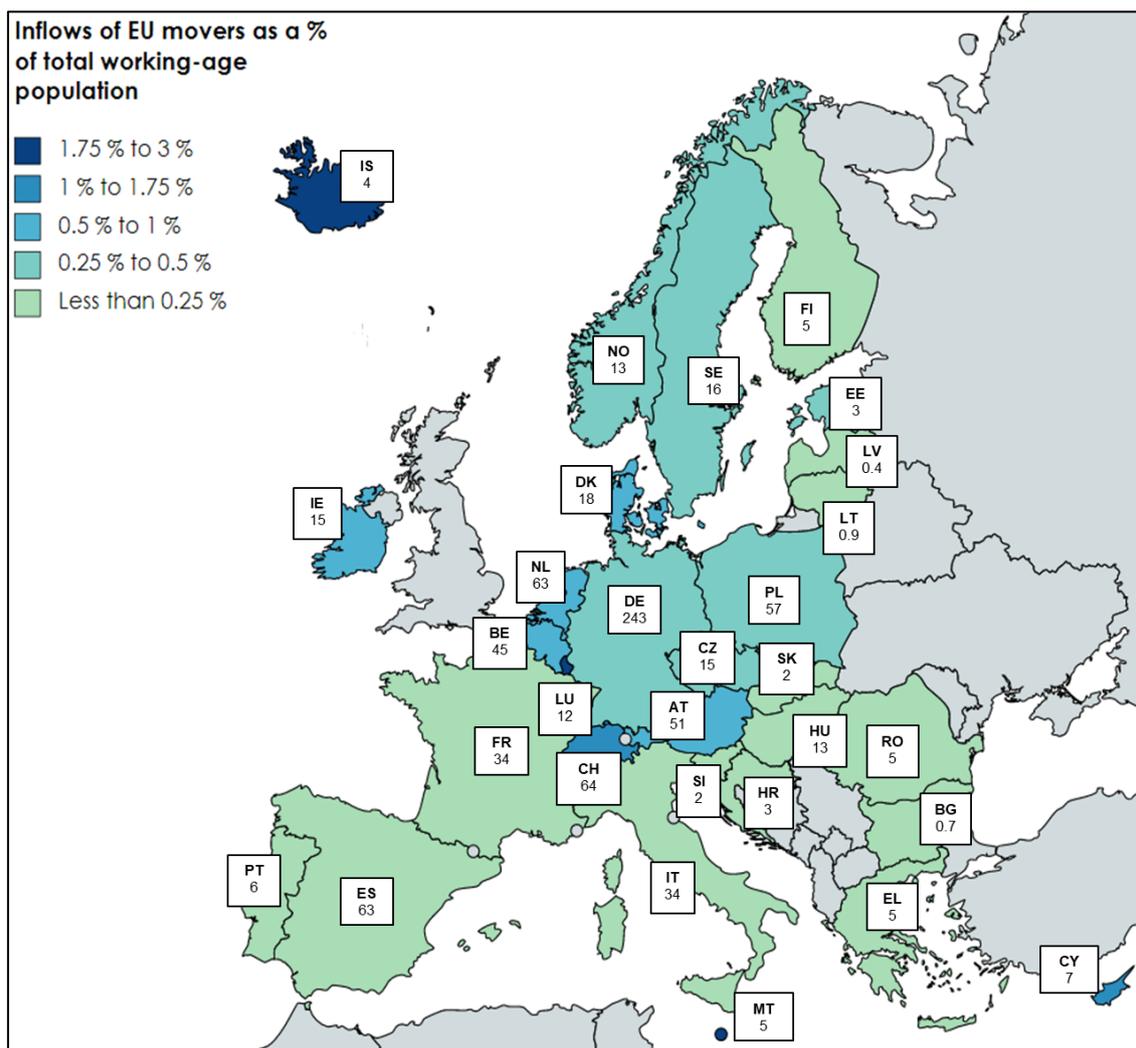
### Inflows by EU and EFTA country

Figure 4 and Table 2 shows the inflows of EU movers to individual EU and EFTA countries in 2020, both in absolute terms and as a proportion of the national working age population. This means that both show the most common destinations for movers, and the countries where their presence is most felt.

Small countries like Luxembourg (2.9%) and Iceland (1.9%) have the largest inflows of movers relative to the national population in 2020, followed by Switzerland (1.2%). The individually largest destination was Germany, with an inflow of 243 000 in 2020. The next-most significant destinations are Switzerland (64 000), Spain (63 000), the Netherlands (63 000), and Austria (51 000).

To highlight the countries where EU movers have the most significant presence, Table 2 shows the five main EU and EFTA destination countries for inflows in 2020 in absolute numbers (on the left) and relative to the size of the country's working age population (on the right). In the five largest countries of destination, the total number decreased most significantly by 44% in Spain<sup>62</sup>.

<sup>62</sup> Poland stands out as having an almost threefold increase of movers compared to 2019, although a break in series – from EU-28 to EU-27 movers – means that this figure needs to be treated with caution. Furthermore, national sources indicate that their numbers decreased. While these datasets cannot be directly compared due to differences in methodologies, it does indicate that any increase in Poland may be less than indicated by the Eurostat data. More specifically, it is indicated that inflows decreased by 11% in 2020: cf. Statistics Poland (2021), 'Demographic Yearbook of Poland 2021', Statistics Poland, Warsaw, Table 27, p. 444.

**Figure 4: Map – Inflows of EU movers to EU and EFTA countries, 2020**

Note: Countries are coloured based on the inflow of EU movers as a proportion of the total population. Labels indicate Member State and the total inflow of movers in 2020, in 1 000s. Numbers have been rounded to the closest 1 000 (or for those with less than 1 000, to the closest 100). Figures for Cyprus and Malta refer to EU-28 movers in 2019.

Source: Eurostat international migration statistics (Migr\_imm1ctz) and population statistics (Migr\_pop1ctz).

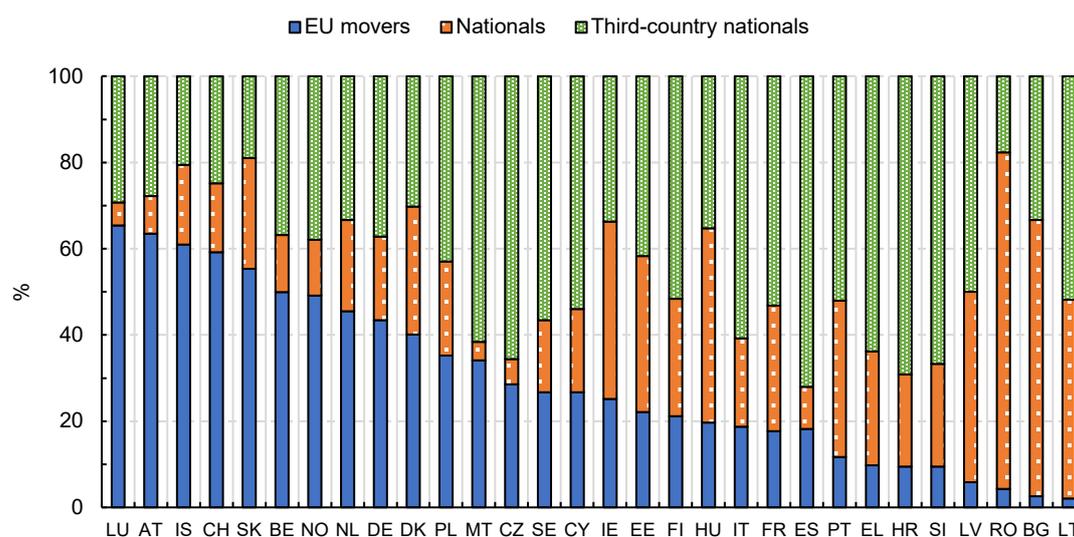
Figure 5 proceeds by showing the composition of all inflows to EU and EFTA in 2020. There are six countries where EU movers make up more than half of the inflows in 2020, namely Luxembourg (where 65% are movers), Austria, Iceland, Switzerland, Slovakia and Belgium. At the other end, Lithuania, Bulgaria and Romania have less than 5% of movers in their total inflows while at the same time, they have the highest proportion of nationals, i.e. 'returnees'<sup>63</sup>. As displayed in Figure 5, however, the absolute inflows are comparatively low.

<sup>63</sup> Returnees, i.e. nationals returning to their country of citizenship, are discussed in more detail in Section 1.4.3.

**Table 2: Inflows to main countries of destination for EU movers, 2019-2020**

Largest inflows of EU movers in 2020 (percentage compared to 2019 in brackets)			Largest inflows of EU movers as a share of total working age population in 2020 (pps compared to 2019 in brackets)		
Member State	1 000s	% change	Member State	%	pps change
DE	243	(-13%)	LU	2.9%	(-0.6 pps)
CH	64	(-7%)	IS	1.9%	(-0.8 pps)
ES	63	(-44%)	CH	1.2%	(-0.1 pps)
NL	63	(-16%)	AT	0.9%	(-0.1 pps)
AT	51	(-5%)	BE	0.7%	(-0.1 pps)

Source: Eurostat international migration and population statistics (Migr\_imm1ctz, migr\_pop1ctz), Milieu calculations.

**Figure 5: Composition of inflows of movers to EU and EFTA countries, 2020<sup>64</sup>**

Note: Data from 2019 used for Cyprus and Malta. EFTA movers excluded due to low numbers.

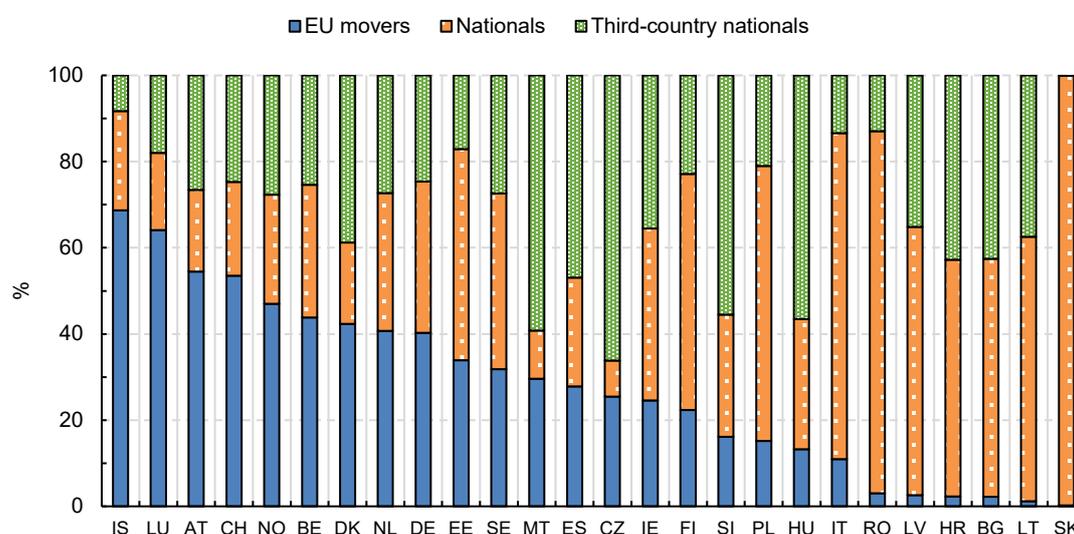
Source: Eurostat international migration statistics (Migr\_imm1ctz), Milieu calculations.

## Outflows by EU and EFTA country

Figure 6 shows the composition of outflows from EU and EFTA in 2020 in terms of the main nationality groups. In four countries – Iceland, Luxembourg, Austria, and Switzerland – more than half of the outflows in 2020 consisted of EU movers. 69% of outflows in Iceland in 2020 were EU movers, which is a 14 pps increase compared to the year before. This was followed by Luxembourg, where EU movers made up nearly two-thirds of the outflows (64%), as well as Austria and Switzerland (54% each).

<sup>64</sup> The composition of inflows to all EU/EFTA countries in 2019-2020 are shown in Table 9 in Section 1.5. The absolute inflows to all EU/EFTA countries in 2016-2021 are shown in Table (nationals), Table (EU movers) and Table (third-country nationals) in Annex C.1.

**Figure 6: Composition of outflows of movers from EU and EFTA countries, 2020<sup>65</sup>**



Note: Data not available for Cyprus, France, Greece and Portugal. Data from 2019 used for Estonia and Malta as 2020 values are missing at the time of writing.

Source: Eurostat international migration statistics (Migr\_emi1ctz), Milieu calculations.

**Table 3: Outflows of EU movers from main EU and EFTA countries of destination, 2019-2020**

Largest outflows of EU movers in 2020 (percentage compared to 2019 in brackets)			Largest outflows of EU movers as a share of total working age population in 2020 (% compared to 2019 in brackets)		
Member State	1 000s	% change	Member State	%	pps change
DE	160	(-20%)	LU	1.9%	(-0.3 pps)
ES	52	(-29%)	IS	1.6%	(+0.7 pps)
CH	45	(-16%)	CH	0.9%	(-0.2 pps)
NL	34	(-4%)	DK	0.6%	(-0.2 pps)
AT	27	(-4%)	AT	0.5%	(-0.0 pps)

Note: Data not available for 'EFTA movers' as well as Cyprus, Estonia, France, Greece, Malta and Portugal.

Source: Eurostat international migration and population statistics (Migr\_emi1ctz, migr\_pop1ctz), Milieu calculations.

Slovakia had the lowest share of EU movers and third-country nationals leaving the country with less than 1%, whilst having the highest share of nationals moving out with over 99% of the total. In Czechia, 25% of the workers moving out were EU movers, which

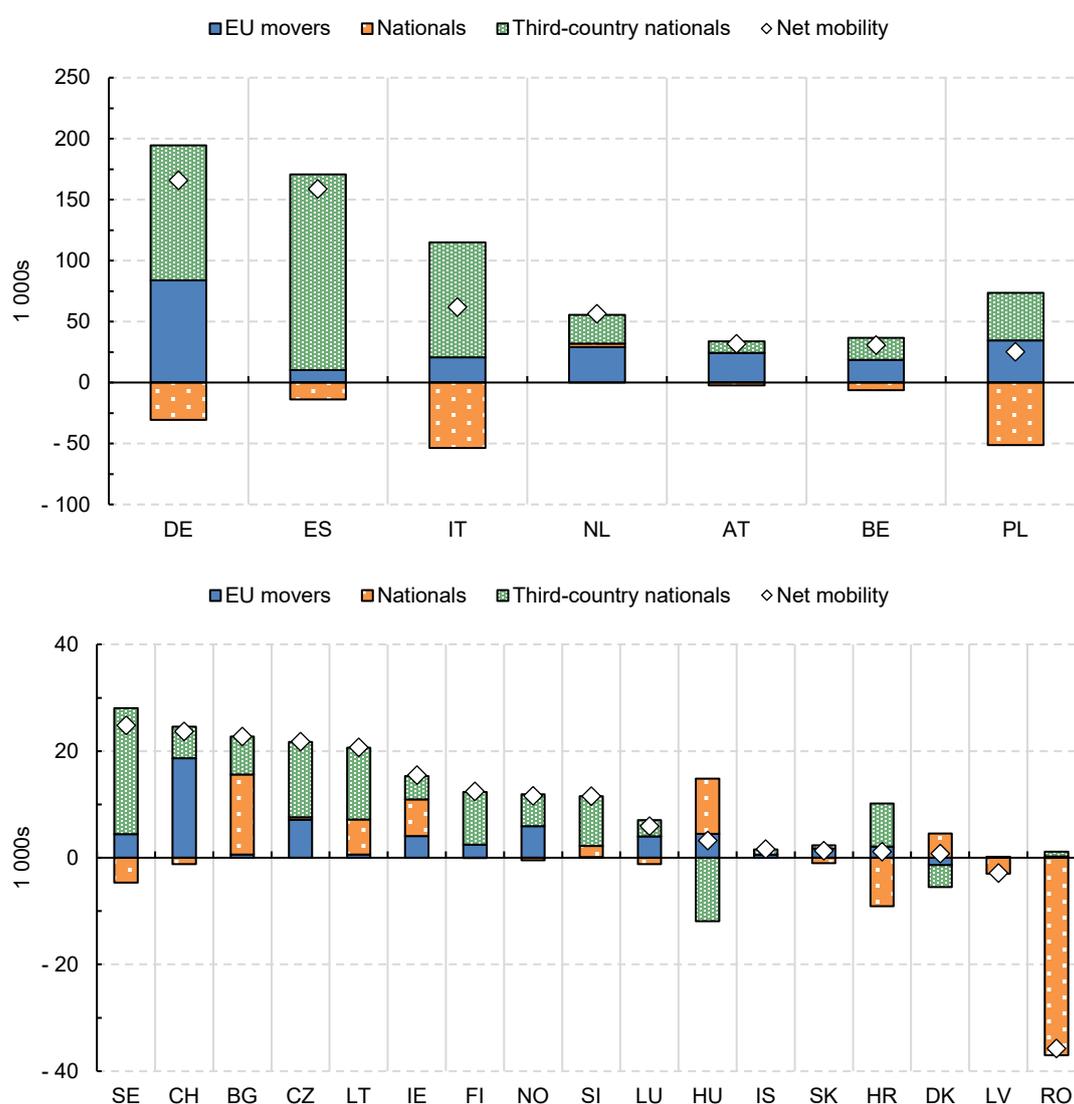
<sup>65</sup> The composition of outflows from all EU/EFTA countries in 2019-2020 are shown in Table 10 in Section 1.5. The absolute outflows from all EU/EFTA countries in 2016-2021 are shown in Table (nationals), Table (EU movers) and Table (third-country nationals) in Annex C.1.

is a significant 18 pps decline compared to 2019. The country also had the lowest share of working age nationals moving out with only 8% of the outflows.

Only six countries had more EU movers leaving the country in 2020 compared to the year before: Lithuania, Iceland, Poland, Slovenia, Bulgaria, and Norway. As shown in Table 3, the EU and EFTA countries with the largest outflows are generally those with the highest inflows. As expected, it also shows that outflows for all these countries decreased between 2019 and 2020.

## Net mobility by EU and EFTA country

Figure 7: Net mobility flows for EU and EFTA countries, 2020<sup>66</sup>



Note: Data not available for 'EFTA movers' as well as Cyprus, Estonia, Greece, France, Malta and Portugal.

Source: Eurostat international migration and population statistics (Migr\_imm1ctz, Migr\_emi1ctz), Milieu calculations.

<sup>66</sup> The absolute net flows to all EU countries in 2016-2021 are shown in Table (nationals), Table (EU movers) and Table (third-country nationals) in Annex C.1.

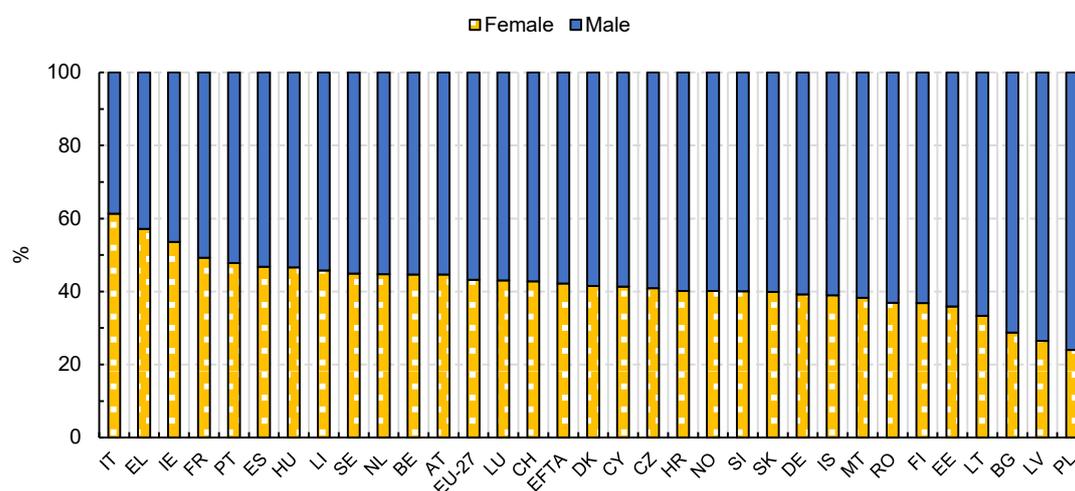
Figure 7 presents the net mobility flows of working age nationals, EU movers, and third-country nationals for available EU and EFTA countries in 2020<sup>67</sup>. Overall, Germany and Spain were the largest net receiving countries with net mobility flows of 166 000 and 159 000, whilst Italy and the Netherlands came next with 62 000 and 56 000. Romania and Latvia were the only net sending countries with 36 000 and 2 900, respectively, which is largely due to a higher number of nationals leaving as opposed to foreign citizens moving in.

Spain and Germany were the main net receivers of third-country nationals, whereas Hungary and Denmark were the only net senders. Net inflows of EU movers were the highest in Germany (84 000) as well as in Poland (35 000). At the same time, Poland had a high number of nationals leaving the country than returning, with over 51 000 working age movers. However, Poland also had the most significant increase in net inflows of EU movers compared to the previous year, from 4 000 to almost 35 000<sup>68</sup>. Italy was the country that saw the most nationals leaving rather than returning.

### Inflows to EU and EFTA countries by gender and age group

Finally, a breakdown is presented by the gender and age group of EU movers by EU and EFTA country. Figure 8 shows the distribution of male and female EU movers by country in 2020. In the EU as an average, 57% of movers are male while 43% are female. The countries with the highest share of male movers are found in Eastern Europe, with the three highest shares identified in Poland (76%), Latvia (74%) and Bulgaria (71%). There are only three countries where female movers make up more than 50% of the total inflows: Italy (61%), Greece (57%) and Ireland (54%).

**Figure 8: Inflows of EU movers to EU and EFTA countries by gender, 2020<sup>69</sup>**



Note: Values from 2019 used for Croatia, Cyprus, Greece, Malta and Poland.

Source: Eurostat international migration statistics (Migr\_imm1ctz), Milieu calculations.

Inflows can also be studied based on the age of incoming movers. To this end, Figure 9 shows the age composition of working age EU movers, sorted by the proportion of

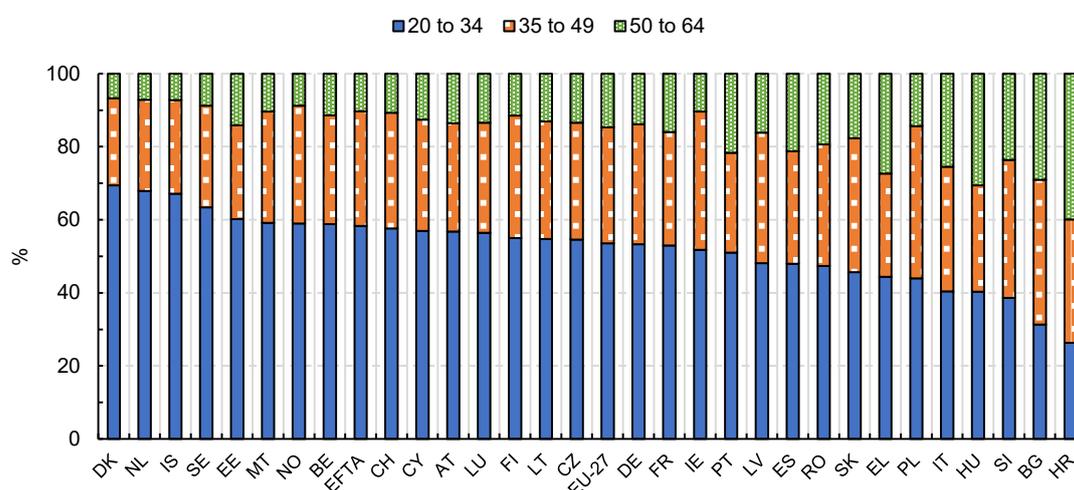
<sup>67</sup> Data limitations mean that net mobility cannot be reported for Cyprus, Estonia, France, Greece, Malta and Portugal.

<sup>68</sup> However, as discussed in the text accompanying Table 2, this increase should be interpreted with caution.

<sup>69</sup> The absolute numbers and percentages of inflows of EU movers to all EU/EFTA countries by gender in 2019-2020 are shown in Table 11 in Section 1.5.

movers aged 20-34. In the EU overall, a majority of inflows (53%, or 386 000 movers) are aged 20-34, and around one-third (32%, or 229 000) are aged 35-64. Only 15% (or 106 000) are aged 50-64. Individuals that are earlier in their career are thus much more likely to move to another EU or EFTA country.

**Figure 9: Inflows of EU movers to EU and EFTA countries by age group, 2020<sup>70</sup>**



Source: Eurostat international migration statistics (Migr\_imm1ctz), Milieu calculations.

On a Member State level, the country with the highest share of movers aged 20-34 is Denmark, at 69%. Overall, countries in north and north-western Europe have the highest shares of this age group, with the next-highest found in the Netherlands (68%), Iceland (67%), Sweden (63%) and Estonia (60%). At the other end of the scale, highest proportion of movers aged 50-64 is found in southern Europe, in Croatia (40%), Hungary (30%), Bulgaria (29%), Greece (27%) and Italy (24%).

### Box 1: The share of working age EU movers among all inflows of movers

This chapter focuses on working age movers, and figures and tables therefore only discuss the group aged 20-64. However, the proportion of working age movers among the total inflows of movers in 2020 merits a brief mention.

On an EU level in 2020, there were 164 000 movers aged 0-19 among inflows (18%), compared to 32 000 aged 65 and older (3%) and 721 000 of working age (79%). The highest share of incoming movers aged 65 and older is found in Croatia (20%), followed by Bulgaria (15%) and Hungary (13%)<sup>71</sup>, and the highest proportion of young movers aged 0-19 in France (29%), Poland (22%) and Ireland (21%).

In sum, **inflows remain heavily dominated by working age movers in all EU and EFTA countries**, although the share of older and younger movers vary<sup>72</sup>.

<sup>70</sup> The absolute numbers and percentages of inflows of EU movers to all EU/EFTA countries in 2019-2020 by age group are shown in Table 12 in Section 1.5.

<sup>71</sup> Note that available data does not allow for a distinction of whether the individuals have moved to their current country of residence before or after their retirement: some may in other words have remained in a previous country of residence after having previously worked there.

<sup>72</sup> The age distribution of incoming movers in all EU and EFTA countries can be found in Table 12 in Section 1.5.

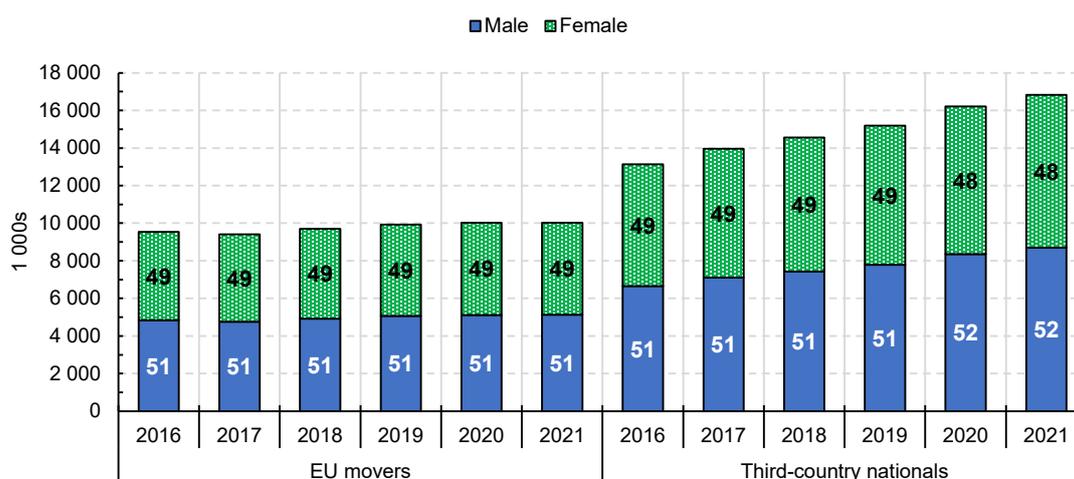
## 1.3 The number of movers in 2016-2021

This section discusses the trends in the total number of movers (from hereon mentioned as the ‘stock’ of movers) in the EU as a whole, and in individual EU and EFTA countries. The section focuses on EU movers and, to a lesser extent, third-country nationals. It begins by considering trends, and thereafter demographic traits such as gender, nationality and age.

### 1.3.1 Trend in stocks of movers and third-country nationals

Figure 10 displays the distribution of EU movers and third-country nationals in 2016-2021. In 2021, there were approximately 10.2 million EU movers compared to slightly more than 16.8 million third-country nationals. Throughout the period, third-country nationals have consistently been the larger of the two groups. The number of EFTA movers remained relatively stable at 153 000-162 000 during the period<sup>73</sup>. Throughout the time period, the stock of EU movers increased by 5.2%, and third-country nationals by 28%; however, the COVID-19 pandemic in 2020-2021 stopped this increase for EU movers, with stocks remaining largely steady in 2020-2021.

**Figure 10: EU movers and third-country nationals in the EU, 2016-2021<sup>74</sup>**



Note: Data labels indicate the nationality group as a share (%) of all in that group. EU-28 values used in 2016, as well as for Germany (2017-2019), Cyprus, Greece, France, Croatia, Malta and Poland (2017-2020).

Source: Eurostat [migr\_pop1ctz], Milieu calculations.

In terms of gender balance, the figure also shows the share of male and female individuals for each group and year. Year-to-year changes in this composition are small, and have broadly remained steady throughout the time period. There is a slightly higher proportion of male EU movers, standing in 2021 at 5.2 million compared to 5 million female movers. If the two groups are taken together, there are 13.1 million female EU movers and third-country nationals in the EU in 2021, compared to 13.9 million male.

<sup>73</sup> Due to the small size of the group, EFTA movers have been omitted from Figure 10.

<sup>74</sup> The absolute numbers and percentages of stocks of EU movers and third-country nationals by gender in 2016-2021 are shown in Table 13 in Section 1.5.

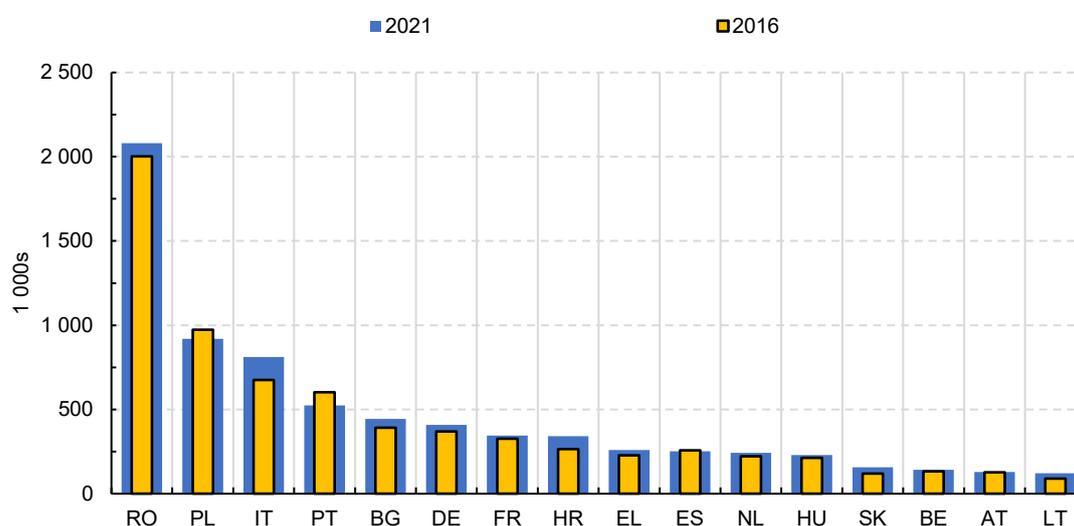
**Table 4: EU movers by age group in the EU, 2016-2021**

Age group	2016	2017	2018	2019	2020	2021
<b>20 - 34 years</b>	3 487 (36%)	3 445 (36%)	3 506 (36%)	3 546 (35%)	3 502 (34%)	3 441 (34%)
<b>35 - 49 years</b>	3 868 (40%)	3 849 (40%)	3 954 (40%)	4 033 (40%)	4 073 (40%)	4 093 (40%)
<b>50 - 64 years</b>	2 329 (24%)	2 270 (24%)	2 396 (24%)	2 511 (25%)	2 609 (26%)	2 653 (26%)
<b>Total</b>	<b>9 684</b>	<b>9 564</b>	<b>9 856</b>	<b>10 089</b>	<b>10 185</b>	<b>10 187</b>

Note: Percentages in brackets indicate the size of the age group as a percentage of all EU movers. EU-28 values used in 2016, as well as for Germany (2017-2019), Cyprus, Greece, France, Croatia, Malta and Poland (2017-2020).

Source: Eurostat [migr\_pop1ctz], Milieu calculations

While most inflows were aged 20-34, 40% of movers were aged 35-49 years in 2021. Table 4 shows the trend for each age group of movers in 2016-2021, both in absolute numbers and as a share of the total. Overall, the age distribution skews older over time: since 2016 the proportion of 20-34-year-olds has decreased from 36% to 34% of the total, while the proportion of those aged 50-64 years has increased from 24% to 26%<sup>75</sup>. The proportion of 35-49-year-olds has remained steady at 40% throughout. Overall, the population of working age EU movers are nevertheless younger than nationals overall (in 2021, 37% of working age nationals were aged 50-64, and only 29% aged 20-34).

**Figure 11: EU movers by nationality in the EU, 2016 and 2021**

Note: Only countries with at least 100 000 EU movers in 2021 are displayed in the chart.

Source: EU-LFS 2021, custom extraction by Milieu.

To develop on specific countries of origin, Figure 11 shows the number of movers in the EU by the largest nationalities in 2016 and 2021. For reasons of data availability, EU-LFS data is used as Eurostat population data has less coverage of nationalities. In 2021,

<sup>75</sup> Based on Eurostat population statistics, it can also be added that outside of the working population, 10% of EU movers were aged 65 or older in 2020. 17% were aged below 20. The country with the highest share of movers aged 65 and older was Croatia (34%). Bulgaria (23%) and France (21%); the ones with the highest share of movers aged 0-19 were Luxembourg (20%), Italy (19%) and Austria (19%).

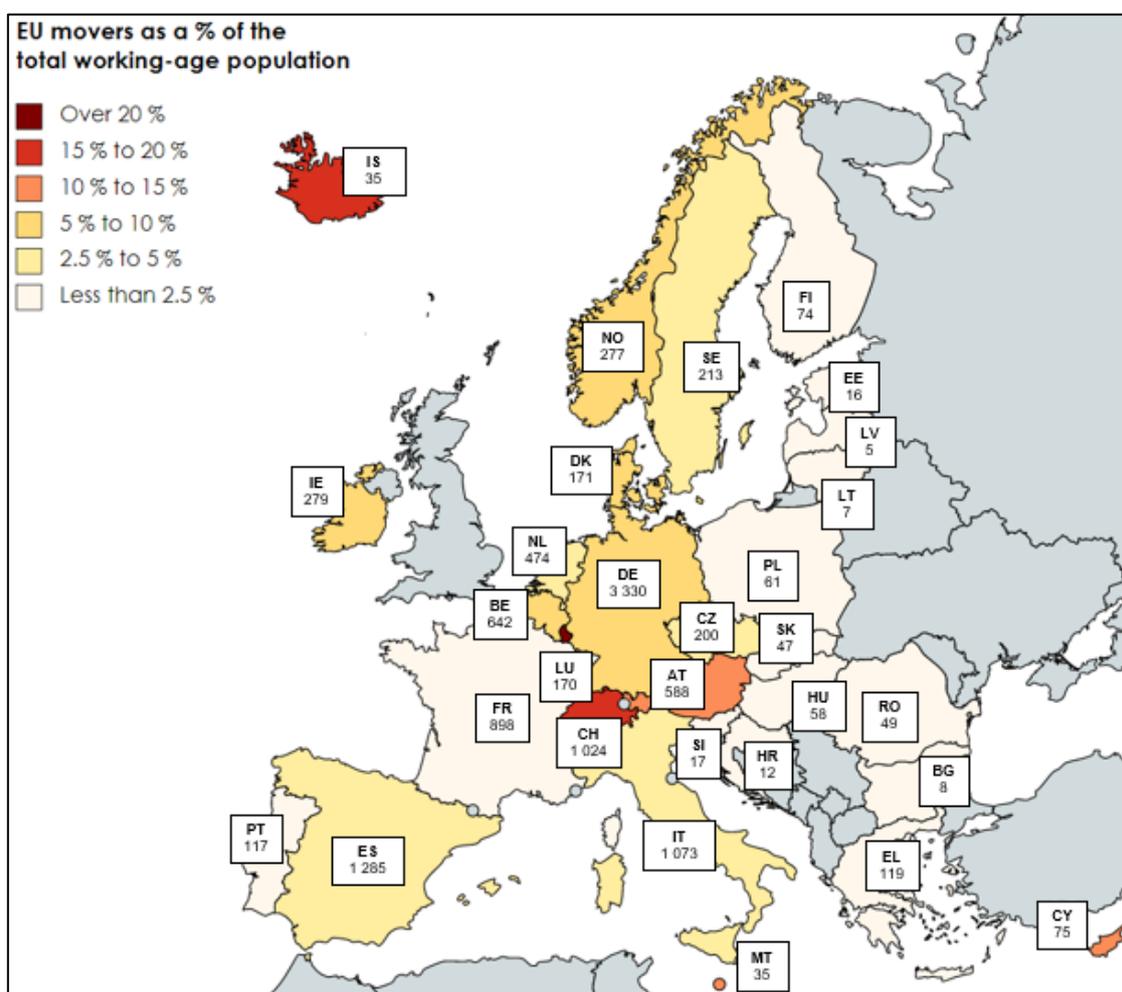
there were just over 2 million Romanian movers in the EU (27% of the total), 920 000 Polish movers (12%) and 811 000 Italians (10%). The comparison with 2016 shows that the largest countries of origin substantively have remained the same over time.

### 1.3.2 Stocks and characteristics of movers by country in 2021

This section further explores the data presented in Section 1.3.1, focusing on the country level. Firstly, it discusses the main countries of destination for EU movers and their share of the total working age population. The section then proceeds by analysing breakdowns by gender and age groups for each individual country where data is available.

#### Main countries of destination for EU movers

Figure 12: Map – EU movers in EU and EFTA countries, 2021



Note: Countries are coloured based on the proportion of the total population that is made up of EU movers. Labels indicate Member State and the total number of movers in 2021, in 1 000s. Numbers have been rounded to the closest 1 000.

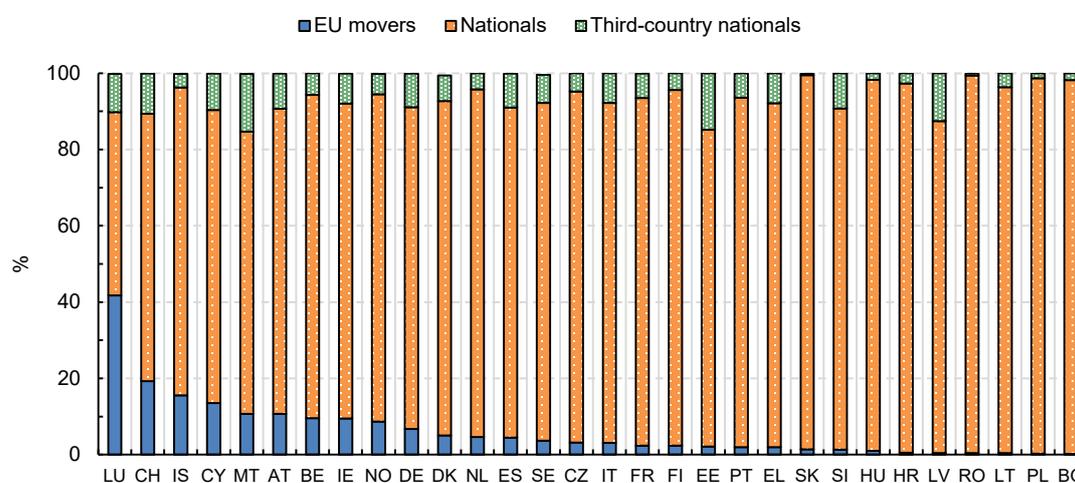
Source: Eurostat population statistics [Migr\_pop1ctz], Milieu calculations.

On 1 January 2021, the largest country of destination in the EU and EFTA was Germany, with ca. 3.3 million. In turn, Spain, Italy and Switzerland are the next-largest destination countries, all hosting above 1 million movers. Luxembourg has the most EU movers as a share of the total population at 42%, far higher than any other EU or EFTA country; in

Austria, Switzerland and Cyprus, the proportion is between 10 and 20%<sup>76</sup>. The absolute number of movers, and their share of the total population, is shown in Figure 12<sup>77</sup>.

To illustrate the proportion of the three groups (nationals, EU movers and third-country nationals) in the labour force, Figure 13 shows the composition of the working age population in EU and EFTA countries in 2021. Nationals make up more than 95% of the working age population in several Central and Eastern European countries (99% in Romania, 98% in Poland and Bulgaria, 97% in Hungary and Croatia, and 96% in Lithuania). The largest proportions of third-country nationals are found in Malta (15%) and, owing to a significant Russian population, Estonia (15%) and Latvia (13%).

**Figure 13: EU movers and third-country nationals as a share of the working age population of EU and EFTA countries, 2021<sup>78</sup>**



Note: EFTA movers make up less than 1% of the working age population in all EU and EFTA countries and have therefore been omitted from the chart.

Source: Eurostat population statistics (Migr\_pop1ctz), Milieu calculations.

Germany had the highest stock of EU movers in 2021, with a total number of more than 3.3 million. Spain and Italy follow with 1.3 million and 1.1 million respectively. The largest proportion of EU movers as a share of the population is found in Luxembourg and Switzerland, as in previous years. Indeed, these shares ignore the significant number of cross-border workers in their national workforce, who have their residence in another Member State and are therefore counted as nationals (see Chapter 3).

<sup>76</sup> Table in Annex C shows the absolute numbers of movers for each EU and EFTA country in 2021 and 2016, as well as changes over time.

<sup>77</sup> While not included in the map, the UK remains an important country of residence for many EU movers. According to the most recent data from the Office for National Statistics (ONS), 3.4 million EU nationals were resident in the UK between June 2020 and June 2021; cf. UK Office for National Statistics (ONS) (2021), *Population of the UK by country of birth and nationality* [Online]. Newport: UK Office for National Statistics (ONS). Available online: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/datasets/populationoftheunitedkingdombycountryofbirthandnationality>. Difficulties in the measurement of UK-EU movement were previously discussed in Fries-Tersch, et al. (2022), , Ch. 1.3.

<sup>78</sup> Stocks of EU movers and third-country nationals in all EU/EFTA countries (both absolute numbers and as a share of total working age population) in 2020-2021 are shown in Table 14 in Section 1.5.

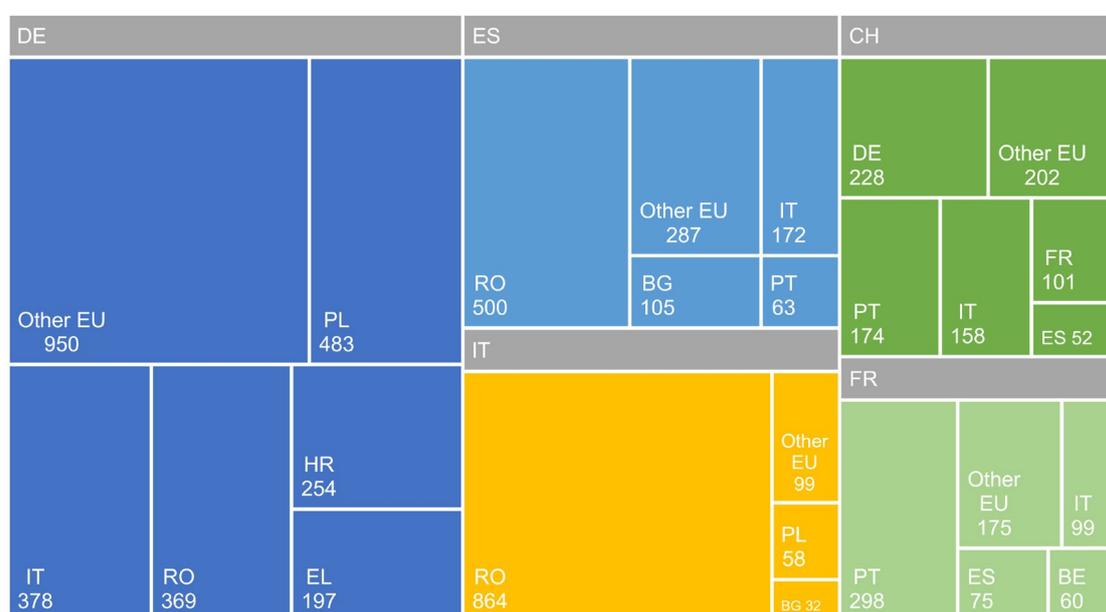
**Table 5: EU movers in the largest EU and EFTA countries of destination, 2020-2021**

Largest stocks of EU movers in 2021 (percentage compared to 2020 in brackets)			Largest stocks of EU movers as a share of total working age population in 2021 (% compared to 2020 in brackets)		
Member State	1 000s	% change	Member State	%	pps change
DE	3 300	(+1%)	LU	42%	(-0.2 pps)
ES	1 285	(+0.3%)	CH	19%	(+0.1 pps)
IT	1 073	(-5%)	IS	16%	(+0.0 pps)
CH	1 024	(+2%)	CY	14%	N/A
FR	898	N/A	MT	11%	N/A

Note: Data from EU-28 used for Croatia, Cyprus, France, Greece, Malta and Poland in 2020. No comparison of changes in the stock of EU-27 movers is therefore possible for Cyprus, France and Malta in 2021.

Source: Eurostat population statistics (Migr\_pop1ctz, migr\_pop1ctz), Milieu calculations.

**Figure 14: EU movers in the largest countries of destination by country of citizenship, 2021**

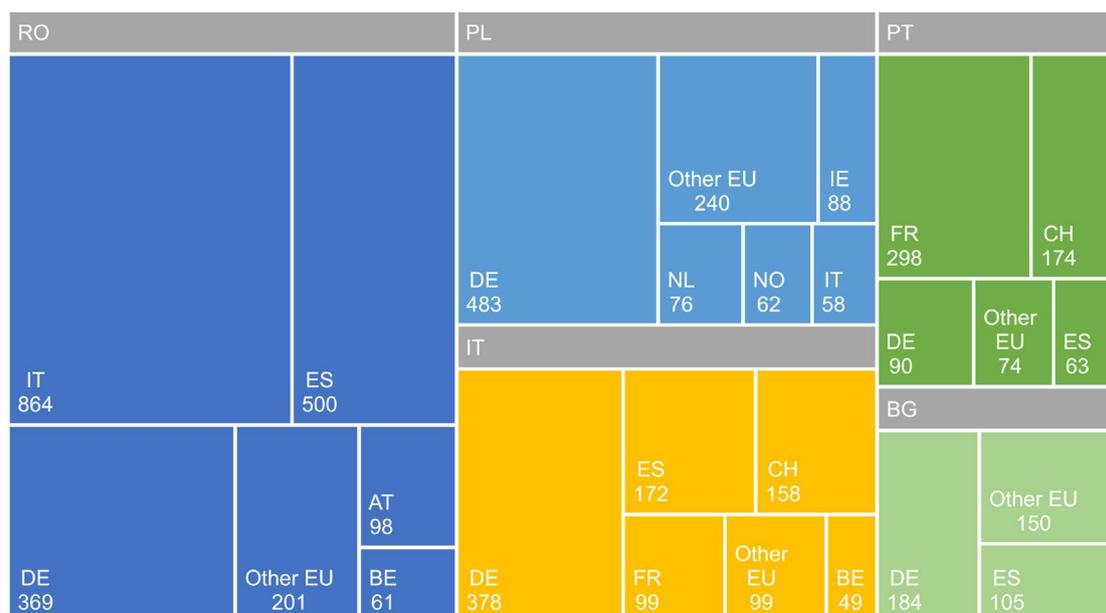


Note: The label 'Other EU' signifies movers of EU or EFTA nationality not indicated by another label in the chart. Numbers in labels indicate the total number of movers of that nationality in the country of destination in 1 000s.

Source: EU-LFS 2021, custom extraction by Milieu

To build on this, Figure 14 shows the country of origin for movers in the top five countries of destination<sup>79</sup>. Germany, the largest country of destination, has a mix in terms of countries of origin, with no one country dominating: the largest is Poland at 18%. This can be contrasted with Italy, where Romanian movers are 82% of all movers. In Switzerland more than half of movers (53%) come from the neighbouring countries of Germany, France and Italy.

**Figure 15: EU movers from the largest countries of origin by country of destination, 2021**



Note: The label 'Other EU' signifies movers of EU or EFTA nationality not indicated by another label in the chart. Numbers in labels indicate the total number of movers from that country of origin in 1 000s.

Source: EU-LFS 2021, custom extraction by Milieu

As a related statistic, To build on this, Figure 14 shows the country of origin for movers in the top five countries of destination. Germany, the largest country of destination, has a mix in terms of countries of origin, with no one country dominating: the largest is Poland at 18%. This can be contrasted with Italy, where Romanian movers are 82% of all movers. In Switzerland more than half of movers (53%) come from the neighbouring countries of Germany, France and Italy.

Figure 15 shows the main countries of destination for each of the five largest countries of origin: Romania, Poland, Italy, Portugal and Bulgaria. Germany is the largest destination for movers from Poland, Italy and Bulgaria, and the third-largest for movers from Romania.

<sup>79</sup> As this level of detail is not available in Eurostat population statistics, data from the EU-LFS is used. Therefore the total number of movers displayed in Figure 14 and To build on this, Figure 14 shows the country of origin for movers in the top five countries of destination. Germany, the largest country of destination, has a mix in terms of countries of origin, with no one country dominating: the largest is Poland at 18%. This can be contrasted with Italy, where Romanian movers are 82% of all movers. In Switzerland more than half of movers (53%) come from the neighbouring countries of Germany, France and Italy.

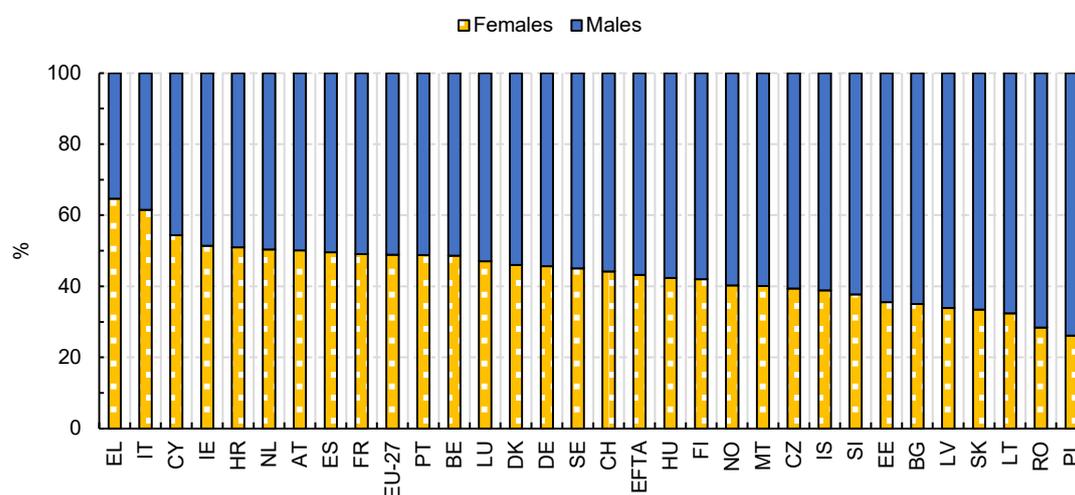
Figure 15 may differ from estimates based on Eurostat population statistics.

## EU movers by country, gender and age group

Figure 16 displays the gender distribution of EU movers at the country level, compared to the EU average of 49% female movers and 51% male. The country with the most significant share of female movers was Greece, where two-thirds (or 65%) are female. Italy and Cyprus have the next-largest shares, at 61% and 54% respectively. At the other end, the countries with the largest share of male movers are Poland (74%), Romania (72%) and Lithuania (68%). Except for Italy, the countries with very dominant shares of either male or female movers tend to be smaller countries of destination.

Finally, Figure 17 shows the age distribution of EU movers by country of residence. This illustrates how many movers are of working age (i.e. those aged 20-64, who are the focus of the remainder of this report), and how many that are either older or younger (i.e. aged either 65 and older, or below 20).

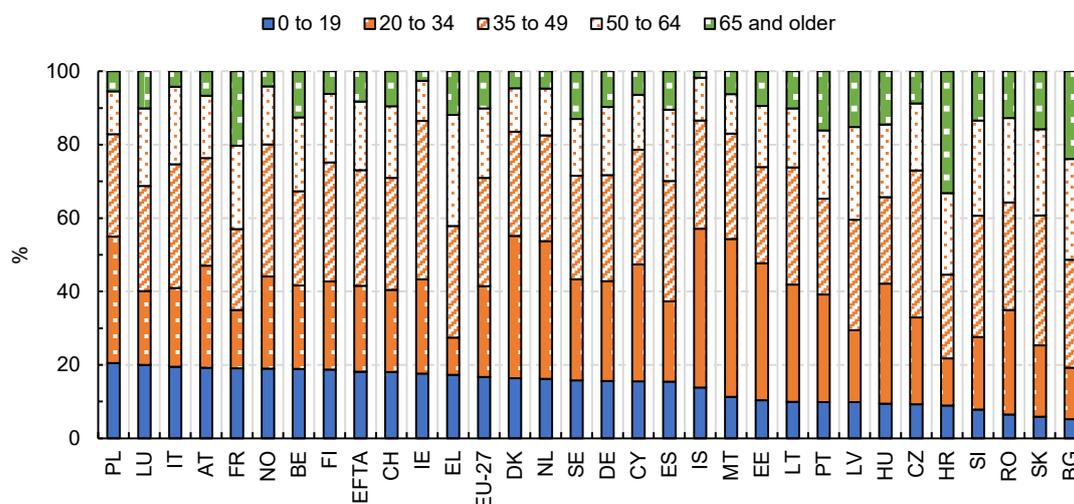
**Figure 16: EU movers by gender in EU and EFTA countries, 2021<sup>80</sup>**



Source: Eurostat population statistics (Migr\_pop1ctz), Milieu calculations.

The share of EU movers aged 0 to 19 is highest in Poland and Luxembourg (20%), and lowest in Bulgaria (5%). The highest share of movers aged 65 and older is found in Croatia (33%), Bulgaria (24%) and France (20%). Overall, the highest share of working age movers is found in Iceland (84%), Malta and Czechia (both 82%). The lowest share is found in Croatia (58%), France (61%) and Belgium (69%).

<sup>80</sup> The absolute numbers and percentages of stocks of EU movers and third-country nationals by gender in all EU/EFTA countries in 2020-2021 are shown in Table 15 in Section 1.5.

**Figure 17: EU movers by age group in EU and EFTA countries, 2021<sup>81</sup>**

Source: Eurostat population statistics (Migr\_pop1ctz), Milieu calculations.

## 1.4 Specific categories of working age movers

### 1.4.1 Cross-border workers

The category of cross-border workers concerns those who reside in one EU and EFTA country, but work in another. This broader concept also includes a number of sub-categories such as frontier workers (who live in border regions, and commute regularly across the border), posted workers (who are employed by an employer that normally carries out its activities in one Member State and who are posted by that employer to another Member State to perform work on its behalf)<sup>82</sup> and seasonal workers (who reside in the country of work for a few months of the year only, while retaining their ordinary residence in their home country)<sup>83</sup>.

<sup>81</sup> The absolute numbers of stocks of EU movers and third-country nationals by age group in all EU/EFTA countries in 2020-2021 are shown in Table 16 in Section 1.5.

<sup>82</sup> Posted workers are discussed more extensively in Section 1.4.2.

<sup>83</sup> Cross-border workers are discussed more extensively in Chapter 4.

**Table 6: Cross-border workers by nationality group and country of residence in the EU and EFTA, 2021<sup>84</sup>**

Country of origin	Nationals	EU movers	Total
<b>EU-27</b>	1 452	202	<b>1 654</b>
<b>FR</b>	394	30	<b>424</b>
<b>DE</b>	154	58	<b>213</b>
<b>PL</b>	190		<b>190</b>
<b>BE</b>	75	45	<b>119</b>
<b>RO</b>	113		<b>113</b>
<b>IT</b>	102	(2)	<b>104</b>
<b>HU</b>	72		<b>72</b>
<b>CZ</b>	61	(2)	<b>64</b>
<b>AT</b>	27	19	<b>46</b>
<b>SK</b>	41		<b>41</b>
<b>ES</b>	23	10	<b>33</b>
<b>HR</b>	30		<b>30</b>
<b>SE</b>	24	6	<b>29</b>
<b>NL</b>	19	10	<b>29</b>
<b>BG</b>	27		<b>27</b>
<b>SI</b>	20		<b>20</b>

Note: Cross-border workers are defined as those workers who live in one EU or EFTA country but are employed in another. Only countries with at least 20 000 cross-border workers are shown in the table above for reasons of data reliability. Numbers in brackets indicate low reliability. Rounding can lead to 'totals' being (slightly) less or more than the sum of nationals and EU movers.

Source: EU-LFS 2021, custom extraction by Milieu.

As shown in Table 6, there were ca. 1.7 million cross-border workers reported in the EU in 2021. This is similar to the level in 2020. Most of the cross-border EU movers had Germany as their country of residence with 58 000 workers. However, EU movers made up a more significant share of the cross-border workers residing in Austria (41%), Belgium (37%) and the Netherlands (33%). Conventionally, these EU workers mainly commute to Switzerland, Luxembourg, and Germany.

Table 7 presents the main sending and destination countries for cross-border EU workers in 2021. The largest countries of residence for cross-border workers remain France, Germany and Poland, similar to 2020. Nearly half of the workers in France move to EFTA countries, pointing to the large flow of cross-border workers going to Switzerland. Also in terms of destination, Germany and Switzerland were again the most popular countries with 378 000 and 345 000, respectively. Cross-border EU workers made up a significant share of the workforce in Luxembourg with 44%, mainly arriving

<sup>84</sup> The distribution of cross-border workers by country of origin and destination is shown in Table 56 in Annex C.1.

from France, Germany and Belgium. This shows the great significance of cross-border labour mobility for their economy (see Chapter 3).

**Table 7: Main countries of origin and destination for cross-border workers in the EU and EFTA, 2021**

Main countries of origin					Main countries of destination		
Member State	To EU-27	To EFTA	Total	% of workforce	Member State	Total	% of workforce
FR	236	188	424	1.7%	DE	378	1%
DE	159	53	213	0.6%	CH	345	8%
PL	176	15	190	1.2%	LU	212	44%
BE	119		119	2.6%	AT	143	4%
RO	113		113	1.5%	NL	122	2%
HU	69	3	72	1.6%	BE	85	2%
CZ	64		64	1.3%			

Note: Only Member States with at least 50 000 cross-border workers (either incoming or outgoing) are shown.

Source: EU-LFS 2021, custom extraction by Milieu.

### 1.4.2 Posted workers

A ‘posted worker’ is an employee who is sent by their employer to another EU Member State on a temporary basis to carry out work in some form. It can include both posted employees and posted self-employed persons<sup>85</sup>. The postings of workers within the EU are mainly tracked (1) by counting the Portable Document A1 forms (PDs A1) that are issued by Member States in a given year and (2) through available data from prior declaration tools of each Member State. However, not all postings are consistently reported and there is no uniform approach to collecting these statistics across Member States, which presents a challenge in terms of data comparability.

In 2021, the negative impact of the COVID-19 pandemic on intra-EU posting was still visible in the data on PDs A1: the total number of issued PDs A1 in the EU-27 and EFTA amounted to 3.6 million<sup>86</sup> (-4.4% compared to 2020 and -22.4% compared to 2019). The estimated number of individual persons to whom the PDs A1 were issued increased to 2.6 million (+3.2% compared to 2020 and -15.7% compared to 2019). As less postings were distributed among more individual workers, this indicates a tendency towards a shorter overall duration of postings. The two main issuing Member States were Germany (nearly 1 million) and Poland (677 000), together accounting for about half of all PDs A1 issued in 2021<sup>87</sup>.

<sup>85</sup> This can for instance be in the context of a regular employment relationship contract of services, an intra-group posting or a hiring out through a temporary agency: <https://ec.europa.eu/social/main.jsp?catId=471> For more information, cf. European Commission (2022d), *Posted workers* [Online]. Brussels: European Commission (DG EMPL). Available online: <https://ec.europa.eu/social/main.jsp?catId=471> [Accessed 16 November 2022].

<sup>86</sup> Of these, 2.2 million PDs A1 fall under Art. 12 (approximately 1.4 million persons), 1.3 million under Art. 13 (approximately 1.2 million persons), and 0.1 million for others (e.g. Art. 16).

<sup>87</sup> De Wispelaere, et al. (2022, forthcoming).

However, at the national level, available data from prior declaration tools of several Member States indicate an upward trend of the number of postings in the second half of 2020 and 2021.

In Austria, the monthly data on notified postings to the country point to a fast recovery after March 2020. The posting of workers in the Austrian construction sector grew 33% in 2021 compared to the previous year. Also, compared to 2019, posting activity rose 42% in the transport sector and 7% in the construction sector<sup>88</sup>.

In Belgium, 255 000 posted workers (225 000 employees and 30 000 self-employed) were reported in the national declaration tool in 2021, which is a 5.5% increase from the year before. This number fluctuated throughout the year: in 2021, the greatest peak was in October and November, while the level was significantly lower in January. The inflow of posted workers amounted to 2.8% of total employment in Belgium (+0.2 pps increase compared to 2020). Moreover, posted workers comprised around 20% of total employment in the construction sector. Posted workers to Belgium in 2021 were mainly sent from the Netherlands (21%), Poland (20%) and Lithuania (11%). However, the numbers have fallen over the years for the Netherlands (-3% compared to 2020), but increased for Poland (+20%) as well as Lithuania (+37%). Furthermore, 26% of all posted workers were third-country nationals<sup>89</sup>, of which the main nationalities included Ukraine (38%) and Belarus (17%). After being virtually absent before 2018, posted workers from these countries rose 75% and 125%, respectively, compared to 2020. The most important corridors were those of Ukrainians posted to Belgium from Poland and Lithuania, working mainly in construction and road transport<sup>90</sup>.

Also in Italy, the latest data show that the number of posted workers is returning to pre-pandemic levels. In the first half of 2021, 13 500 workers were posted to Italy through more than 20 000 postings, which reaches 2019 levels if projected over the whole year. 90% of them came from other EU countries, mostly from Romania, followed by Germany and Croatia. At the same time, 4 250 persons were posted abroad through 6 862 reported postings, of which 63% to other EU Member States (mostly France). In addition, 92% of these workers were male, 84% Italian nationals, and 8% Romanian citizens. Most of them were working in the manufacturing sector (39%), transport and warehousing (31%)<sup>91</sup>.

Poland – a predominantly sending country within the EU – saw a 10% rise of total outgoing PD A1s in 2021 compared to 2020 (from 618 000 to 677 000), exceeding also pre-pandemic levels. The recovery became evident from March 2021 onwards, as there were no year-on-year declines in any month since then. Looking at the main sectors of activity, most of the issued PD A1s went to Polish nationals and EU movers<sup>92</sup>. Furthermore, third-country nationals had a significant share in the transportation and storage sector with 35% in 2021 (+14 pps compared to 2020). The growing importance

<sup>88</sup> Geyer, L., Premrov, T. & S. Danaj (2022). Posted workers from and to Austria. Facts and figures. Leuven: POSTING.STAT project VS/2020/0499.

<sup>89</sup> Regarding TCNs, there are 1) those who are posted directly from a third country and 2) those who are posted via an employer established in another Member State. Data shows that the former is not often the case. For example, in 2021, only 42 persons were posted directly from Ukraine to Belgium, whereas 24,400 Ukrainians were posted to Belgium from another Member State.

<sup>90</sup> De Wispelaere, F., De Smedt, L., Muñoz, M., Gillis, D. & Pacolet, J. (2022), Posted workers from and to Belgium. Facts and figures, Leuven: POSTING.STAT project VS/2020/0499.

<sup>91</sup> Dorigatti, L., Pallini, M. & Pedersini, M. (2022), Posted workers from and to Italy. Facts and figures. Leuven: POSTING.STAT project VS/2020/0499.

<sup>92</sup> The figures in the report put nationals and EU movers together. However, the share of EU movers is regarded as negligible, although no precise records were available.

of third-country nationals can also be observed in temporary employment agencies (+152% compared to 2020), human health and social work activities (+116%), construction (+111%), and transportation and storage (+81%), with the vast majority having the Ukrainian nationality<sup>93</sup>.

The Netherlands, one of the main receiving countries within the EU, reported that 375 400 incoming posted workers (98% employees and 2% self-employed) were notified in 2021, representing a 13% increase compared to 2020. Out of these posted workers, 54% were nationals, 35% third-country nationals<sup>94</sup>, and 11% EU movers<sup>95</sup>. In terms of sectors, the vast majority of posted employees were employed in the road freight transport sector (79%). According to the prior notification tool, the main sending Member States in 2021 were Poland (37%), Lithuania (15%), and Germany (9%). The inflow of posted workers made up 3.9% of total employment in the Netherlands, whilst much higher in road freight transport (39%). After the easing of restrictions between August and September 2020, the number of notifications started to catch up and then stabilised again between October and December 2020. The lockdowns in 2021 did not have a significant impact on the inflow of posted workers<sup>96</sup>.

### 1.4.3 Return mobility and returnees in the EU

Movers who move back to their country of origin are understood to engage in 'return mobility', making them 'returnees'. This distinct category of EU movers was the subject of a thematic chapter in the 2021 report<sup>97</sup>. Nationals moving to their country of origin can be identified through regularly available Eurostat immigration statistics.

As expected, 2020 marked a significant decrease in returnees compared to previous years due to overall decreased mobility. Table 8 shows the number of returning nationals in the EU and the largest countries of return between 2016 and 2020: in 2020, the number of returnees decreased from 721 000 to 589 000, a decrease of 18%. This decrease was most clearly seen in the largest countries of return, with French returns decreasing by 37% (from 89 000 to 56 000) and Spanish returns by 36% (from 53 000 to 34 000). The largest absolute decline between 2019 and 2020 was for Romania (a decrease of 44 000 or 32%). It is likely that this figure will rebound when the next year's data is studied, given a longer-term increase in both the number of movers overall and the number of returnees annually.

<sup>93</sup> Kielbasa, M., Szaraniec, M., Mędrala, M. & Benio, M. (2022). Posted workers from and to Poland. Facts and Figures. Leuven: POSTING.STAT project VS/2020/0499.

<sup>94</sup> Mainly from Ukraine and Belarus and sent from Poland and Lithuania.

<sup>95</sup> Mainly from Poland, Lithuania, Romania, Bulgaria, Hungary and Croatia and sent from another Member State.

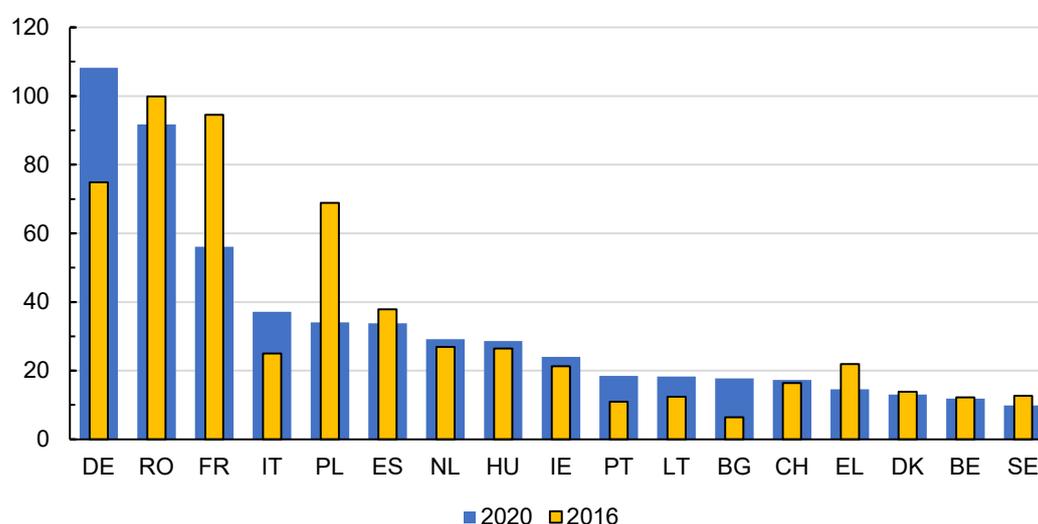
<sup>96</sup> Heyma, A., Bussink, H. & Vervliet, T. (2022). Posted workers to the Netherlands: Facts and figures. Leuven: POSTING.STAT project VS/2020/0499.

<sup>97</sup> Fries-Tersch, et al. (2022), , Ch. 4.

**Table 8: Returning nationals for the largest countries of return, 2016-2021**

	2016	2017	2018	2019	2020	2019/2020 Change (%)	Trend
<b>Returning nationals (1 000s)</b>							
EU-27	605	655	678	721	589	-18	
DE	75	88	108	115	108	-6	
RO	100	124	118	136	92	-32	
FR	95	87	89	89	56	-37	
IT	25	28	31	46	37	-19	
PL	69	70	54	50	34	-31	
ES	38	48	52	53	34	-36	

Source: Eurostat international migration statistics [migr\_imm1ctz], Milieu calculations.

**Figure 18: Returning nationals by country of return, 2016 and 2020<sup>98</sup>**

Note: Only countries with at least 10 000 returnees are shown.

Source: Eurostat international migration statistics [migr\_imm1ctz], Milieu calculations.

A comparative view of the number of returnees on a country level in 2016 and 2020 is shown in Figure 18. Even with the 2020 downturn, some longer-term trends are evident. First, the number of returnees to Germany has increased by 45% in the time period, from 75 000 to 108 000. Other proportionally large increases are seen in Bulgaria (6 000 to 18 000) and Portugal (11 000 to 18 000), although absolute numbers are comparatively low. The number of returnees to Poland was decreasing already prior to the pandemic year, going from 69 000 in 2016 to 50 000 in 2019. For Romania, Italy, France and Spain, the 2020 figures are a break in an otherwise upward-turning series, and it is likely that numbers will rebound following the lifting of pandemic-related restrictions.

<sup>98</sup> The number of returnees is shown annually for 2016-2020 for each country in Table 56 in Annex C.1.

## 1.5 Supplementary tables

Table 9: Composition of inflows of movers to EU and EFTA countries (in 1 000s and %), 2019-2020

	EU movers					Nationals					Third-country nationals				
	1 000s		%		Diff. (Pps)	1 000s		%		Diff. (Pps)	1 000s		%		Diff. (Pps)
	2019	2020	2019	2020		2019	2020	2019	2020		2019	2020	2019	2020	
<b>EU-27</b>	<b>860</b>	<b>722</b>	<b>27</b>	<b>29</b>	<b>+2</b>	<b>721</b>	<b>589</b>	<b>23</b>	<b>24</b>	<b>+1</b>	<b>1 560</b>	<b>1 156</b>	<b>50</b>	<b>47</b>	<b>-3</b>
<b>AT</b>	54	51	64	64	-1	7	7	8	9	0	23	22	27	28	0
<b>BE</b>	54	45	49	50	+1	12	12	11	13	+2	44	33	40	37	-3
<b>BG</b>	1	1	4	4	0	16	18	59	64	+5	10	9	37	32	-5
<b>CY</b>	6	7	27	35	+8	4	2	18	10	-8	12	11	55	55	0
<b>CZ</b>	28	15	31	29	-2	4	3	4	6	+1	59	34	65	65	+1
<b>DE</b>	279	243	41	43	+2	115	108	17	19	+2	283	208	42	37	-5
<b>DK</b>	19	18	40	41	0	13	13	28	30	+2	15	13	32	30	-2
<b>EE</b>	3	3	21	21	0	6	5	43	36	-7	5	6	36	43	+7
<b>EL</b>	10	5	12	9	-3	24	15	29	27	-1	50	35	60	64	+4
<b>ES</b>	113	63	21	18	-2	53	34	10	10	0	385	249	70	72	+2
<b>FI</b>	5	5	21	20	-1	6	7	25	28	+3	13	13	54	52	-2
<b>FR</b>	50	34	19	18	-1	89	56	34	29	-5	124	103	47	53	+6
<b>HR</b>	2	3	6	10	+4	7	6	21	21	-1	24	20	73	69	-4
<b>HU</b>	9	13	12	20	+9	30	29	38	45	+7	39	22	50	34	-16

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	EU movers					Nationals					Third-country nationals				
	1 000s		%		Diff. (Pps)	1 000s		%		Diff. (Pps)	1 000s		%		Diff. (Pps)
	2019	2020	2019	2020		2019	2020	2019	2020		2019	2020	2019	2020	
<b>IE</b>	21	15	34	25	-9	16	24	26	41	+14	24	20	39	34	-5
<b>IT</b>	46	34	19	19	0	46	37	19	20	+1	148	110	62	61	-1
<b>LT</b>	1	1	3	3	0	18	18	49	45	-4	18	21	49	53	+4
<b>LU</b>	14	12	67	67	0	1	1	5	6	+1	6	5	29	28	-1
<b>LV</b>	1	0	11	0	-11	3	3	33	50	+17	5	3	56	50	-6
<b>MT</b>	8	5	33	38	+5	1	1	4	8	+4	15	7	63	54	-9
<b>NL</b>	75	63	46	46	0	30	29	18	21	+3	58	46	36	33	-2
<b>PL</b>	19	57	13	36	+23	50	34	34	22	-13	77	67	53	42	-10
<b>PT</b>	10	6	18	12	-6	20	18	36	36	0	26	26	46	52	+6
<b>RO</b>	8	5	5	4	0	136	92	80	78	-2	26	21	15	18	+3
<b>SE</b>	21	16	26	27	+1	10	10	12	17	+5	50	33	62	56	-6
<b>SI</b>	3	2	12	8	-4	2	6	8	24	+16	21	17	81	68	-13
<b>SK</b>	2	2	67	50	-17	1	1	33	25	-8	0	1	0	25	+25
<b>EFTA</b>	<b>93</b>	<b>82</b>	<b>58</b>	<b>57</b>	<b>-1</b>	<b>21</b>	<b>22</b>	<b>13</b>	<b>15</b>	<b>+2</b>	<b>46</b>	<b>39</b>	<b>29</b>	<b>27</b>	<b>-1</b>
<b>CH</b>	69	64	61	59	-1	16	17	14	16	+2	29	27	25	25	0
<b>IS</b>	6	4	75	67	-8	1	1	13	17	+4	1	1	13	17	+4
<b>NO</b>	18	13	50	48	-2	3	4	8	15	+6	15	10	42	37	-5

Note: Data from 2019 used for Cyprus and Malta. EFTA movers excluded due to low numbers. Source: Eurostat international migration statistics (Migr\_imm1ctz), Milieu calculations.

Table 10: Composition of outflows of movers from EU and EFTA countries (in 1 000s and %), 2019-2020

	EU movers					Nationals					Third-country nationals				
	1 000s		%		Diff. (Pps)	1 000s		%		Diff. (Pps)	1 000s		%		Diff. (Pps)
	2019	2020	2019	2020		2019	2020	2019	2020		2019	2020	2019	2020	
<b>EU-27</b>	<b>523</b>	<b>413</b>	<b>29</b>	<b>27</b>	<b>-2</b>	<b>818</b>	<b>662</b>	<b>46</b>	<b>44</b>	<b>-2</b>	<b>436</b>	<b>441</b>	<b>25</b>	<b>29</b>	<b>+5</b>
<b>AT</b>	28	27	52	55	+3	11	9	20	18	-2	15	13	28	27	-1
<b>BE</b>	31	26	39	44	+5	23	18	29	31	+2	26	15	33	25	-7
<b>BG</b>	0	0	0	0	0	30	3	97	60	-37	1	2	3	40	+37
<b>CY</b>															
<b>CZ</b>	29	8	44	26	-18	5	3	8	10	+2	32	20	48	65	+16
<b>DE</b>	199	160	43	40	-2	165	139	35	35	0	104	98	22	25	+2
<b>DK</b>	25	19	45	42	-2	10	9	18	20	+2	21	17	38	38	0
<b>EE</b>	4	4	36	36	0	5	5	45	45	0	2	2	18	18	0
<b>EL</b>															
<b>ES</b>	74	52	32	28	-5	56	47	24	25	+1	99	88	43	47	+4
<b>FI</b>	3	3	23	23	0	8	7	62	54	-8	2	3	15	23	+8
<b>FR</b>															
<b>HR</b>	1	1	3	4	0	24	15	77	54	-24	6	12	19	43	+24
<b>HU</b>	13	8	30	13	-16	21	18	48	30	-18	10	34	23	57	+34
<b>IE</b>	13	11	29	26	-3	21	17	47	40	-7	11	15	24	35	+10

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	EU movers					Nationals					Third-country nationals				
	1 000s		%		Diff. (Pps)	1 000s		%		Diff. (Pps)	1 000s		%		Diff. (Pps)
	2019	2020	2019	2020		2019	2020	2019	2020		2019	2020	2019	2020	
<b>IT</b>	22	13	16	11	-5	94	91	67	76	+9	24	16	17	13	-4
<b>LT</b>	0	0	0	0	0	19	12	83	63	-19	4	7	17	37	+19
<b>LU</b>	8	8	67	67	0	2	2	17	17	0	2	2	17	17	0
<b>LV</b>	0	0	0	0	0	8	6	67	67	0	4	3	33	33	0
<b>MT</b>	2	2	29	29	0	1	1	14	14	0	4	4	57	57	0
<b>NL</b>	35	34	41	41	0	33	26	39	31	-7	17	23	20	28	+8
<b>PL</b>	15	20	11	15	+4	102	85	74	64	-10	21	28	15	21	+6
<b>PT</b>															
<b>RO</b>	8	5	4	3	-1	159	129	88	84	-4	14	20	8	13	+5
<b>SE</b>	12	11	33	31	-3	15	15	42	42	0	9	10	25	28	+3
<b>SI</b>	2	2	17	14	-2	5	4	42	29	-13	5	8	42	57	+15
<b>SK</b>	0	0	0	0	0	3	2	100	100	0	0	0	0	0	0
<b>EFTA</b>	<b>64</b>	<b>57</b>	<b>53</b>	<b>53</b>	<b>0</b>	<b>30</b>	<b>24</b>	<b>25</b>	<b>22</b>	<b>-3</b>	<b>26</b>	<b>26</b>	<b>22</b>	<b>24</b>	<b>+3</b>
<b>CH</b>	54	45	55	53	-2	23	19	23	22	-1	22	21	22	25	+2
<b>IS</b>	2	4	67	80	+13	1	1	33	20	-13	0	0	0	0	0
<b>NO</b>	7	8	44	50	+6	5	4	31	25	-6	4	4	25	25	0

Note: Data not available for Cyprus, France, Greece and Portugal. Data from 2019 used for Estonia and Malta as 2020 values were missing at the time of writing.

Source: Eurostat international migration statistics (Migr\_emi1ctz), Milieu calculations.

**Table 11: Inflows of EU movers to EU and EFTA countries by gender  
(in 1 000s and %), 2019-2020**

	Females					Males				
	1 000s		%		Diff. (Pps)	1 000s		%		Diff. (Pps)
	2019	2020	2019	2020		2019	2020	2019	2020	
<b>EU-27</b>	<b>378</b>	<b>307</b>	<b>43</b>	<b>43</b>	<b>0</b>	<b>496</b>	<b>399</b>	<b>57</b>	<b>57</b>	<b>0</b>
AT	24	23	44	45	+1	31	29	56	55	-1
BE	24	20	44	45	+1	30	25	56	55	-1
BG	0	0	28	29	+1	1	1	72	71	-1
CY	2	2	41	41	0	3	3	59	59	0
CZ	11	6	38	41	+3	17	9	62	59	-3
DE	108	96	38	39	+1	173	149	62	61	-1
DK	9	8	42	43	+1	12	11	58	57	-1
EE	1	1	36	36	0	2	2	64	64	0
EL	6	6	57	57	0	4	4	43	43	0
ES	54	30	47	47	0	60	34	53	53	0
FI	2	2	36	37	+1	4	3	64	63	-1
FR	26	18	50	50	0	26	18	50	50	0
HR	1	1	40	41	+1	1	1	60	59	-1
HU	4	6	41	47	+6	5	7	59	53	-6
IE	12	8	54	53	-1	10	7	46	47	+1
IT	27	21	58	61	+3	20	13	42	39	-3
LT	0	0	29	33	+4	1	1	71	67	-4
LU	6	5	43	43	0	8	7	57	57	0
LV	0	0	28	26	-2	1	0	72	74	+2
MT	3	3	38	38	0	5	5	62	62	0
NL	33	28	44	45	+1	42	35	56	55	-1
PL	5	5	24	25	+1	15	16	76	75	-1
PT	6	3	55	48	-7	5	3	45	52	+7
RO	3	2	37	37	0	5	3	63	63	0
SE	10	8	45	46	+1	13	9	55	54	-1
SI	1	1	30	40	+10	2	1	70	60	-10
SK	1	1	36	40	+4	1	1	64	60	-4
<b>EFTA</b>	<b>39</b>	<b>35</b>	<b>41</b>	<b>42</b>	<b>+1</b>	<b>55</b>	<b>48</b>	<b>59</b>	<b>58</b>	<b>-1</b>

	Females					Males				
	1 000s		%		Diff. (Pps)	1 000s		%		Diff. (Pps)
	2019	2020	2019	2020		2019	2020	2019	2020	
<b>CH</b>	29	28	42	43	+1	40	37	58	57	-1
<b>IS</b>	2	2	36	39	+3	4	3	64	61	-3
<b>NO</b>	7	6	39	40	+1	11	8	61	60	-1

Note: Values from 2019 used for Croatia, Cyprus, Greece, Malta and Poland.

Source: Eurostat international migration statistics (Migr\_imm1ctz), Milieu calculations.

Table 12: Inflows of EU movers to EU and EFTA countries by age group (in 1 000s and %), 2019-2020

	20 to 34					35 to 49					50 to 64				
	1 000s		%		Diff. (Pps)	1 000s		%		Diff. (Pps)	1 000s		%		Diff. (Pps)
	2019	2020	2019	2020		2019	2020	2019	2020		2019	2020	2019	2020	
<b>EU-27</b>	<b>467</b>	<b>386</b>	<b>53</b>	<b>54</b>	<b>+1</b>	<b>272</b>	<b>229</b>	<b>31</b>	<b>32</b>	<b>+1</b>	<b>135</b>	<b>106</b>	<b>15</b>	<b>15</b>	<b>0</b>
<b>AT</b>	31	29	57	57	0	16	15	30	29	-1	7	7	13	14	+1
<b>BE</b>	31	26	58	59	+1	17	13	31	30	-1	6	5	11	11	0
<b>BG</b>	0	0	28	31	+3	0	0	35	40	+5	0	0	37	29	-8
<b>CY</b>	3	4	58	57	-1	2	2	27	31	+4	1	1	15	13	-2
<b>CZ</b>	15	8	54	55	+1	9	5	34	32	-2	4	2	13	13	0
<b>DE</b>	150	130	53	53	0	94	80	33	33	0	37	34	13	14	+1
<b>DK</b>	15	12	70	69	-1	5	4	23	24	+1	1	1	7	7	0
<b>EE</b>	2	2	64	60	-4	1	1	24	26	+2	0	0	13	14	+1
<b>EL</b>	5	2	48	44	-4	3	2	28	28	0	2	1	24	27	+3
<b>ES</b>	53	30	46	48	+2	34	19	30	31	+1	28	13	24	21	-3
<b>FI</b>	3	3	56	55	-1	2	2	33	34	+1	1	1	11	11	0
<b>FR</b>	26	18	50	53	+3	16	11	30	31	+1	10	5	20	16	-4
<b>HR</b>	1	1	32	26	-6	1	1	32	34	+2	1	1	36	40	+4
<b>HU</b>	4	5	50	40	-10	2	4	27	29	+2	2	4	23	31	+8
<b>IE</b>	11	8	50	52	+2	8	6	36	38	+2	3	2	14	10	-4

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	20 to 34					35 to 49					50 to 64				
	1 000s		%		Diff. (Pps)	1 000s		%		Diff. (Pps)	1 000s		%		Diff. (Pps)
	2019	2020	2019	2020		2019	2020	2019	2020		2019	2020	2019	2020	
IT	20	14	43	40	-3	16	12	34	34	0	11	9	24	25	+1
LT	0	0	51	55	+4	0	0	34	32	-2	0	0	14	13	-1
LU	8	7	56	56	0	4	3	32	30	-2	2	2	12	13	+1
LV	0	0	48	48	0	0	0	37	36	-1	0	0	16	16	0
MT	5	3	56	59	+3	3	1	31	30	-1	1	0	13	10	-3
NL	51	43	68	68	0	19	16	25	25	0	5	4	7	7	0
PL	7	24	37	44	+7	7	23	39	42	+3	5	8	25	14	-9
PT	5	3	46	51	+5	3	2	27	27	0	3	1	28	22	-6
RO	4	2	52	47	-5	2	2	30	33	+3	1	1	18	19	+1
SE	14	10	63	63	0	6	4	28	28	0	2	1	9	9	0
SI	1	1	44	39	-5	1	1	37	38	+1	0	1	18	24	+6
SK	1	1	49	46	-3	1	1	36	37	+1	0	0	15	18	+3
<b>EFTA</b>	<b>55</b>	<b>48</b>	<b>59</b>	<b>58</b>	<b>-1</b>	<b>29</b>	<b>26</b>	<b>31</b>	<b>31</b>	<b>0</b>	<b>9</b>	<b>8</b>	<b>10</b>	<b>10</b>	<b>+0</b>
CH	40	37	58	58	0	22	20	32	32	0	7	7	10	11	+1
IS	5	3	68	67	-1	1	1	25	26	+1	0	0	8	7	-1
NO	11	8	62	59	-3	6	4	31	32	+1	1	1	8	9	+1

Source: Eurostat international migration statistics (Migr\_imm1ctz), Milieu calculations.

**Table 13: EU movers and third-country nationals in the EU by gender (in 1 000s and %), 2016-2021**

Nationality	Gender	2016	2017	2018	2019	2020	2021
EU movers	Male	4 832 (51%)	4 763 (51%)	4 928 (51%)	5 066 (51%)	5 118 (51%)	5 128 (51%)
	Female	4 698 (49%)	4 646 (49%)	4 772 (49%)	4 864 (49%)	4 906 (49%)	4 897 (49%)
Third-country nationals	Male	6 647 (51%)	7 115 (51%)	7 439 (51%)	7 793 (51%)	8 349 (52%)	8 702 (52%)
	Female	6 490 (49%)	6 843 (49%)	7 126 (49%)	7 393 (49%)	7 855 (48%)	8 119 (48%)

Note: EU-28 values used in 2016, as well as for Germany (2017-2019), Cyprus, Greece, France, Croatia, Malta and Poland (2017-2020).

Source: Eurostat [migr\_pop1ctz], Milieu calculations

**Table 14: Stocks of EU movers and third-country nationals in EU and EFTA countries (in 1 000s and % of total working age population), 2020-2021**

	EU movers					Third-country nationals				
	1 000s		% of w-a pop.		Diff. (Pps)	1 000s		% of w-a pop.		Diff. (Pps)
	2020	2021	2020	2021		2020	2021	2020	2021	
EU-27	10 025	10 025	4	4	0	16 204	16 822	6	6	+0.3
AT	563	588	10	11	+0.4	498	506	9	9	+0.1
BE	630	642	9	10	+0.2	376	379	6	6	0
BG	7	8	0	0	0	66	72	2	2	+0.2
CY	94	75	17	14		34	53	6	10	
CZ	195	200	3	3	+0.1	278	302	4	5	+0.4
DE	3 290	3 330	7	7	+0.1	4 339	4 398	9	9	+0.2
DK	168	171	5	5	+0.1	229	227	7	7	-0.1
EE	16	16	2	2	0	115	115	15	15	+0.1
EL	136	119	2	2		465	488	7	8	
ES	1 280	1 285	4	4	0	2 486	2 579	9	9	+0.3
FI	73	74	2	2	+0.1	128	135	4	4	+0.2
FR	959	898	3	2		2 302	2 415	6	6	
HR	11	12	0	1		55	64	2	3	
HU	61	58	1	1	0	101	98	2	2	0
IE	275	279	9	9	+0.1	229	232	8	8	0

	EU movers					Third-country nationals				
	1 000s		% of w-a pop.		Diff. (Pps)	1 000s		% of w-a pop.		Diff. (Pps)
	2020	2021	2020	2021		2020	2021	2020	2021	
IT	1 125	1 073	3	3	-0.1	2 557	2 715	7	8	+0.5
LT	6	7	0	0	0	48	62	3	4	+0.8
LU	169	170	42	42	-0.3	40	41	10	10	+0.1
LV	5	5	0	0	0	146	139	13	13	-0.4
MT	42	35	13	11		42	50	13	15	
NL	449	474	4	5	+0.2	431	426	4	4	-0.1
PL	29	61	0	0		271	307	1	1	
PT	111	117	2	2	+0.1	340	388	6	6	+0.8
RO	49	49	0	0	0	61	66	1	1	+0.1
SE	218	213	4	4	-0.1	443	434	8	7	-0.2
SI	17	17	1	1	0	107	116	8	9	+0.7
SK	46	47	1	1	+0.1	15	16	0	0	0
<b>EFTA</b>	<b>1 312</b>	<b>1 336</b>	<b>15</b>	<b>15</b>	<b>+0.2</b>	<b>736</b>	<b>739</b>	<b>8</b>	<b>8</b>	<b>0</b>
CH	1 004	1 024	19	19	+0.3	554	561	10	11	+0.1
IS	34	35	16	16	0	7	8	3	4	+0.4
NO	274	277	9	9	+0.1	175	170	6	5	-0.2

Note: EU-28 values used in 2020 for Cyprus, Greece, France, Croatia, Malta and Poland; no comparison possible between 2020 and 2021 for these MS.

Source: Eurostat population statistics (Migr\_pop1ctz), Milieu calculations.

**Table 15: Stocks of EU movers by gender in EU and EFTA countries, 2020-2021**

	Females					Males				
	1 000s		%		Diff. (Pps)	1 000s		%		Diff. (Pps)
	2020	2021	2020	2021		2020	2021	2020	2021	
<b>EU-27</b>	<b>4 267</b>	<b>4 897</b>	<b>49</b>	<b>49</b>	<b>0</b>	<b>4 487</b>	<b>5 128</b>	<b>51</b>	<b>51</b>	<b>0</b>
AT	283	295	50	50	0	280	294	50	50	0
BE	307	313	49	49	0	324	330	51	51	0
BG	3	3	35	35	0	5	5	65	65	0
CY		41		54			34		46	
CZ	75	79	39	39	1	120	121	61	61	-1
DE	1 497	1 520	46	46	0	1 792	1 810	54	54	0
DK	77	79	46	46	0	91	92	54	54	0

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	Females					Males				
	1 000s		%		Diff. (Pps)	1 000s		%		Diff. (Pps)
	2020	2021	2020	2021		2020	2021	2020	2021	
EE	6	6	36	36	0	10	11	64	64	0
EL		77		65			42		35	
ES	634	637	50	50	0	646	648	50	50	0
FI	31	31	43	42	-1	42	43	57	58	1
FR		440		49			458		51	
HR		6		51			6		49	
HU	25	24	40	42	2	36	33	60	58	-2
IE	141	144	51	51	0	134	136	49	49	0
IT	689	660	61	61	0	435	413	39	39	0
LT	2	2	32	32	0	4	4	68	68	0
LU	80	80	47	47	0	89	90	53	53	0
LV	2	2	35	34	-1	3	3	65	66	1
MT		14		40			21		60	
NL	228	239	51	50	0	221	235	49	50	0
PL		16		26			45		74	
PT	54	57	49	49	0	57	60	51	51	0
RO	14	14	28	28	0	35	35	72	72	0
SE	98	96	45	45	0	119	117	55	55	0
SI	6	6	36	38	2	11	10	64	62	-2
SK	15	16	33	33	0	31	31	67	67	0
<b>EFTA</b>	<b>566</b>	<b>577</b>	<b>43</b>	<b>43</b>	<b>1</b>	<b>746</b>	<b>759</b>	<b>57</b>	<b>57</b>	<b>1</b>
CH	443	452	44	44	0	561	572	56	56	0
IS	13	13	38	39	1	21	21	62	61	-1
NO	110	111	40	40	0	164	166	60	60	0

Note: EU aggregate in 2020 excludes Cyprus, Greece, France, Croatia, Malta, and Poland as no values are available for movers of EU-27 nationality until 2021. Percentages indicate the proportion of male or female movers in the given year. Differences in percentage points indicate the change in this proportion between 2020 and 2021; due to rounding, values in the table may not add up exactly.

Source: Eurostat population statistics [Migr\_pop1ctz], Milieu calculations.

**Table 16: Stocks of EU movers by age group in EU and EFTA countries (in 1 000s), 2020-2021**

	0 to 19			20 to 34			35 to 49			50 to 64			65 and older		
	2020	2021	Diff. (%)	2020	2021	Diff. (%)	2020	2021	Diff. (%)	2020	2021	Diff. (%)	2020	2021	Diff. (%)
<b>EU-27</b>	<b>1 909</b>	<b>2 287</b>	<b>+20</b>	<b>3 106</b>	<b>3 388</b>	<b>+9</b>	<b>3 558</b>	<b>4 042</b>	<b>+14</b>	<b>2 089</b>	<b>2 595</b>	<b>+24</b>	<b>1 006</b>	<b>1 384</b>	<b>+38</b>
<b>AT</b>	146	153	+5	217	221	+2	221	232	+5	126	135	+7	48	52	+8
<b>BE</b>	175	177	+1	210	213	+2	237	240	+1	183	189	+3	116	118	+2
<b>BG</b>	1	1	-3	1	1	+4	3	3	+8	3	3	+2	2	3	+7
<b>CY</b>		15			31			30			14			6	
<b>CZ</b>	21	23	+5	58	58	0	93	97	+4	44	45	0	20	21	+6
<b>DE</b>	671	698	+4	1 224	1 212	-1	1 275	1 291	+1	791	827	+5	416	434	+4
<b>DK</b>	34	35	+4	86	84	-2	58	61	+5	24	26	+6	9	10	+6
<b>EE</b>	2	2	+5	8	8	-3	5	5	+5	3	3	+3	2	2	+6
<b>EL</b>		29			17			51			51			20	
<b>ES</b>	268	268	0	392	379	-3	567	569	0	321	337	+5	171	180	+6
<b>FI</b>	18	18	+2	24	24	-1	31	32	+4	18	18	+5	6	6	+7
<b>FR</b>		283			234			326			337			300	
<b>HR</b>		2			3			5			5			7	
<b>HU</b>	7	7	+3	28	25	-13	19	18	-6	14	15	+11	10	11	+12
<b>IE</b>	63	62	-2	97	90	-7	143	151	+5	35	38	+9	8	9	+17

## ANNUAL REPORT ON INTRA-EU LABOUR MOBILITY 2022

	0 to 19			20 to 34			35 to 49			50 to 64			65 and older		
	2020	2021	Diff. (%)	2020	2021	Diff. (%)									
IT	286	274	-4	325	302	-7	502	474	-6	298	297	0	64	59	-7
LT	1	1	+2	2	3	+9	2	3	+10	1	1	+9	1	1	+11
LU	49	49	-1	50	49	-1	70	70	0	50	51	+3	24	25	+3
LV	1	1	+0	1	1	-5	2	2	+2	2	2	+3	1	1	+5
MT		5			18			12			5			3	
NL	93	97	+5	218	225	+3	160	173	+8	71	77	+8	27	28	+5
PL		17			28			23			10			5	
PT	15	16	+1	45	47	+3	39	41	+7	27	29	+8	24	26	+8
RO	4	4	0	18	17	-4	17	18	+2	14	14	+3	7	8	+5
SE	49	47	-4	85	82	-4	86	84	-1	47	46	-1	39	39	0
SI	2	2	+6	4	4	-6	7	7	0	5	5	+4	3	3	+8
SK	3	4	+1	12	12	-3	20	21	+5	13	14	+6	9	9	+8
<b>EFTA</b>	<b>324</b>	<b>330</b>	<b>+2</b>	<b>425</b>	<b>424</b>	<b>0</b>	<b>562</b>	<b>573</b>	<b>+2</b>	<b>325</b>	<b>338</b>	<b>+4</b>	<b>149</b>	<b>150</b>	<b>+1</b>
CH	250	256	+2	313	316	+1	424	431	+2	267	276	+4	134	135	0
IS	5	6	+4	18	18	-1	12	12	+3	5	5	+4	1	1	+14
NO	68	69	+1	94	90	-4	126	130	+3	53	57	+7	14	15	+7

Note: EU aggregate in 2020 excludes Cyprus, Greece, France, Croatia, Malta, and Poland as no values are available for movers of EU-27 nationality until 2021.

Source: Eurostat population statistics (Migr\_pop1ctz), Milieu calculations.

## 2 The labour market performance of mobile workers

### 2.1 Introduction

This chapter focuses on the interaction and integration of EU movers and third-country nationals in the labour markets of EU and EFTA countries. First, rates of activity, employment, unemployment, and self-employment are analysed. The proportion of movers and third-country nationals in part-time work and time-limited contracts is also considered. The chapter then moves on to assess how activity, employment and unemployment levels vary depending on demographic factors, and the proportion of EU movers and third-country nationals in different sectors and occupations.

#### Key findings

##### **Overall trends**

- After a decrease in the activity and employment rates of EU movers and third-country nationals during the COVID-19 pandemic in 2020, rates are once again increasing towards a pre-pandemic level. Unemployment rates have also started decreasing, but remain at a higher level than pre-pandemic.
- EU movers have higher activity rates than nationals, but lower employment rates. Third-country nationals overall have lower employment and activity rates. This is true for the whole 2016-2021 period.
- The proportion of self-employed EU movers and third-country nationals decreased significantly in 2020 during the COVID-19 pandemic, but has returned to pre-pandemic levels in 2021. The proportion of self-employed nationals remained relatively steady (if decreasing in the longer term) over the pandemic period.

##### **Labour market situation**

- On an EU level, 81% of EU movers (6.5 million individuals) were active on the labour market in 2021, compared to 79% of nationals and 70% of third-country nationals.
- EU movers and nationals both had an employment rate of 74% in 2021. This compares to 59% for third-country nationals.
- In 2021, EU movers had an unemployment rate of 9%. This is higher than nationals (6%) but lower than third-country nationals (16%). Compared to 2016, the unemployment rate has decreased in all three nationality groups.
- The highest employment rates of EU movers in EU Member States are found in the Netherlands (80%) and Germany (78%), and the lowest in Greece (56%) and Italy (64%). In these two countries, these rates are similar to those of nationals.

- There are 446 000 self-employed EU movers in 2021. In terms of sector, most are found in construction (28% of all self-employed movers), wholesale and retail trade (13%), and professional occupations (13%).
- In 2021, 16% of movers and 12% of nationals had fixed-term employment contracts. Third-country nationals have fixed-term contracts at a significantly higher rate (27%). A similar pattern, although with smaller differences between the groups, is found for the proportion of part-time work.

### ***Determinants to labour market integration***

- At the EU level, female movers have an employment rate of 67% (vs. 82% for male movers) with significant differences across Member States. Female nationals in 2021 have an employment rate of 69% against 79% for men, and female third-country nationals have by far the lowest at 47% (vs. 71% for male third-country nationals).
- The proportion of workers with fixed-term contracts is similar for male and female movers and at a slightly higher level than for nationals. The difference is much larger for part-time work: this stands at 28% for female nationals (against 7% for male nationals) and 37% for female EU movers (vs. 8% for male EU movers).
- For EU movers, nationals and third-country nationals alike, 35-49-year-olds have the highest employment rate on an EU level. Those aged 20-34 have the highest unemployment rate.
- The proportion of EU movers with high education<sup>99</sup> stands at 32% in 2021, up from 28% in 2016. Similar patterns are seen for nationals. The proportion of third-country nationals with high educational attainment has also increased, but stands at 24% in 2021.
- 28% of EU movers have low educational attainment, compared to 18% of nationals and 46% of third-country nationals.
- The most common occupations among movers on an EU level are elementary occupations, professionals (both 18%) and service and sales workers (16%). Both movers and third-country nationals are overrepresented relative to nationals in elementary occupations and craft and related trades.
- The largest sector of work for movers is manufacturing (17%). Relative to nationals, EU movers are most overrepresented in construction and accommodation and food services.

<sup>99</sup> As discussed later in this chapter, 'high education' refers to individuals who have attained tertiary education or higher (i.e. university, college or postgraduate education).

## 2.2 Movers in the labour market

This section compares the labour market integration of nationals, EU movers and third-country nationals. This is done over three sub-sections. The first compares activity, employment, and unemployment rates<sup>100</sup> on an EU level in 2016-2021, and in individual countries in 2021. The next sub-section focuses on patterns of self-employment. Finally, the share of each nationality group that is employed either on a fixed-term contract or on a part-time basis is considered.

### 2.2.1 Activity, employment, and unemployment of movers

#### Comparison of activity rates

Figure 19 compares the activity rates (the proportion of the population that are either employed or unemployed) of nationals, EU movers and third-country nationals from 2016 to 2021<sup>101</sup>. The activity rate of EU movers is consistently higher than for nationals (81% vs 79% in 2021), although differences have decreased in the period, notably in 2020 during the COVID-19 pandemic. The activity rate of third-country nationals is consistently lower than for the other two other groups, not surpassing 70% except for 2019.

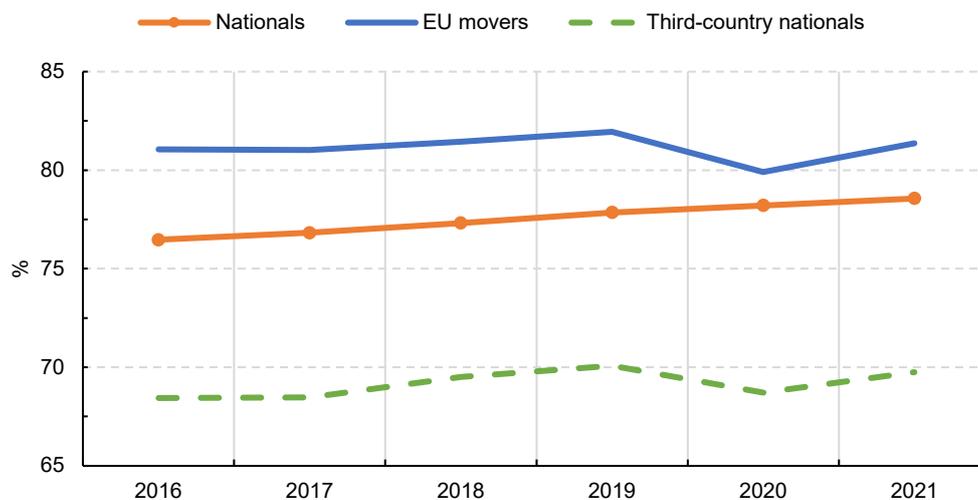
Considering differences between Member States, Figure 20 shows the activity rate by nationality group and country of residence in 2021. In all but three cases – the Netherlands, Germany and Greece – EU movers have higher activity rates than nationals. In most Member States, the difference is only a few percentage points. The picture is more mixed for third-country nationals who have slightly higher activity rates in Lithuania, Czechia, Portugal, Malta and Luxembourg, but otherwise have lower (and in many cases, significantly lower) activity rates.

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<sup>100</sup> For definitions of these terms, cf. the 'Definitions' table in the preamble to this report.

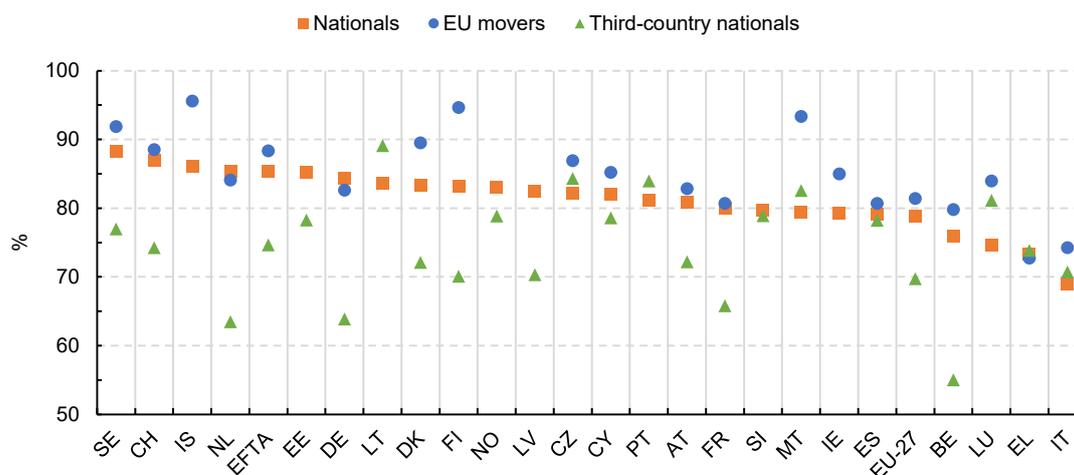
<sup>101</sup> 'Activity rate' is to be understood, here and elsewhere in the report, as the proportion of working age movers who are either employed or unemployed/looking for work. This is to be contrasted with those who are inactive or outside of the labour market due to e.g. retirement, education, or long-term sick leave.

**Figure 19: Activity rate by nationality group in the EU, 2016-2021<sup>102</sup>**



Source: EU-LFS 2021, custom extraction by Milieu.

**Figure 20: Activity rate by nationality group in selected EU and EFTA countries, 2021<sup>103</sup>**



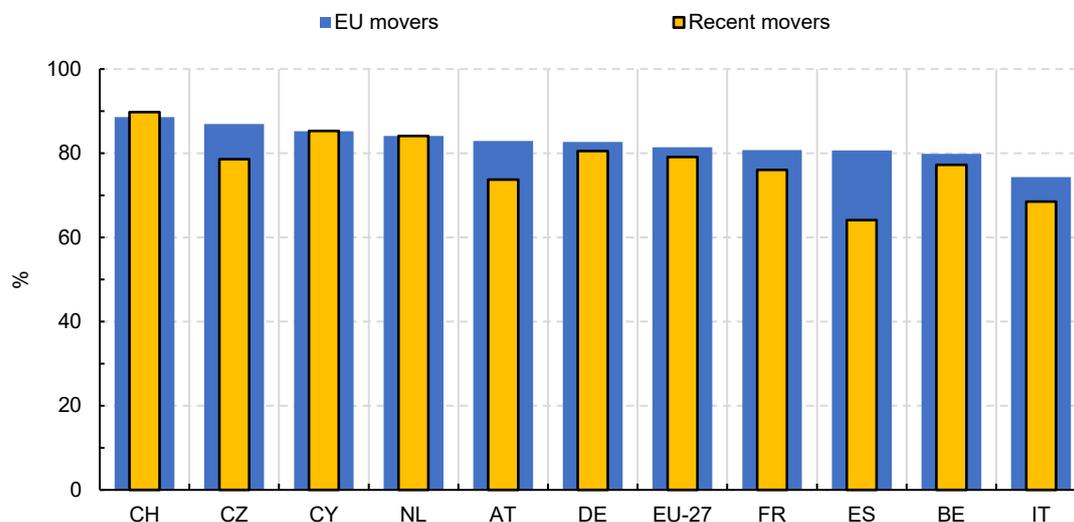
Note: Figure only shows Member States where data allowed for a comparison of nationals and at least one other group in line with Eurostat publication thresholds. Low reliability for EU movers in Denmark, Finland, and Malta.

Source: EU-LFS 2021, custom extraction by Milieu.

<sup>102</sup> Activity rates by nationality group and country of residence in 2016-2021 are shown in Table 58 in Annex C.2.

<sup>103</sup> Activity rates by nationality group and country of residence in 2016-2021 are shown in Table 58 in Annex C.2.

**Figure 21: Activity rate of recent EU movers and EU movers overall in selected EU and EFTA countries, 2021**



Note: 'Recent movers' are defined as those who have spent 1 year or less in the Member State. The figure only shows Member States where data allowed for a comparison of recent movers and movers in line with Eurostat publication thresholds. Low reliability for Austria, Belgium, Cyprus, Czechia, France, Germany, Italy, the Netherlands, and Spain.

Source: EU-LFS 2021, custom extraction by Milieu.

The ability of Member States to integrate recent movers, i.e. persons who have spent one year or less in that Member State, into their labour market can be a determinant of their future activity status. Participating in employment or labour market programmes may also assist movers in their integration into their new country of residence. Figure 22 shows the activity rate of recent EU movers in 2021 and EU movers overall, for the Member States where a comparison was possible<sup>104</sup>. In most cases, there are not significant differences between the two groups. There are six Member States where recent movers have an employment rate that is more than 5 percentage points lower than movers overall: Italy (6 pps), Czechia (8 pps), Austria (9 pps) and Spain (a significant 17 pps). This can be compared to an EU overall difference of 2 pps. Differences between recent and more long-term movers can be due to a range of factors including the profile of movers, the needs of the local labour market, and recognition of qualifications. However, due to a lack of data, a further investigation of these factors is beyond the scope of this chapter.

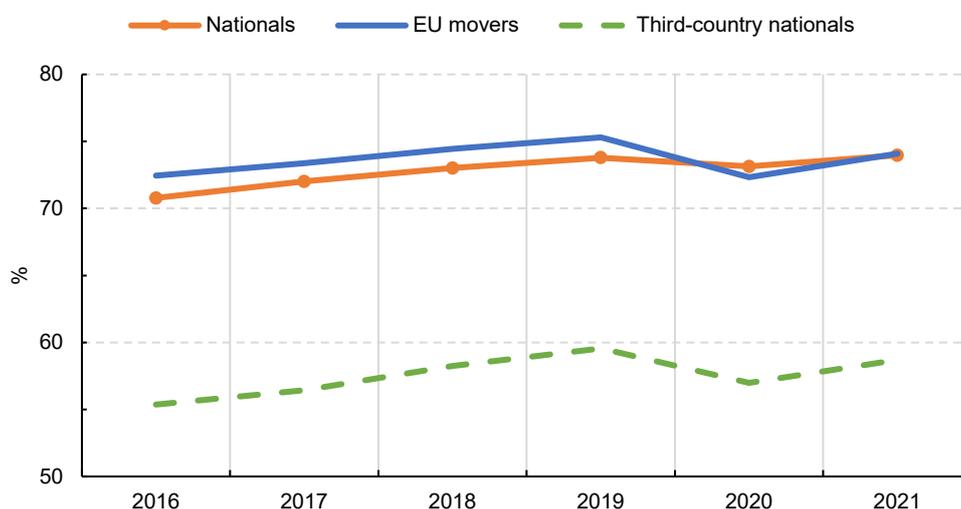
## Comparison of employment rates

EU movers have higher activity rates than nationals but since 2020 similar employment rates (i.e. the proportion of all individuals in a population that are employed). Figure 22 compares the employment rates of nationals, EU movers and third-country nationals at the EU level from 2016 to 2021. The curves of all three nationality groups are largely parallel up until 2019, with the employment rate of both movers and third-country nationals decreased in 2020. This can be traced to the high employment of non-nationals in both seasonal work such as agriculture, and in the broader service sector – all of which

<sup>104</sup> Eurostat thresholds mean that sample sizes that are below a certain reliability limit, determined separately for each Member State, cannot be published. The population of recent movers is too small in many Member States to publish, and comparison is therefore not possible with previous years. The sample size has further decreased due to more limited mobility than usual during the Covid-19 pandemic.

were heavily affected by the restrictions on movement and commerce that were implemented in most EU Member States during the COVID-19 pandemic<sup>105</sup>. In 2021, the employment rate of both nationals and EU movers stands at 74%.

**Figure 22: Employment rate by nationality group in the EU, 2016-2021**<sup>106</sup>



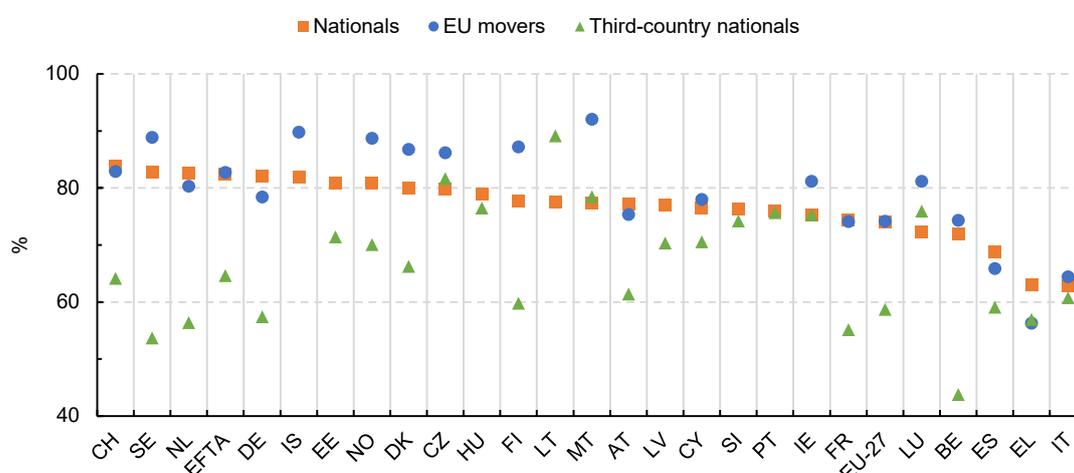
Source: EU-LFS 2021, custom extraction by Milieu.

Figure 23 elaborates on the differences between nationals and EU movers, showing the employment rate by nationality group and Member State of residence in 2021. EU movers have higher employment rates than nationals in the Nordic countries, Malta, Belgium, Ireland and Luxembourg. In all Member States except Czechia, Lithuania, Luxembourg and Malta, third-country nationals have lower employment rates than nationals.

<sup>105</sup> The effect of the Covid-19 pandemic on intra-EU labour mobility was extensively discussed in Fries-Tersch, et al. (2022), Ch. 3.

<sup>106</sup> Employment rates by nationality group and country of residence in 2016-2021 are shown in Table 59 in Annex C.2.

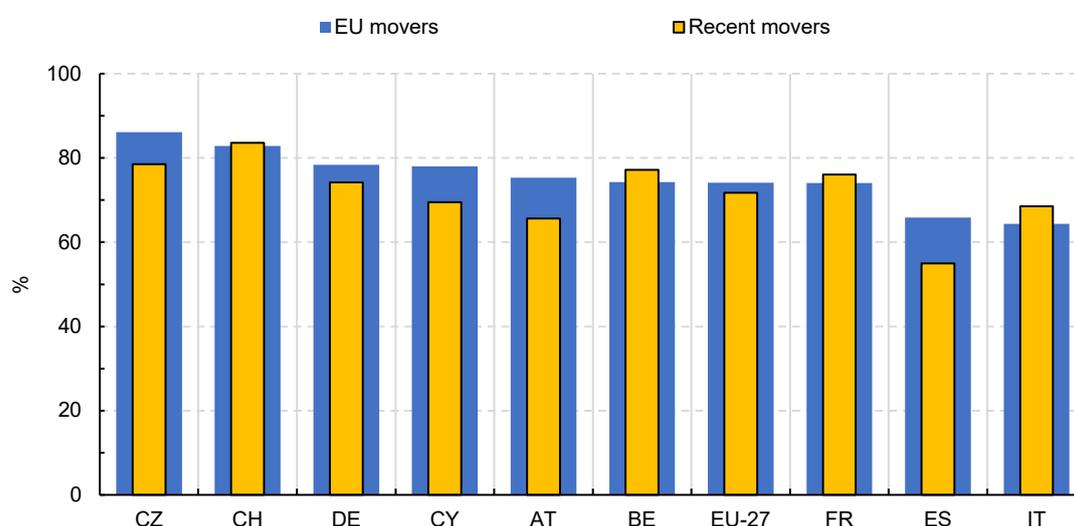
**Figure 23: Employment rate by nationality group in selected EU and EFTA countries, 2021<sup>107</sup>**



Note: Figure only shows Member States where data allowed for a comparison of nationals and at least one other group in line with Eurostat publication thresholds. Low reliability for EU movers in Cyprus, Czechia, Denmark, Finland, Ireland, Luxembourg, Malta, Norway, and Sweden; and for third-country nationals in Czechia, Denmark, Estonia, Hungary, Luxembourg, Norway, Portugal, and Slovenia.

Source: EU-LFS 2021, custom extraction by Milieu.

**Figure 24: Employment rate of recent EU movers and EU movers overall in selected EU and EFTA countries, 2021**



Note: 'Recent movers' are defined as those who have spent 1 year or less in the Member State. The figure only shows Member States where data allowed for a comparison of recent movers and movers overall in line with Eurostat publication thresholds. Low reliability for Austria, Belgium, Cyprus, Czechia, France, Germany, Italy, the Netherlands, and Spain.

Source: EU-LFS 2021, custom extraction by Milieu.

Data on the employment rate of recent EU movers is only available for a limited set of Member States, and is compared to EU movers overall in Figure 24. Recent movers generally have a lower employment rate than movers overall, but differences are often small (and on an EU level only 2 pps). The largest differences in countries where recent

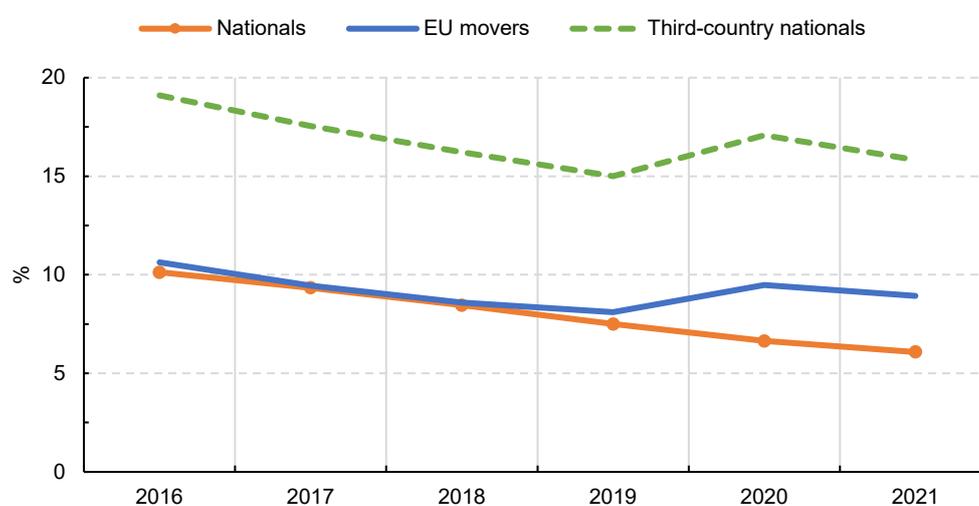
<sup>107</sup> Employment rates by nationality group and country of residence in 2016-2021 are shown in Table 59 in Annex C.2.

movers have a lower employment rate are Cyprus (8 pps), Austria (10 pps) and Spain (11 pps). As with Figure 22, a lack of reliable data prevents deeper analysis.

## Comparison of unemployment rates

Figure 25 compares the unemployment rates (i.e. the proportion of the population that are available to the labour market but now in employment) of nationals, EU movers and third-country nationals at the EU level from 2016 to 2021. This reflects the curve in Figure 23, above: unemployment has decreased as employment rates have increased, with an exception for movers in 2020 following the pandemic.

**Figure 25: Unemployment rate by nationality group in the EU, 2016-2021<sup>108</sup>**

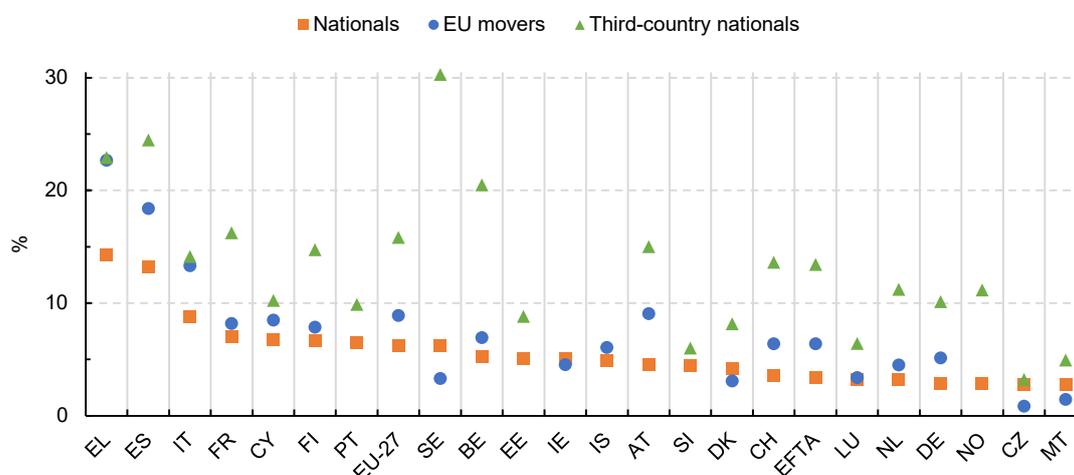


Source: EU-LFS 2021, custom extraction by Milieu.

Figure 26 elaborates on the differences in unemployment rates between nationality groups overall. Here too the results broadly reflect the pattern in employment rates. The highest unemployment rate for EU movers is found in Greece (23%), Spain (18%) and Italy (13%) – all countries which have among the highest unemployment also among nationals. Third-country nationals have the highest unemployment rate in Sweden (30%), Spain (24%), Greece (21%) and Belgium (21%). Due to a lack of available data, no comparison of the unemployment rate of recent movers is possible.

<sup>108</sup> Unemployment rates by nationality group and country of residence in 2016-2021 are shown in Table 60 in Annex C.2.

**Figure 26: Unemployment rate by nationality group  
in selected EU and EFTA countries, 2021<sup>109</sup>**



Note: Figure only shows Member States where data allowed for a comparison of nationals and at least one other group in line with Eurostat publication thresholds. Low reliability for EU movers in Cyprus, Czechia, Denmark, Finland, Ireland, Luxembourg, Malta, Sweden.

Source: EU-LFS 2021, custom extraction by Milieu.

## 2.2.2 Self-employment

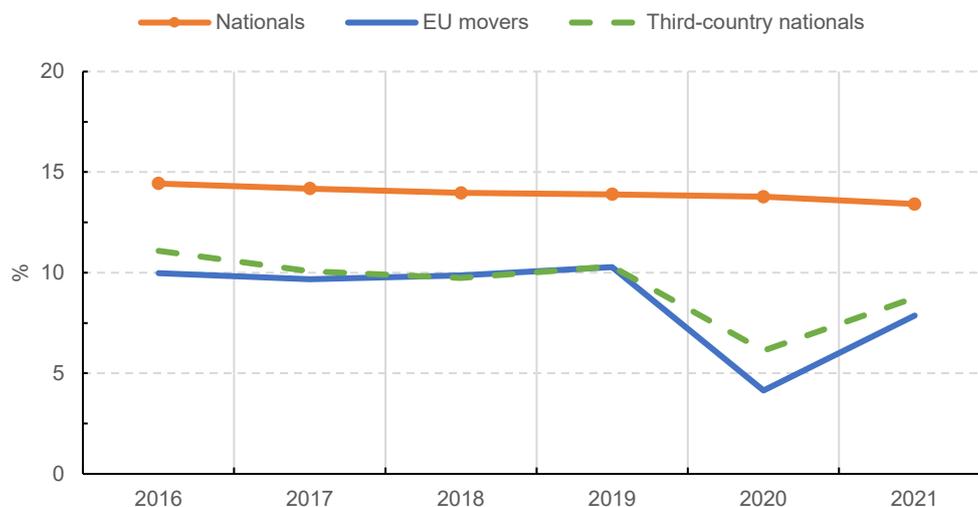
Self-employment refers to a situation where an individual works independently as the head of their own business or practice. This encompasses a broad group of circumstances, including both e.g. business owners with employees and self-employed individuals without employees. Job satisfaction and security also varies within the group: according to the sixth European Working Conditions Survey one in five self-employed people say that their main reason for self-employment is because they have no other alternative for work, rising to one in four for those without employees. However, among all self-employed, 60% nevertheless indicate that they have arrived at this employment form based on their own preferences<sup>110</sup>.

On the EU level, nationals have a consistently higher proportion of self-employed workers than EU movers and third-country nationals. As shown in Figure 28 the proportion of self-employed workers among nationals remained relatively stable in 2016-2019, while in 2020 the proportion of self-employed movers and third-country nationals decreased significantly before recovering in 2021. This is most likely due to the economic effects of the COVID-19 pandemic.

<sup>109</sup> Unemployment rates by nationality group and country of residence in 2016-2021 are shown in Table 60 in Annex C.2.

<sup>110</sup> Eurofound (2017), 'Exploring self-employment in the European Union', Publications Office of the European Union, Luxembourg, pp. 9-10. Of the remaining 20% of respondents, 14% responded 'A combination of both', and 6% 'Neither of those reasons'.

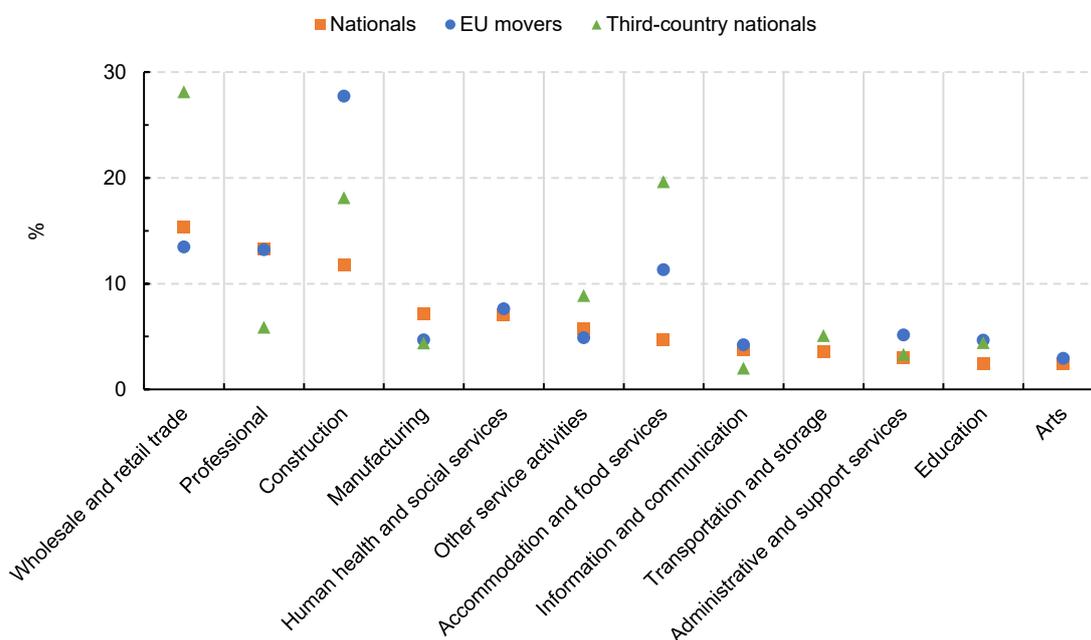
**Figure 27: Self-employment by nationality group in the EU, 2016-2021<sup>111</sup>**



Note: The figure indicates the share of self-employed individuals, with and without employees, for each nationality group.

Source: EU-LFS 2021, custom extraction by Milieu.

**Figure 28: Self-employment by nationality group and sector of employment in the EU, 2021<sup>112</sup>**



Note: The figure indicates the share of self-employed individuals, with and without employees, for each nationality group. Sectors without values above the publication threshold have been omitted from the chart.

Source: EU-LFS 2021, custom extraction by Milieu.

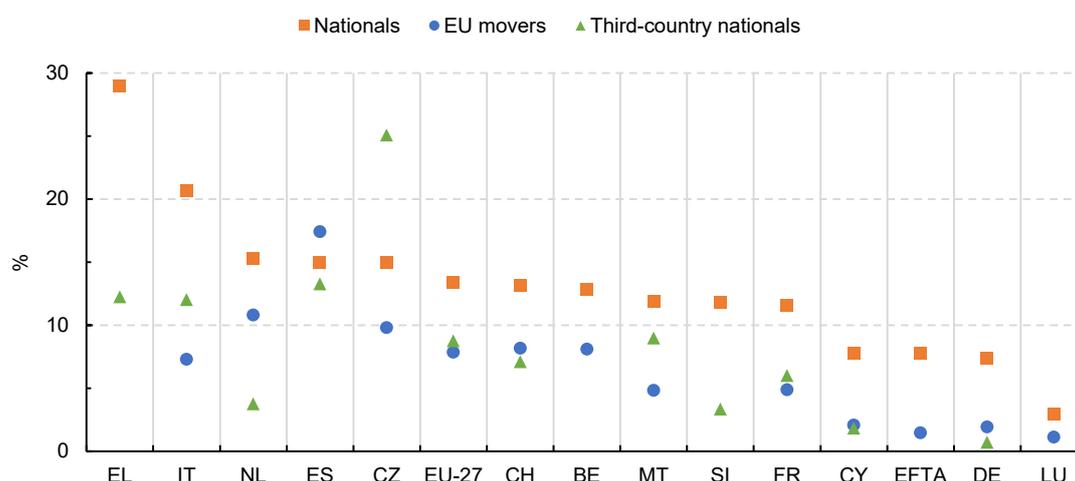
<sup>111</sup> The absolute numbers of self-employed by nationality group in 2016-2021 are shown in Table 22 in Section 2.4.

<sup>112</sup> The proportions of self-employed workers by nationality group and sector are shown in Table 23 in Section 2.4.

As shown in Figure 28, self-employed movers and third-country nationals are disproportionately found in sectors such as accommodation and food services and wholesale and retail trade – both sectors heavily affected by the restrictions implemented in many Member States during the pandemic in 2020<sup>113</sup>. This may go some way towards explaining why self-employed nationals on aggregate were less affected by the pandemic. Other factors may also contribute: for instance, it is possible that self-employed nationals on average have larger equity or savings and therefore were able to outlast the pandemic disruption. However, the available data does not allow for an investigation of this possibility.

Looking at a country level, it remains the case that self-employment is significantly more common among nationals. The only exceptions are Spain, where movers are slightly more likely to be self-employed, and Czechia, where the same is true for third-country nationals. A full elaboration is shown in Figure 29. On the EU level, 13% of nationals are self-employed compared to 8% of EU movers.

**Figure 29: Self-employed by nationality group  
in selected EU and EFTA countries, 2021<sup>114</sup>**



Note: The figure indicates the share of self-employed individuals, with and without employees, for each nationality group. Figure only shows Member States where data allowed for a comparison of nationals and at least one other group in line with Eurostat publication thresholds. Low reliability for nationals in Luxembourg; EU movers in Cyprus, France, Germany, Luxembourg, Malta and the Netherlands; and for third-country nationals in Cyprus, Greece, Slovenia, and Germany.

Source: EU-LFS 2021, custom extraction by Milieu.

### 2.2.3 Contractual and working time arrangements

While employment and activity rates provide important insights on labour market integration, additional aspects are required to understand the nature of work being carried out.

The definition of an individual being ‘employed’ used in the EU-LFS is based on the ILO definition that comprises ‘all those of working age who, during a short reference period,

<sup>113</sup> Fries-Tersch, et al. (2022), , Ch 3; European Centre for the Development of Vocational Training (CEDEFOP) (2022a), *Employment trends during the Covid-19 pandemic: Sectoral trends* [Online]. Available online: [https://www.cedefop.europa.eu/en/data-insights/employment-trends-during-covid-19-pandemic#\\_sectoral\\_trends](https://www.cedefop.europa.eu/en/data-insights/employment-trends-during-covid-19-pandemic#_sectoral_trends) [Accessed 15 September 2022].

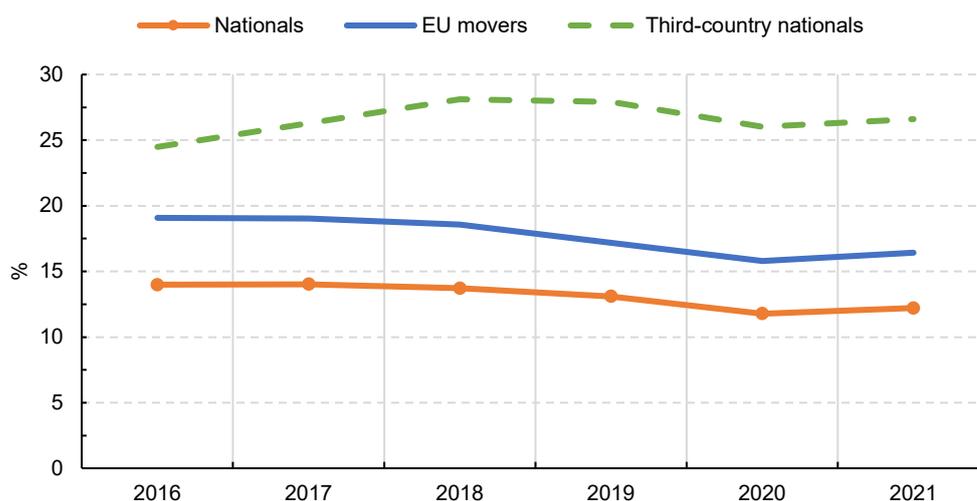
<sup>114</sup> The proportions of self-employed workers by nationality group and country of residence are shown in Table 24 in Section 2.4

were engaged in any activity to produce goods or provide services for pay or profit', and 'who worked in a job for at least one hour during the reference period'<sup>115</sup>. The employment status of an individual is therefore disconnected from other concepts such as their work intensity, i.e. how much of their *potential* working time an employee *actually worked*<sup>116</sup>. In order to better understand the labour market situation of movers, this section therefore compares the prevalence of temporary work contracts and part-time work among nationals, EU movers and third-country nationals.

### Fixed-term contracts across nationality groups

As shown in Figure 30, EU movers have a consistently higher employment on fixed-term (i.e. temporary) contracts than nationals: in 2021, this applied to 16% of movers and 12% of nationals. The magnitude of the difference has remained substantially the same in 2016-2021. For third-country nationals, however, the incidence of temporary contracts has increased in the time period and resides somewhere between 25% and 30%.

**Figure 30: Share of fixed-term contracts by nationality group in the EU, 2016-2021<sup>117</sup>**



Source: EU-LFS 2021, custom extraction by Milieu.

As shown in Figure 31, the magnitude of the difference varies between Member States in 2021. In almost all cases where data is available, EU movers have temporary contracts to a higher degree than nationals. The difference is smallest in Spain (25% vs. 23%) and in France (15% vs. 13%). In most countries, third-country nationals have significantly higher rates of fixed-term contracts, with the highest rates found in Portugal, the Netherlands, Spain and Sweden.

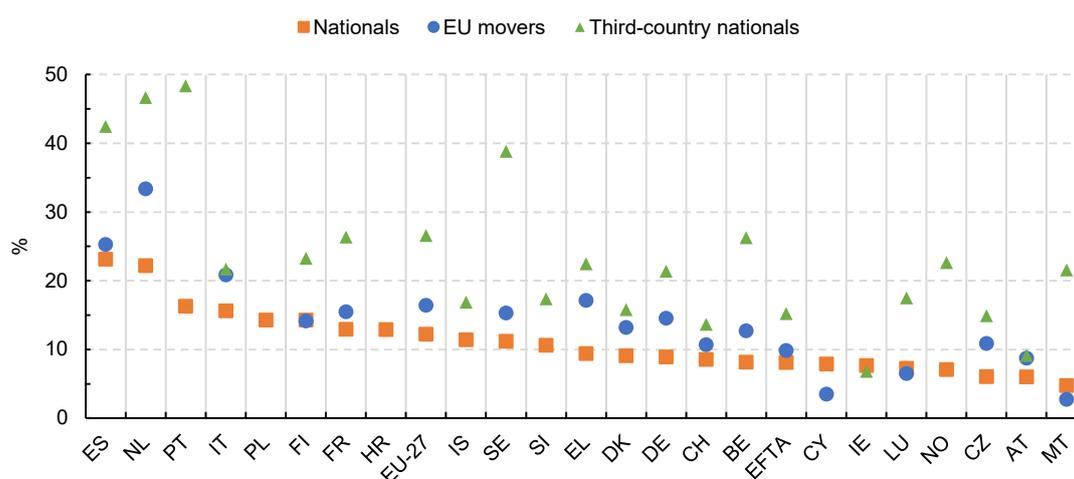
<sup>115</sup> Pietschmann, et al. (2016), 'Key Labor Market Indicators: Analysis with Household Survey Data', International Labor Organisation (ILO), Geneva, p. 13; International Labor Organization (ILO) (2022).

<sup>116</sup> More specifically, Eurostat defines 'work intensity' as 'the ratio between the number of months that household members of working age [...] worked during the income reference year and the total number of months that could theoretically have been worked by the same household members'. Cf. Eurostat (2022f), *Persons living in households with low work intensity* [Online]. Available online: [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Persons\\_living\\_in\\_households\\_with\\_low\\_work\\_intensity](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Persons_living_in_households_with_low_work_intensity) [Accessed 15 September 2022].

<sup>117</sup> Absolute numbers of fixed-term contracts by nationality group in 2016-2021 are shown in Table 25 in Section 2.4.

As mapped out by e.g. the European Migration Network (EMN), challenges to integration of third-country nationals include accreditation of qualifications and assessment of skills and lack of language skills, in addition to the risk of direct or indirect discrimination<sup>118</sup>. All these aspects may make it more difficult to find permanent employment. In Sweden, which has the largest difference in the incidence of fixed-term contracts between EU movers and third-country nationals, low qualifications among the latter have been identified as a barrier, many third-country nationals having only elementary education<sup>119</sup>.

**Figure 31: Share of fixed-term contracts by nationality group in EU and EFTA countries, 2021<sup>120</sup>**



Note: Only Member States where comparison is possible between nationals and at least one more group are included.

Source: EU-LFS 2021, custom extraction by Milieu.

## Part-time employment across nationality groups

The pattern for part-time employees is similar to that of employees on temporary contracts: as shown in Figure 32, the proportion is consistently higher for EU movers and third-country nationals, although the difference has decreased over time.

However, a different pattern emerges on the Member State level. Figure 33 shows that many Member States have significantly higher rates of part-time employment among nationals than movers in 2021. The most notable example is the Netherlands, where 40% of nationals are in part-time employment against 27% of movers. This situation has been noted by e.g. the OECD as being due to 60% of the women in the Netherlands working part-time – three times the OECD average for women and the rate for men in the Member State<sup>121</sup>. However, some large Member States such as Italy, France and Spain have higher proportions of part-time contracts for EU movers.

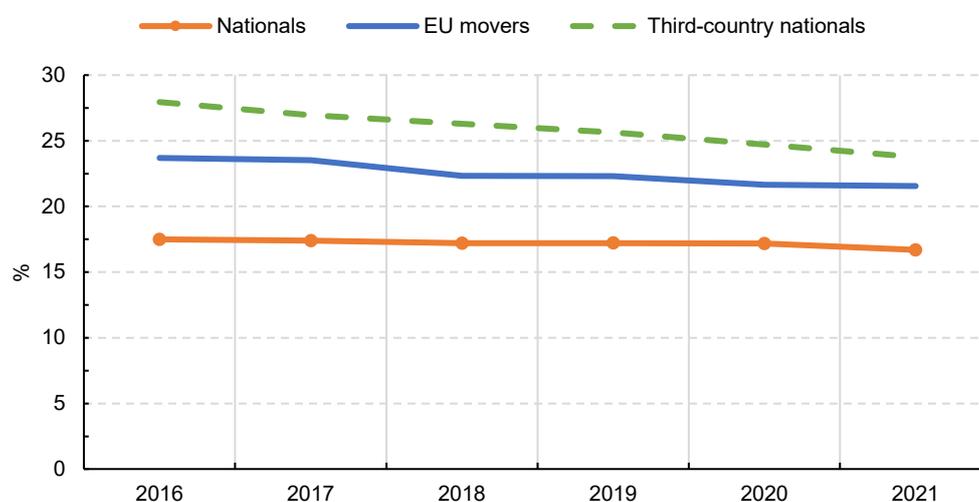
<sup>118</sup> European Migration Network (EMN) (2019), 'Labour Market Integration of Third-Country Nationals in EU Member States', European Migration Network, Brussels.

<sup>119</sup> Swedish Public Employment Service (Arbetsförmedlingen) (2019), 'Arbetsförmedlingens arbetsmarknadsprognos 2019-2021', *Arbetsförmedlingen analys 2019:13*, pp. 33-34.

<sup>120</sup> The number and share of fixed-term contracts by nationality group and country of residence in 2021 are shown in Table 26 in Section 2.4.

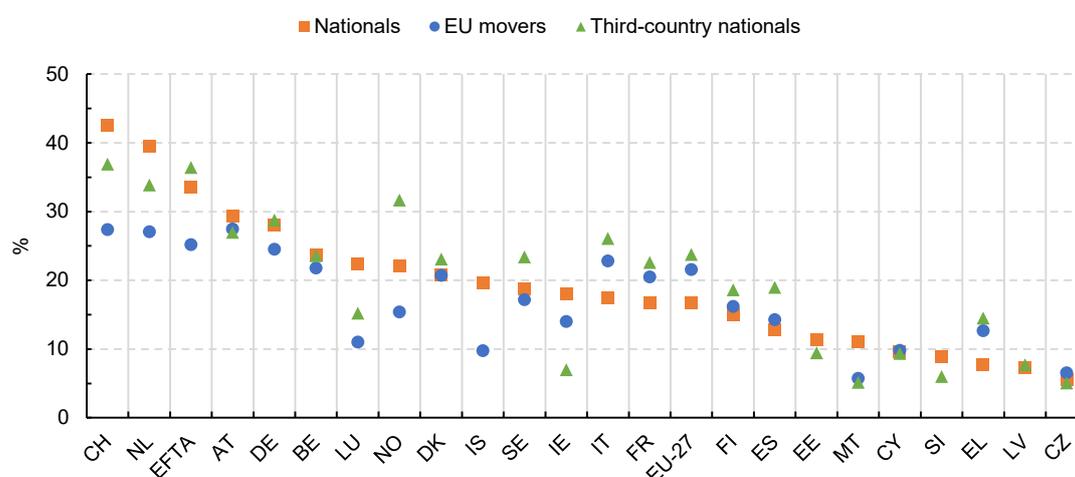
<sup>121</sup> OECD (2019), 'Part-time and Partly Equal: Gender and Work in the Netherlands', *Gender Equality at Work*, OECD, Paris. Gendered patterns of part-time work are further discussed further down in this section.

**Figure 32: Share of part-time employment by nationality group in the EU, 2016-2021<sup>122</sup>**



Source: EU-LFS 2021, custom extraction by Milieu.

**Figure 33: Share of part-time contracts by nationality group in EU and EFTA countries, 2021<sup>123</sup>**



Note: Figure only shows Member States where data allowed for a comparison of nationals and at least one other group in line with Eurostat publication thresholds.

Source: EU-LFS 2021, custom extraction by Milieu.

## 2.3 Determinants to labour market integration

This section investigates how various demographic and socio-economic factors influence the employment rates of nationals, movers, and third-country nationals. Demographically, it considers country of origin, gender, and age group. The section also

<sup>122</sup> The absolute numbers of part-time contracts by nationality group in 2016-2021 are shown in Table 30 in Section 2.4.

<sup>123</sup> The number and share of part-time contracts by nationality group and country of residence in 2021 are shown in Table 27 and Table 28 in Section 2.4.

considers the educational level of movers and the occupation and sectors that they are engaged in.

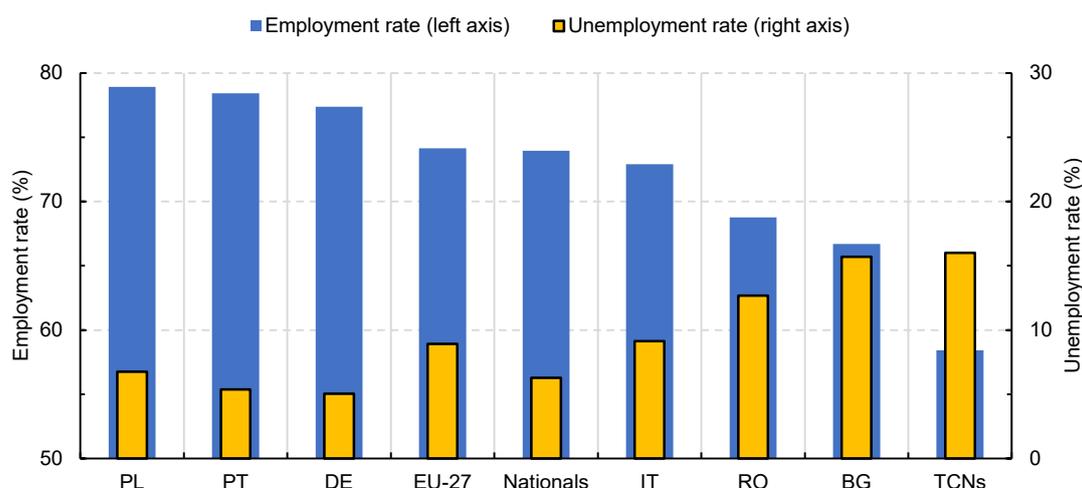
### 2.3.1 Demographic factors

#### Employment and unemployment rate by country of origin

As shown in Section 2.2.1, the employment rate of different nationality groups varies significantly between Member States. Obstacles to employment can originate in a variety of factors. In terms of skills and qualifications, movers may either lack the skills required in the local labour market (e.g. no or insufficient knowledge of the language) or not get full recognition of skills gained elsewhere, resulting in skills mismatches<sup>124</sup>.

The available data does not allow for a full exploration of these themes, and a more extensive discussion of barriers to employment is beyond the scope of this chapter. However, the data does allow for a comparison of the employment and unemployment rates of movers in the EU as a whole.

**Figure 34: Employment and unemployment rates of nationals and of movers by nationality in the EU, 2021**



Note that employment and unemployment rates were only calculated for nationality groups that were sufficiently large to pass the publication threshold. Low reliability for data on unemployed with German and Portuguese citizenship.

Source: EU-LFS 2021, custom extraction by Milieu.

Figure 34 shows the employment and unemployment rate for the largest nationality groups among movers. While comparison is only available for a limited number of nationalities, some patterns can be observed. German and Portuguese movers have slightly higher employment rates than nationals overall and the EU mover average, with Polish movers having the highest employment rate. The lowest employment rate among the nationalities where data is available is found for Romanian and Bulgarian movers.

<sup>124</sup> See e.g. Pellizzari and Fichen (2017), 'A new measure of skill mismatch: theory and evidence from PIAAC', *IZA Journal of Labor Economics*, 6(1); International Labor Organization (ILO) (2014), 'Skills mismatch in Europe', *ILO Statistics Brief*, International Labor Organization (ILO), Geneva. Skills mismatches were also discussed in Chapter 3 of the 2020 intra-EU labour mobility report; cf. Fries-Tersch, et al. (2020), '2020 Annual Report on Intra-EU Labour Mobility', European Commission (DG EMPL), Brussels.

Overall, third-country nationals have lower employment rates than either of the EU nationalities with available data.

## Employment rate of male and female workers

Improving the integration of women in the labour market, thereby increasing both lifetime earnings and overall autonomy, is a recurring goal in EU employment strategy. This has been reflected e.g. in the goals of the 2021-2027 Action plan on Integration and Inclusion<sup>125</sup> and in the 2020-2025 Gender Equality Strategy<sup>126</sup>, and progress on labour market integration – among other goals – is being annually monitored in the report on gender equality in the EU<sup>127</sup>.

The issues surrounding women's participation in the labour market and the challenges they face are thus well mapped, and the issue has a prominent place on the policymaking agenda. In the context of labour mobility, Table 17 shows the male and female employment rate by nationality group on an EU aggregate level.

**Table 17: Employment rate of EU movers by gender and nationality group in the EU, 2021<sup>128</sup>**

	Gender	2016	2017	2018	2019	2020	2021
<b>Nationals</b>	Female	65	66	68	68	68	69
	Male	76	78	79	79	78	79
	Difference	11	11	11	11	11	10
<b>EU movers</b>	Female	65	66	67	68	65	67
	Male	80	81	83	83	80	82
	Difference	15	15	16	15	15	16
<b>Third-country nationals</b>	Female	45	46	47	47	45	47
	Male	66	67	70	72	70	71
	Difference	22	22	23	25	25	24

Source: EU-LFS 2021, custom extraction by Milieu.

There are two main findings. First, men consistently have higher employment rates across the three nationality groups; second, the difference in employment rates is biggest for third-country nationals and lowest for nationals. For movers, the differences between Member States are significant, as shown in Figure 35: the largest difference is found in Greece with a 27 percentage point difference in favour of men. Italy and Czechia have the next-highest gaps at 24 and 21 percentage points, respectively. Luxembourg has the smallest gap, with male movers' employment rate only 4 percentage points higher.

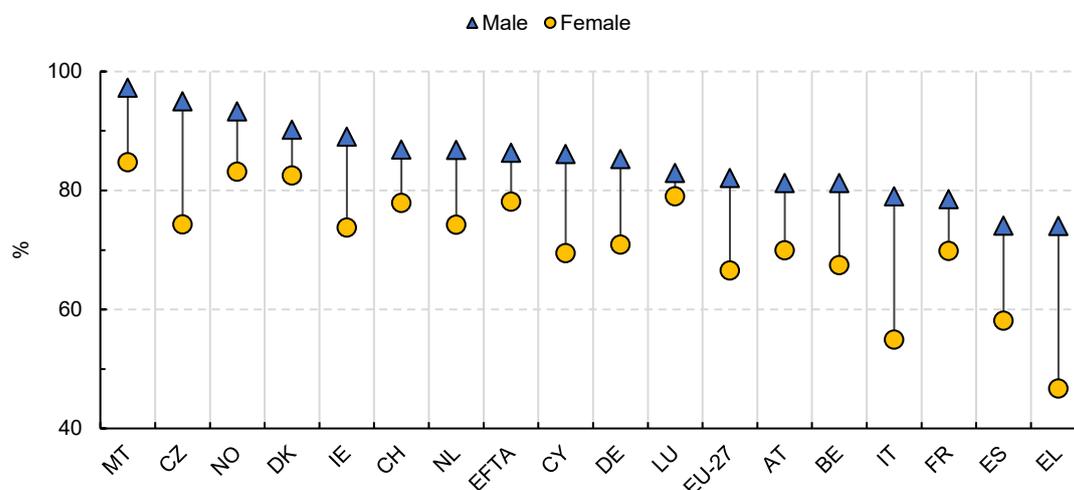
<sup>125</sup> Communication COM(2020) 758 from the Commission on the Action plan on Integration and Inclusion 2021-2027.

<sup>126</sup> Communication COM(2020) 152 from the Commission on A Union of Equality: Gender Equality Strategy 2020-2025.

<sup>127</sup> European Commission (2022a), '2022 report on gender equality in the EU', European Commission (DG JUST), Brussels.

<sup>128</sup> The employment rate of male and female EU movers in EU and EFTA countries in 2016-2021 is shown in Table 61 in Annex C.2.

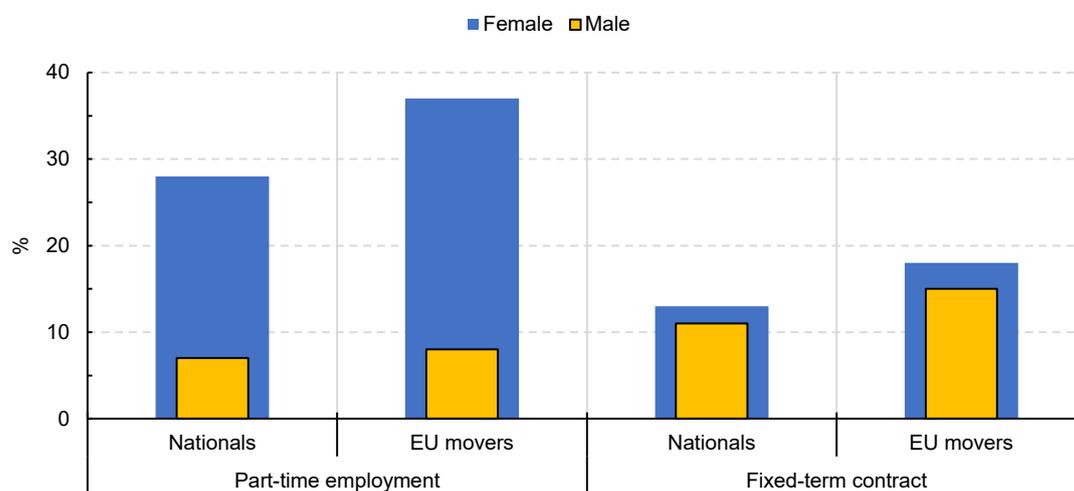
**Figure 35: Employment rate of EU movers by gender in selected EU and EFTA countries, 2021<sup>129</sup>**



Note: Figure only shows Member States where data allowed for a comparison of nationals and at least one other group in line with Eurostat publication thresholds. Low reliability for females in Luxembourg and Ireland, and for men in Greece and Ireland.

Source: EU-LFS 2021, custom extraction by Milieu.

**Figure 36: Part-time employment and fixed-term contracts by nationality group and gender in the EU, 2021**



Source: EU-LFS 2021, custom extraction by Milieu.

Following on the discussion in Section 2.2.3 on contractual and working time arrangements, EU-LFS data indicates that there are no major differences between nationals and EU movers regarding the share of female vs. male employees with fixed contracts: for both nationality groups, the difference is a few percentage points. However, as shown in Figure 36, female employees are strongly overrepresented in part-time work

<sup>129</sup> The employment rate of male and female EU movers in EU and EFTA countries in 2016-2021 is shown in Table 61 in Annex C.2.

for both nationals (28% vs. 7%) and EU movers (37% vs 8%). The gap is therefore bigger for movers. These proportions have not significantly changed since at least 2016.

As noted earlier in this section, the Netherlands stands out as the Member State with the highest rate of part-time work for female employees. In 2021, this stands at 64% for female nationals (vs. 18% for male nationals), and 41% for female EU movers (vs. 14% for male movers). However, similarly high proportions of female part-time workers are seen in Switzerland (50% among movers, 66% among nationals), Germany (45% among movers, 48% among nationals) and Austria (44% among movers, 51% among nationals). There is no Member State where part-time employment is more common for male than for female employees.

## Employment rate by age group

Another group facing possible difficulties in (re-)integrating to the labour market are older individuals. If older individuals find themselves looking for work, they may struggle to e.g. match their pre-existing skills and experience to a developing labour market, especially in relation to digital skills<sup>130</sup>. There is also a risk of age-based discrimination, whereby older jobseekers are overlooked, or are at higher risk of being laid off<sup>131</sup>. These barriers are in addition to those relating to origin and gender discussed above.

**Table 18: Employment, unemployment and activity rates nationality group and age group in the EU, 2021**

	Indicator	20 - 34 years	35 - 49 years	50 - 64 years
<b>Nationals</b>	Employment rate	69	83	66
	Unemployment rate	10	6	5
	Activity rate	77	88	69
<b>EU movers</b>	Employment rate	72	79	68
	Unemployment rate	10	9	9
	Activity rate	80	86	75
<b>Third-country nationals</b>	Employment rate	68	77	65
	Unemployment rate	13	9	8
	Activity rate	77	85	71

Source: EU-LFS 2021, custom extraction by Milieu.

Table 18 shows the employment, unemployment and activity rates for nationals, EU movers and third-country nationals. A common finding across all nationality groups is that workers in the middle working age group (35-49 years) have the highest level of employment, while the oldest age group (50-64 years) have the lowest. Activity rates are

<sup>130</sup> See e.g. the indicators of the Digital Economy and Society Index (DESI), which indicate that the level of digital skills progressively decreases with age: European Commission (2022b), *The Digital Economy and Society Index (DESI)* [Online]. Brussels: European Commission (DG CONNECT). Available online: <https://digital-strategy.ec.europa.eu/en/policies/desi> [Accessed 28 July 2022].

<sup>131</sup> In a 2019 Eurobarometer survey, 4% of workers in the then-EU-28 responded that they had experienced discrimination based on their age (young or old), but 40% indicated that they believed age-based discrimination to be fairly or very widespread; cf. European Commission (2019), 'Discrimination in the European Union', *Special Eurobarometer 493*, European Commission (DG JUST), Brussels, p. 23.

also lowest for the oldest age group, reflecting a larger proportion of individuals who have left the labour market due to e.g. retirement or illness.

## 2.3.2 Socio-economic factors

### Education level

An individual's education level, understood as their highest attained education<sup>132</sup>, contributes to their ability to find employment as well as what kind of jobs are available. Whether a mover has high, medium or low educational attainment may therefore have a significant effect on their labour market integration. As shown in Table 11, circa one-third of all movers and nationals have high education attainment in 2021, a proportion that has increased at a steady rate since 2016. However, nationals have a lower proportion of individuals with low educational attainment. This contrast is amplified for third-country nationals where about one-quarter have high educational attainment, and almost half have low educational attainment.

**Table 19: Educational attainment by nationality group in the EU, 2016-2021**

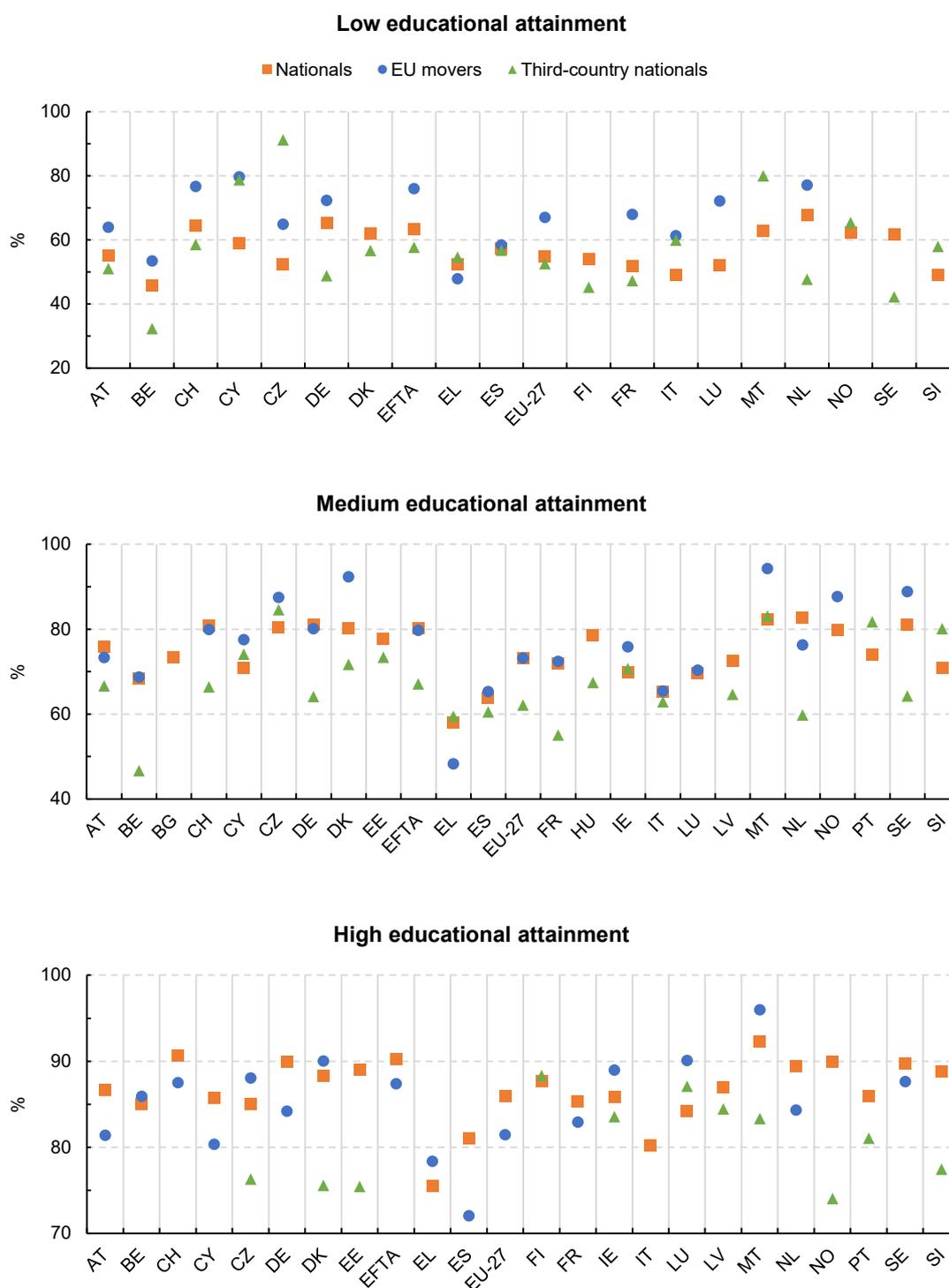
	2016	2017	2018	2019	2020	2021	Trend
<b>Nationals (%)</b>							
Low	21	21	20	19	19	18	
Medium	50	50	50	50	49	49	
High	28	29	30	31	32	33	
<b>EU movers (%)</b>							
Low	29	28	28	28	27	28	
Medium	43	43	42	42	40	40	
High	28	29	29	30	32	32	
<b>Third-country nationals (%)</b>							
Low	48	48	47	46	46	46	
Medium	31	31	30	30	30	29	
High	20	22	22	23	24	24	

Note: Percentages indicate the share of working age individuals which have that educational attainment in the specified nationality group. Dots in the trend lines indicate the highest and lowest values in the reference period. Smaller sectors have been excluded from the table. 'Low' educational attainment refers to ISCED levels 0-2 (early childhood, primary and lower secondary education); 'medium' refers to ISCED levels 3-4 (upper secondary and post-secondary non-tertiary education); and 'high' refers to ISCED levels 5-8 (short-cycle tertiary education and tertiary education at Bachelor, Master's or Doctoral level).

Source: EU-LFS 2021, custom extraction by Milieu.

<sup>132</sup> The terminology in this study follows that of the International Standard Classification of Education (ISCED), as operationalised by e.g. Eurostat as follows: 'low' educational attainment refers to ISCED levels 0-2 (early childhood, primary and lower secondary education); 'medium' refers to ISCED levels 3-4 (upper secondary and post-secondary non-tertiary education); and 'high' refers to ISCED levels 5-8 (short-cycle tertiary education and tertiary education at Bachelor, Master's or Doctoral level). For more information, cf. Eurostat (2022e), 'International Standard Classification of Education (ISCED)', Eurostat, Luxembourg.

**Figure 37: Employment rate by nationality group and educational attainment in selected EU and EFTA countries, 2021<sup>133</sup>**



Source: EU-LFS 2021, custom extraction by Milieu.

<sup>133</sup> Low reliability for - **Low education**: nationals in Luxembourg and Slovenia; EU movers in Czechia, Greece, Luxembourg, and the Netherlands; and for third-country nationals in Finland and Malta. **Medium education**: EU movers in Czechia, Greece, Ireland, Malta, and the Netherlands; and for third-country nationals in Latvia, Malta, the Netherlands, and Slovenia. **High education**: nationals in Malta; EU movers in Cyprus, Denmark, Germany, and

When considering the employment rate of nationals, EU movers and third-country nationals by education attainment, some patterns are nevertheless found in the data<sup>134</sup>. Figure 37 presents the employment rates by nationality – where data was available – and educational attainment.

Among nationals the employment rate of individuals with **low educational attainment** varies from 46% in Belgium to 68% in the Netherlands. EU movers with low educational attainment generally have higher levels of employment, than the nationals, with the biggest gaps in Luxembourg and Cyprus. On an EU aggregate level, the employment rate is higher than for nationals. Third-country nationals with low educational attainment have a lower employment rate in all cases except Malta, Italy and Slovenia, and an even higher rate in Czechia. The lowest employment rates for third-country nationals with low educational attainment is found in Belgium (32%) and Sweden (42%).

This pattern remains largely the same for individuals with **medium educational attainment**, with generally lower employment rates for third-country nationals and EU movers either having the same or higher employment rate as nationals.

Among nationals, individuals with **high educational attainment** generally have very high levels of employment. Nationals in this education category have higher employment rates than movers in all Member States with available data except for Belgium, Czechia, Denmark, Greece, Luxembourg, Malta and Ireland. The only instances where third-country nationals have higher employment rates is in Finland and Luxembourg.

## Occupation in employment

As shown in Figure 38, EU movers are overrepresented in elementary occupations, in craft and related trades, and as plant and machine operators. Compared to movers, a larger proportion of nationals work as professionals, technicians and associate professionals, and clerical support workers. The pattern for third-country nationals is essentially the same, albeit they are more overrepresented among elementary occupations, and more under-represented among professional occupations, etc. This is broadly in line with what would be expected based on the findings regarding the share of movers and third-country nationals in part-time work and on temporary contracts, as well as the overall education profile of the two groups.

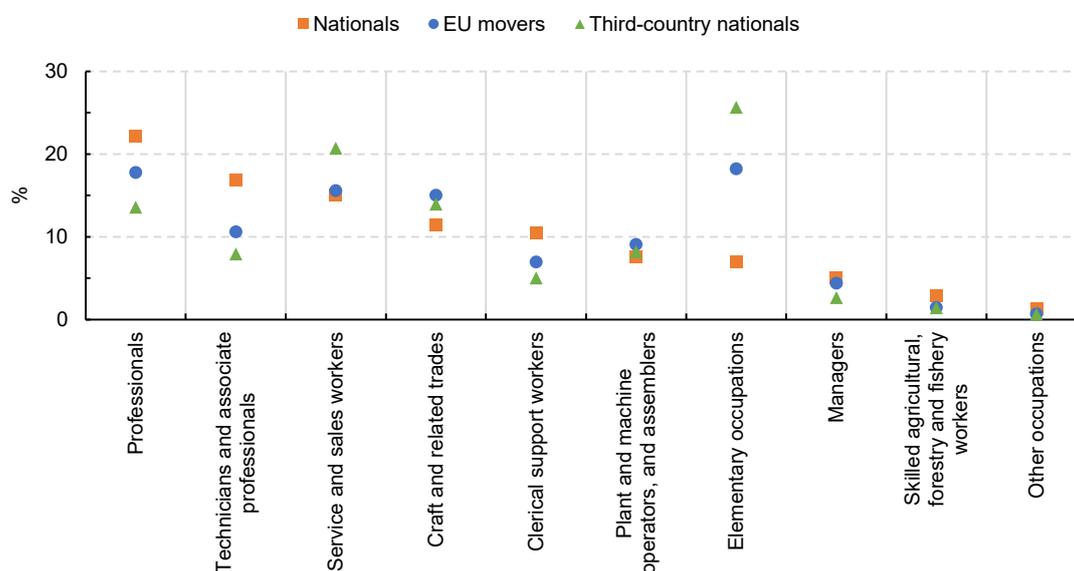
For EU movers the distribution across occupations has remained relatively steady over time, as shown in Table 20. All but one occupational category saw significant decreases in 2020 as a result of the COVID-19 pandemic and associated restrictions on movement and the operation of businesses<sup>135</sup>. The exception is for professional occupations, where the number of employed movers has increased at a largely linear pace since 2016, leading to it now being the second largest occupation for movers. Overall, this indicates a situation where over time, movers are more qualified and work in occupations requiring more training.

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Sweden; and for third-country nationals in Czechia, Denmark, and Norway. The exact shares for each level of educational attainment, nationality group and country are shown in Table 62 in Annex C.2.

<sup>134</sup> The following discussion is based on classifications of educational attainment based on ISCED categories. ‘Low educational attainment’ refers to ISCED levels 0-2 (early childhood, primary and lower secondary education); ‘Medium’ to ISCED levels 3-4 (upper secondary and post-secondary non-tertiary education); and ‘High’ to ISCED levels 5-8 (short-cycle tertiary education and tertiary education at Bachelor, Master’s or Doctoral level).

<sup>135</sup> The impact of the COVID-19 pandemic on intra-EU labour mobility was discussed in Chapter 3 of the 2021 report; cf. Fries-Tersch, et al. (2022).

**Figure 38: Employees by nationality group and occupation in the EU, 2021**


Note that some smaller occupations are aggregated under the category 'Other occupations'.

Source: EU-LFS 2021, custom extraction by Milieu.

**Table 20: EU movers by occupation in employment in the EU, 2016-2021**

	2016	2017	2018	2019	2020	2021	Trend
<b>Employed working-age movers (thousands)</b>							
Elementary occupations	1162	1174	1215	1252	1080	1084	
Professionals	783	830	894	948	1021	1057	
Service and sales workers	942	956	997	1026	909	927	
Craft and related trades	882	911	978	975	864	895	
Technicians and associate professionals	547	560	610	665	629	632	
Plant and machine operators, and assemblers	430	488	519	552	504	540	
Clerical support workers	325	355	373	388	357	415	
Managers	227	231	245	273	225	263	
Skilled agricultural, forestry and fishery workers	84	91	99	99	86	89	
<b>Change compared to previous reference year (%)</b>							
Elementary occupations		1	3	3	-14	0	
Professionals		6	8	6	8	4	
Service and sales workers		1	4	3	-11	2	
Craft and related trades		3	7	0	-11	4	
Technicians and associate professionals		2	9	9	-5	0	
Plant and machine operators, and assemblers		14	6	6	-9	7	
Clerical support workers		9	5	4	-8	16	
Managers		2	6	11	-18	17	
Skilled agricultural, forestry and fishery workers		9	8	0	-12	3	

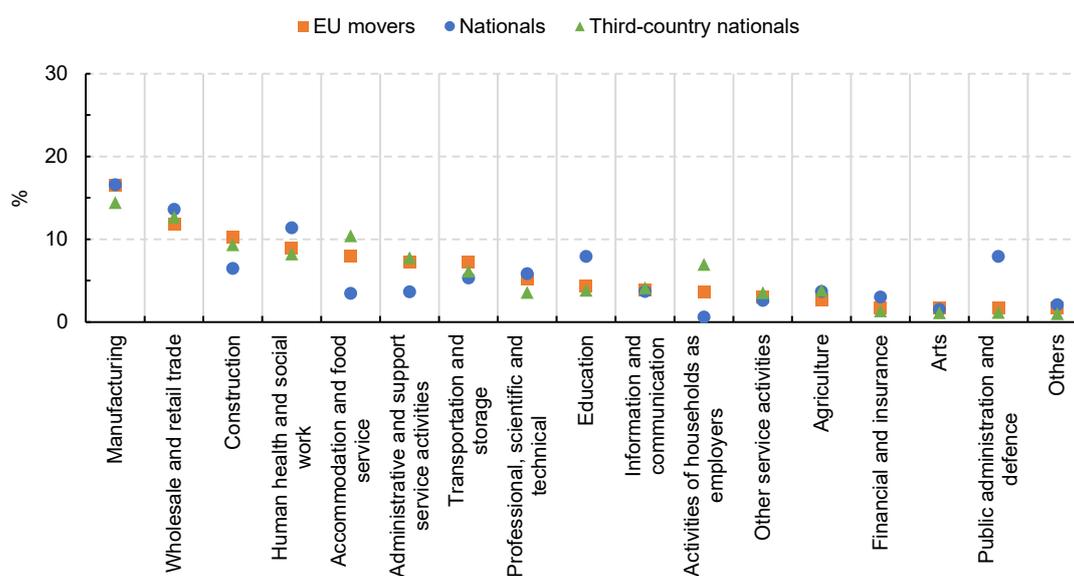
Note: Dots in the trend lines indicate the highest and lowest values in the reference period. Smaller sectors have been excluded from the table.

Source: EU-LFS 2021, custom extraction by Milieu.

## Economic sector in employment

The distribution of EU movers by sector in 2021 is substantially similar to previous years. As shown in Figure 39, manufacturing is the largest sector of employment for EU movers (16%). Other significant employer sectors are wholesale and retail trade (12%) and construction (10%). Overall, movers are most overrepresented relative to nationals in administrative and support services; accommodation and food services; and construction. Nationals in turn are overrepresented in public administration and defence; and in education. Broadly, the same pattern holds true also for third-country nationals.

**Figure 39: Employees by nationality group and economic sector in the EU, 2021**



Note that some smaller sectors are aggregated under the category 'Others'.

Source: EU-LFS 2021, custom extraction by Milieu.

**Table 21: EU movers by economic sector of employment in the EU, 2016-2021**

	2016	2017	2018	2019	2020	2021	Trend
<b>Employed working-age movers (thousands)</b>							
Accommodation and food service	577	576	599	613	494	467	
Transportation and storage	296	339	371	418	355	423	
Professional	234	244	263	280	300	303	
Information and communication	152	166	186	195	205	224	
Activities of households as employers	329	314	308	287	245	214	
Other service activities	120	134	145	154	156	175	
Agriculture	194	185	175	186	147	158	
<b>Change compared to previous reference year (%)</b>							
Accommodation and food service		0	4	2	-19	-5	
Transportation and storage		14	9	13	-15	19	
Professional		4	8	6	7	1	
Information and communication		9	12	5	5	10	
Activities of households as employers		-5	-2	-7	-15	-13	
Other service activities		12	8	7	1	12	
Agriculture		-4	-6	6	-21	7	

Note: Dots in the trend lines indicate the highest and lowest values in the reference period. Only NACE1D sectors with significant differences in 2016-2021 are included.

Source: EU-LFS 2021, custom extraction by Milieu.

In terms of trends over time, Table 21 shows the number of EU movers in the seven sectors with the biggest relative change in the 2016-2021 period. Of particular note are the significant decreases in the number of movers in accommodation and food services and agriculture, both significantly affected by the economic downturn and restrictions imposed by the COVID-19 pandemic in 2020-2022<sup>136</sup>. A 2021-specific decrease is similarly seen for transport, with many transport services, freight services and hauliers restricted in their operations during the pandemic<sup>137</sup>. There is also a longer-term decrease in the number of movers employed in activities of households as employers, i.e. home-based occupations such as domestic cleaners and child minders.

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<sup>136</sup> Some of the vulnerability of these sectors is rooted in their seasonal nature. The effect of the COVID-19 pandemic on seasonal work has been discussed extensively in Fries-Tersch, et al. (2021).

<sup>137</sup> This has been discussed e.g. in Mack, et al. (2021), 'The impacts of the COVID-19 pandemic on transportation employment: A comparative analysis', *Transport Research Interdisciplinary Perspectives*, 12.

## 2.4 Supplementary tables

**Table 22: Self-employed by nationality group, EU 2016-2021**

	2016	2017	2018	2019	2020	2021
<b>Nationals (1 000s and %)</b>						
<b>Employee</b>	145 476 (86%)	147 517 (86%)	148 927 (86%)	149 886 (86%)	147 700 (86%)	149 714 (87%)
<b>Self-employed with employees</b>	7 525 (4%)	7 518 (4%)	7 424 (4%)	7 418 (4%)	6 935 (4%)	7 317 (4%)
<b>Self-employed without employees</b>	17 007 (10%)	16 848 (10%)	16 752 (10%)	16 768 (10%)	16 656 (10%)	15 867 (9%)
<b>EU movers (1 000s and %)</b>						
<b>Employee</b>	4 754 (90%)	4 969 (90%)	5 258 (90%)	5 479 (90%)	5 011 (96%)	5 230 (92%)
<b>Self-employed with employees</b>	119 (2%)	121 (2%)	138 (2%)	154 (3%)	28 (1%)	80 (1%)
<b>Self-employed without employees</b>	407 (8%)	411 (7%)	437 (7%)	474 (8%)	189 (4%)	366 (6%)
<b>Third-country nationals (1 000s and %)</b>						
<b>Employee</b>	5 679 (89%)	6 095 (90%)	6 558 (90%)	6 975 (90%)	6 836 (94%)	7 095 (91%)
<b>Self-employed with employees</b>	186 (3%)	171 (3%)	206 (3%)	221 (3%)	120 (2%)	180 (2%)
<b>Self-employed without employees</b>	522 (8%)	511 (8%)	501 (7%)	581 (7%)	325 (4%)	500 (6%)

Note: Percentages in brackets indicate the proportion of workers in each nationality category in that employment form.

Source: EU-LFS 2021, custom extraction by Milieu.

**Table 23: Self-employment by sector and nationality group, EU 2021 (%)**

	Nationals	EU movers	Third-country nationals
<b>A: Agriculture</b>	15		
<b>C: Manufacturing</b>	7	5	4
<b>E: Water supply, sewerage and sanitation</b>	0.2		
<b>F: Construction</b>	12	28	18
<b>G: Wholesale and retail trade</b>	15	13	28
<b>H: Transportation and storage</b>	4		5
<b>I: Accommodation and food services</b>	5	11	20
<b>J: Information and communication</b>	4	4	2
<b>K: Financial and insurance</b>	2		
<b>L: Real estate</b>	2		
<b>M: Professional</b>	13	13	6
<b>N: Administrative and support services</b>	3	5	3
<b>O: Public administration and defence</b>	0.1		
<b>P: Education</b>	2	5	4
<b>Q: Human health and social services</b>	7	8	
<b>R: Arts</b>	2	3	
<b>S: Other service activities</b>	6	5	9
<b>T: Activities of households as employers</b>	0.3		

Note: Sectors without sufficient data are omitted from the table. The values indicate the share of self-employed workers of the nationality that are active in a specific sector.

Source: EU-LFS 2021, custom extraction by Milieu.

**Table 24: Proportion of self-employed by nationality group and country of residence, 2021**

	Nationals			EU movers			Third-country nationals		
	2020	2021	Diff. (Pps)	2020	2021	Diff. (Pps)	2020	2021	Diff. (Pps)
<b>EU-27</b>	14	13	-1	4	8	+4	6	9	+3
<b>AT</b>	11	10	-1						
<b>BE</b>	13	13	0	11	8	-4			
<b>BG</b>	9	9	0						
<b>CY</b>	12	8	-4		(2)		(3)	(2)	-1
<b>CZ</b>	16	15	-1	8	10	+2	21	25	+4
<b>DE</b>	7	7	0		(2)			(1)	
<b>DK</b>	7	7	0						
<b>EE</b>	9	9	0						
<b>EL</b>	29	29	0				8	12	+4
<b>ES</b>	15	15	0	16	17	+1	13	13	0
<b>FI</b>	11	11	0						
<b>FR</b>	12	12	0	7	5	-2	5	6	+1
<b>HR</b>	11	11	0						
<b>HU</b>	11	11	0						
<b>IE</b>	11	9	-2						
<b>IT</b>	21	21	0	8	7	-1	12	12	0
<b>LT</b>	10	10	0						
<b>LU</b>	3	(3)	0	2	(1)	-1			
<b>LV</b>	11	9	-2						
<b>MT</b>	12	12	0	13	(5)	-8	6	9	+3
<b>NL</b>	17	15	-2	11	11	0	4	4	0
<b>PL</b>	18	18	0						
<b>PT</b>	12	12	0						
<b>RO</b>	16	11	-4						
<b>SE</b>	8	8	0						
<b>SI</b>	11	12	+1				(1)	(3)	+2
<b>SK</b>	14	12	-2						
<b>EFTA</b>	9	8	-1		1				

	Nationals			EU movers			Third-country nationals		
	2020	2021	Diff. (Pps)	2020	2021	Diff. (Pps)	2020	2021	Diff. (Pps)
CH	13	13	0	6	8	+2	3	7	+4
IS	10	11	+1						
NO	3	2	-1	4					

Note: The table indicates the proportion of all workers in the nationality group that are self-employed, either with or without employees. Figures of low reliability are indicated in brackets. Blank cells indicate where values are too small to publish.

Source: EU-LFS 2021, custom extraction by Milieu.

**Table 25: Permanent and fixed-term contracts by nationality group, EU 2016-2021**

Nationality	Contract type	2016	2017	2018	2019	2020	2021
Nationals	Fixed	20 338 (14%)	20 665 (14%)	20 417 (14%)	19 625 (13%)	17 424 (12%)	18 257 (12%)
	Permanent	125 048 (86%)	126 744 (86%)	128 434 (86%)	130 185 (87%)	130 375 (88%)	131 324 (87%)
EU movers	Fixed	905 (19%)	943 (19%)	974 (19%)	939 (17%)	806 (16%)	860 (16%)
	Permanent	3 840 (81%)	4 011 (81%)	4 271 (81%)	4 525 (83%)	4 295 (84%)	4 373 (84%)
Third-country nationals	Fixed	1 390 (24%)	1 599 (26%)	1 839 (28%)	1 943 (28%)	1 799 (26%)	1 887 (27%)
	Permanent	4 287 (76%)	4 484 (74%)	4 704 (72%)	5 020 (72%)	5 118 (74%)	5 208 (73%)

Note: Percentages in brackets indicate the proportion of workers of each nationality in that employment form.

Source: EU-LFS 2021, custom extraction by Milieu.

**Table 26: Number of fixed-term contracts and share of all workers by nationality group in EU and EFTA countries, 2021**

	Nationals (%)			EU movers (%)			Third-country nationals (%)		
	2020	2021	Diff. (Pps)	2020	2021	Diff. (Pps)	2020	2021	Diff. (Pps)
EU-27	12	12	0	16	16	1	26	27	1
AT	5	6	1	8	9	1	7	9	2
BE	8	8	0	13	13	-1	25	26	1
BG	3	3	0						0
CY	8	8	0	8	(3)	-4	56	58	2
CZ	7	6	0	14	11	-3	18	15	-3

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	Nationals (%)			EU movers (%)			Third-country nationals (%)		
	2020	2021	Diff. (Pps)	2020	2021	Diff. (Pps)	2020	2021	Diff. (Pps)
DE	8	9	1	13	15	2	21	21	0
DK	9	9	0	10	13	3	15	16	1
EE	2	1	-1						0
EL	9	9	0	(16)	(17)	1	24	22	-1
ES	22	23	1	28	25	-3	41	42	2
FI	13	14	1		14	14	21	23	2
FR	13	13	0	14	15	2	28	26	-2
HR	15	13	-2						0
HU	6	6	0						0
IE	8	8	0					7	7
IT	14	16	1	19	21	2	21	22	1
LT	1	2	1						0
LU	6	7	2	7	7	-1	11	17	7
LV	3	2	0						0
MT	5	5	0	11	(3)	-8	19	22	3
NL	14	22	8	21	33	12	29	47	17
PL	18	14	-4				41		-41
PT	17	16	0				37	48	12
RO	1	2	1						0
SE	12	11	0	17	15	-1	42	39	-3
SI	10	11	1				17	17	0
SK	6	4	-2						0
EFTA	7	8	1	9	10	1	16	15	-1
CH	8	9	0	10	11	1	15	14	-1
IS	7	11	4					17	17
NO	6	7	1				18	23	5

Note: The table shows the proportion of all workers of that nationality that held fixed-term contracts in the given year. Brackets indicate figures of low reliability.

Source: EU-LFS 2021, custom extraction by Milieu.

**Table 27: Part-time contracts by nationality group, EU 2016-2021**

Nationality	Contract type	2016	2017	2018	2019	2020	2021
Nationals	Full-time	141 933 (83%)	143 593 (83%)	144 866 (83%)	145 571 (83%)	143 623 (83%)	145 157 (83%)
	Part-time	30 094 (17%)	30 236 (17%)	30 090 (17%)	30 253 (17%)	29 782 (17%)	29 072 (17%)
EU movers	Full-time	4 124 (76%)	4 292 (76%)	4 620 (78%)	4 818 (78%)	4 554 (78%)	4 665 (78%)
	Part-time	1 281 (24%)	1 320 (24%)	1 328 (22%)	1 382 (22%)	1 259 (22%)	1 282 (22%)
Third-country nationals	Full-time	4 694 (72%)	5 046 (73%)	5 446 (74%)	5 869 (74%)	5 889 (75%)	6 112 (76%)
	Part-time	1 821 (28%)	1 862 (27%)	1 944 (26%)	2 022 (26%)	1 934 (25%)	1 904 (24%)

Note: Percentages in brackets indicate the proportion of workers in each nationality category in that employment form.

Source: EU-LFS 2021, custom extraction by Milieu.

**Table 28: Share of part-time contracts by nationality group, 2020-2021**

	Nationals			EU movers			Third-country nationals		
	2020	2021	Diff. (Pps)	2020	2021	Diff. (Pps)	2020	2021	Diff. (Pps)
EU-27	17	17	0	22	22	0	25	24	-1
AT	28	29	2	27	27	1	27	27	0
BE	24	24	0	22	22	0	26	24	-2
BG	2	1	0						
CY	10	10	0	8	10	1	12	9	-2
CZ	6	6	0	5	7	1	(4)	5	1
DE	28	28	0	23	25	1	31	29	-2
DK	20	21	1	18	21	3	24	23	-1
EE	12	11	0				11	9	-2
EL	8	8	0	(10)	(13)	3	15	15	-1
ES	13	13	0	17	14	-3	19	19	0
FI	13	15	2		16	16	22	19	-3
FR	17	17	0	20	21	1	23	23	0
HR	5	5	0						
HU	5	4	0						
IE	17	18	1	12	14	2	(7)	(7)	0

	Nationals			EU movers			Third-country nationals		
	2020	2021	Diff. (Pps)	2020	2021	Diff. (Pps)	2020	2021	Diff. (Pps)
IT	17	17	0	23	23	-1	27	26	-1
LT	6	6	0						
LU	21	22	1	14	11	-3	14	15	1
LV	9	7	-1				(6)	(8)	2
MT	10	11	1	15	6	-9	7	5	-1
NL	48	40	-8	39	27	-12	42	34	-8
PL	6	5	-1						
PT	7	7	0				8		
RO	6	4	-2						
SE	20	19	-2	22	17	-5	30	23	-6
SI	8	9	1				(5)	(6)	1
SK	4	3	-1						
EFTA	35	34	-1	25	25	0	34	36	2
CH	44	42	-1	27	27	1	33	37	4
IS	20	20	-1		10				
NO	23	22	-1	18	15	-3	37	32	-5

Note: The table shows the proportion of all workers of that nationality that held part-term contracts in the given year. Brackets indicate figures of low reliability.

Source: EU-LFS 2021, custom extraction by Milieu.

## 3 Cross-border workers in the EU and EFTA

### 3.1 Introduction

This chapter analyses cross-border and frontier work. It starts off by describing the framework and clarifying concepts and data sources. It then proceeds by outlining levels and trends of cross-border workers (and their demographic and socio-economic characteristics) in 2021 and over time since 2016. The chapter subsequently concentrates on the specific context of the largest regions of cross-border work in the EU and EFTA and a comparison of the profiles of frontier workers active there. The chapter closes with considerations on institutional, economic, and cultural factors influencing cross-border work.

#### Key findings

##### *Overall findings*

- There are 1.7 million cross-border workers active in the EU and EFTA in 2021. The main countries of destination are Germany, Switzerland and Luxembourg, which together attract almost 60% of all cross-border workers.
- The largest macro-regions of cross-border movements are: the Alpine region (incl. bordering regions between France, Switzerland and Italy), the Upper-Rhine region (France, Switzerland and Italy) and the Greater Region<sup>138</sup> (France, Belgium, Luxembourg and Germany). Together they account for almost 50% of all flows.
- Cross-border movements experienced a dip in 2020 in the course of the COVID-19 pandemic. This was likely of temporary nature as figures picked up again in 2021.

##### *Characteristics of cross-border workers and trend over time*

- 1.1 million cross-border workers are men (70% of the total). This is not surprising considering that a high share of cross-border workers are employed in manufacturing and construction, which are typically male-dominated. Those industries employ around 700 000 cross-border workers (46% of the total).
- Important services for cross-border work are transportation and storage, and wholesale and retail trade, employing 258 000 cross-border workers (20% of the total). Among women, important services are human health and social work (111 000, 78% women), education (16 000, 52%) and accommodation and food services (35 000, 50%).

<sup>138</sup> The 'Greater Region' also commonly goes by 'Grande Région' (in French) and 'Großregion' (in German). Throughout this chapter, the term 'Greater Region' is used to avoid confusion.

- Most cross-border workers (690 000, 42% of the total) are between 35 and 49 years old. This share is rather similar to employed EU movers (45%) and nationals not engaging in intra-EU labour mobility (39%).
- 900 000 cross-border workers (54%) have medium educational attainment; for high and low educational attainment, the numbers are 567 000 (34%) and 194 000 (12%). Compared to employed EU movers and nationals, cross-border workers are more likely to hold medium education (54% vs 39% of EU movers and 49% of nationals).
- A high share of cross-border workers are active in craft and related trade occupations (381 000, 24%). This is a notably higher proportion than either employed EU movers (15%) or nationals (12%) in these occupations. Women engaging in cross-border work are overrepresented in clerical support (49 000 are women or 60%) and services and sales (80 000 or 59%).
- Looking at trends over time, the population of cross-border workers is ageing; those above 50 years increased from 23% in 2016 to 27% in 2021 (+60 000), while those below 35 years decreased from 34% to 31% (-52 000).
- Similarly to employed EU movers and nationals, the level of skills among cross-border workers is increasing. Those with high education rose from 28% to 34% between 2016 and 2021 (+ 93 000), and those employed in jobs related to professional occupations, which require a high degree of training and specialised knowledge, rose from 14% to 18% (+ 51 000).

### Comparing macro-regions of cross-border work

- Besides the Alpine and Greater Region, other macro-regions hosting significant movements are the Upper Rhine region (incl. bordering regions between Switzerland, France and Germany), the Meuse-Rhine region (Netherlands, Belgium and France), the Tri-border region (Germany, Poland and Czechia) and the Centrope region (Austria, Hungary, Slovakia and Czechia). Together they host 70% of all flows in the EU and EFTA.
- The majority of the flows are uni-directional towards the regions enjoying higher levels of economic development (in Austria, Luxembourg and Switzerland). Indications of bi-directional flows can however be found in the Meuse-Rhine macro-region.
- Manufacturing and construction are particularly important among cross-border workers going to Austria and Germany, generally having low to medium education levels. Workers to Luxembourg, Belgium and Switzerland are instead mostly employed in service-related activities, including those requiring high skills, such as professional scientific and technical activities and financial and insurance services.
- While several factors influence the extent and nature of cross-border work (e.g. socio-cultural and economic aspects), one key facilitator of cross-border movements of workers is the institutional cooperation among border regions. This is particularly strong in certain macro-regions (e.g. Upper-Rhine and Greater Region) resulting in relatively high labour market integration and a

solid support network; other macro-regions stand out as having fewer frameworks of institutional collaboration (notably in Centropo).

## 3.2 Background on cross-border work in Europe

Within the EU and EFTA countries to which free movement of workers applies<sup>139</sup>, workers can simultaneously reside in one country and work in another. Cross-border work is thereby one of the manifestations of the freedom of movement and work that is enshrined in Art. 45 of the European Charter of Fundamental Rights. Various initiatives and frameworks exist on EU, national and regional levels to further integration across borders and support cross-border work for employees and businesses.

The possibility of employees to travel across borders increases the labour force available to companies and other institutions based in border regions and reduces economic and territorial inequalities via improving the re-allocation of labour resources.<sup>140</sup> Those factors contribute to the economic growth and development of bordering regions. However, barriers to cross-border work persist (e.g. disparities in training, education systems or social security regimes)<sup>141</sup>. Cooperation across border regions is an important part of addressing these factors<sup>142</sup>.

The COVID-19 pandemic proved highly disruptive to cross-border work, with many Member States limiting the ability of non-citizens to enter their territory. This had knock-on effects not only in terms of cross-border employees not being able to reach their place of employment, but also regarding social security coordination. The situation of cross-border and frontier workers during the pandemic was raised by civil society<sup>143</sup>, the European Parliament<sup>144</sup> and the European Commission<sup>145</sup>.

The purpose of this chapter is to update and build on previous efforts to investigate cross-border and frontier work<sup>146</sup> and provide recent evidence and data on the number of cross-border workers, their characteristics, and the regions in which they are active. In doing so it also complements Section 1.4.1 of this report.

<sup>139</sup> As Switzerland remains a significant destination of cross-border workers, this chapter focuses on EU and EFTA countries together rather than EU Member States in isolation.

<sup>140</sup> Edzes, et al. (2022), 'Does cross-border commuting between EU-countries reduce inequality?', *Applied Geography*, 139.

<sup>141</sup> Communication COM(2017) 534 from the Commission on boosting growth and cohesion in EU border regions, p. 11.

<sup>142</sup> For an overview of past cross-border initiatives and partnerships, cf. Association of European Border Regions (AEBR) (2012), 'Information services for cross-border workers in European border regions', European Commission, Brussels.

<sup>143</sup> E.g. Council of Europe (2021), *Strasbourg Declaration on cross-border co-operation - AEBR, MOT and CESCO sign a co-operation agreement*, Strasbourg, Council of Europe.

<sup>144</sup> European Parliament resolution 2020/2664 of 19 June 2020 on European protection of cross-border and seasonal workers in the context of the COVID-19 crisis.

<sup>145</sup> For instance, cross-border and frontier workers were recognised as a group in need of specific policy measures in Communication 2020/C 102 I/03 from the Commission concerning the exercise of the free movement of workers during COVID-19 outbreak. The disruption was also recognised in Report COM(2021) 393 from the Commission on EU Border Regions: Living labs of European integration.

<sup>146</sup> For a notable publication, cf. European Commission (2009), 'Scientific Report on the Mobility of Cross-Border Workers within the EU-27/EEA/EFTA Countries', European Commission (DG EMPL), Brussels. This chapter builds also on the 2015 version of the intra-EU labour mobility report, which includes a thematic chapter on cross-border workers; cf. Fries-Tersch and Mabilia (2015), '2015 Annual Report on Intra-EU Labour Mobility', European Commission (DG EMPL), Brussels.

### 3.2.1 Regulatory framework

Since 2010, the modernised social security coordination of cross-border workers is regulated through Regulation (EC) 883/2004 on the coordination of social security systems and Regulation (EC) 987/2009 which lays down the procedure for implementing Regulation (EC) 883/2004.

One of the key points stipulated by these regulations is that the country where an employee or self-employed person works is responsible for their social security coverage. An exception is unemployment benefits: cross-border workers who regularly return to their country of residence through commuting (i.e. frontier workers; Section 3.2.2 develops more on this definition) are only entitled to unemployment benefits in their country of residence. However, cross-border workers who return to their country of residence on less than a weekly basis are entitled to unemployment benefits in their previous country of work instead, provided that they do not return to their Member State of residence.

### 3.2.2 Definitions of key terms and main data sources

The terms ‘frontier worker’ and ‘cross-border worker’ have different legal weight and definition in the context of EU labour markets:

- **Frontier workers** are a subset of cross-border workers, as a person of EU or EFTA nationality pursuing an activity as an employed or self-employed person in one EU or EFTA country, who resides in another EU or EFTA country *to which they return daily or at least weekly*. Frontier workers are additionally understood to generally be living in border regions, i.e. sub-national units located along the internal borders of the EU and EFTA<sup>147</sup>.
- **Cross-border workers** refer to a person of EU or EFTA nationality who is employed or self-employed in one EU or EFTA country, but ordinarily resides in another (neighbouring) EU and EFTA country. This concept therefore includes not only frontier workers, but also **posted workers**<sup>148</sup> and **seasonal workers**<sup>149</sup>.

For clarity, the thematic focus of this chapter is frontier workers. However, as discussed further below, the data does not allow for a distinction between frontier workers who return regularly to their country of residence, and other cross-border workers who remain abroad for a longer period of time.

For some of the adjacent work categories, this is not a significant issue: as discussed extensively elsewhere<sup>150</sup>, seasonal workers are generally not sampled in household surveys, and are thus not significantly present in the EU-LFS. All aggregates in this chapter are therefore to be understood as excluding seasonal workers. However, it is not possible to exclude that some of the individuals identified may be either posted, or

<sup>147</sup> These definitions of cross-border and frontier workers are the same as the ones used in the 2015 edition of the Annual report on Labour Mobility), which also includes a thematic chapter on cross-border workers: cf. Fries-Tersch and Mabilia (2015).

<sup>148</sup> Posted workers are discussed separately in Section 1.4.2. For a more in-depth discussion on posted workers in 2021, see De Wispelaere, et al. (2022, forthcoming).

<sup>149</sup> Seasonal workers are in this context to be understood as a person of EU or EFTA nationality working on a short fixed-term (seasonal) basis in an EU and EFTA country other than their country of residence, active in a sector marked by strong seasonal variation in labour demand (understood to chiefly refer to agriculture and accommodation and food services). This definition derived from Fries-Tersch, et al. (2021).

<sup>150</sup> Ibid.

may be employed in cross-border work where they do not return to their country of residence on a weekly basis (e.g. long-haul truck drivers). This should be borne in mind when interpreting the data presented herein.

At EU-level the main source of information is the **EU-LFS**. However, as cross-border workers are a relatively small group, constituting around 1% of all workers in the EU, a detailed analysis of the group is not always possible.

Where possible, **national and regional data sources** will be used to complement the EU-LFS data with more specific information on frontier workers. These can include national or regional data on labour markets, social security or commuting streams, or insights from transnational cross-border partnership and other non-state organisations.

**Table 29: Mapping of data sources used relating to frontier workers**

Border region	Source of data	Description and coverage
<b>Upper Rhine and Alpine (Germany, France, Italy and Switzerland)</b>	Swiss Federal Statistical Office <sup>151</sup>	Frontier workers with a G permit working in Switzerland (returning to their place of residence abroad at least once a week). Available at NUTS-2 disaggregation.
<b>Greater Region (Germany, France, Belgium and Luxembourg)</b>	Portail de l'emploi de Luxembourg <sup>152</sup>	Frontier workers subject to Luxembourgish social security who work in Luxembourg but reside in another EU Member State where they return at least once a week. Available at NUTS-2 disaggregation.
<b>Tri-border (Czechia, Poland and Germany)</b>	German Bundesagentur für Arbeit <sup>153</sup>	Employees working in Germany subject to social security contributions (SvB) who live in another country. Available at NUTS-3 disaggregation.
<b>Meuse-Rhine (Germany, Belgium and Netherlands)</b>	Statistics Netherlands (CBS) <sup>154</sup>	Workers who are resident in Belgium, Netherlands or Germany working in regions that are not in their country of residency. Available at NUTS-3 disaggregation.

Source: Milieu elaboration.

Some data sources allow for a comparatively detailed analysis, including by distinguishing frontier workers. This is the case for the Swiss Federal Statistical Office: they gather data on workers with a 'G' permit, which requires commuting to Switzerland at least once a week. Similarly, data from the 'Portail de l'emploi de Luxembourg' summarises statistics on workers with Luxembourgish social security, which entails weekly commuting. The German 'Bundesagentur für Arbeit' and 'Statistics Netherlands'

<sup>151</sup> Swiss Federal Statistics Office (2022), *Statistique des frontaliers (STAF)* [Online]. Available online: <https://www.bfs.admin.ch/bfs/fr/home/statistiques/travail-remuneration/enquetes/staf.html> [Accessed 16 November 2022].

<sup>152</sup> DataPublic.LU (2022), *Emploi total par commune de résidence au Luxembourg et dans les pays frontaliers* [Online]. Available online: <https://data.public.lu/en/datasets/emploi-total-par-commune-de-residence-au-luxembourg-et-dans-les-pays-frontaliers/> [Accessed 16 November 2022].

<sup>153</sup> German Federal Employment Agency (2022), *Pendlerverflechtungen der sozialversicherungspflichtig Beschäftigten nach Kreisen - Deutschland (Jahreszahlen)* [Online]. Available online: [https://statistik.arbeitsagentur.de/SiteGlobals/Forms/Suche/Einzelheftsuche\\_Formular.html?nn=24390&topic\\_f=beschaeftigung-sozbe-krpend](https://statistik.arbeitsagentur.de/SiteGlobals/Forms/Suche/Einzelheftsuche_Formular.html?nn=24390&topic_f=beschaeftigung-sozbe-krpend) [Accessed 16 November 2022].

<sup>154</sup> Statistics Netherlands (CBS) (2022), *Grenspendel werknemers; nationaliteit, woonland, werkregio (gemeente)* [Online]. Available online: <https://opendata.grensdata.eu/#/InterReg/nl/dataset/22024NED/table?ts=1667383964385> [Accessed 16 November 2022].

(CBS) look at employees subject to social security contributions whose place of work differs from their place of residence<sup>155</sup>. Table 29 lists the datasets used for this chapter<sup>156</sup>.

**Administrative data** has in some cases been used to study cross-border labour markets and movements more in-depth, and the availability and usability of this data was investigated in a 2018 Commission report. The report concluded that all Member States that were investigated were able to provide detailed administrative data on social security recipients, but that additional work on harmonisation and indicator construction was necessary to make comparative analysis possible<sup>157</sup>. Such harmonisation goes beyond this chapter, for which reason administrative data is not used. It may however prove a useful data source for further studies on the topic.

### 3.3 Cross-border work in the EU and EFTA

This section presents the state of play and trends over time on cross-border workers and their profiles in terms of demographic and socio-economic characteristics. To account for recent developments that may influence the extent and nature of cross-border work, a final section is devoted to the impacts of teleworking on cross-border workers.

#### 3.3.1 Current stocks and composition of cross-border workers

##### Stocks of cross-border workers

Cross-border workers in the EU were discussed briefly in Section 1.4.1 of this report, where Table 6 shows there were 1.7 million cross-border workers active in the EU and EFTA in 2021<sup>158</sup>, and 88% of the cross-border workers have the nationality of their country of residence. Table 7 furthermore indicates France (424 000), Germany (213 000) and Poland (190 000) as the largest countries of origin, and Germany (378 000), Switzerland (345 000) and Luxembourg (212 000) as the largest countries of destination. In addition, cross-border workers are generally a very small proportion of the total workforce (less than 1% at EU average). Two exceptions stand out: Switzerland where they are 8%, and Luxembourg where they make up a whole 44% of the workforce.

##### Demographic characteristics of cross-border workers

A significant majority of cross-border workers (70%) are men, making for a more polarised workforce than among movers overall (where male movers make up 51% of the labour force, as shown in the figure below). In terms of age, most cross-border workers (42%) are 35 to 49 years old, which is quite similar to the age composition of employed working-age EU movers.

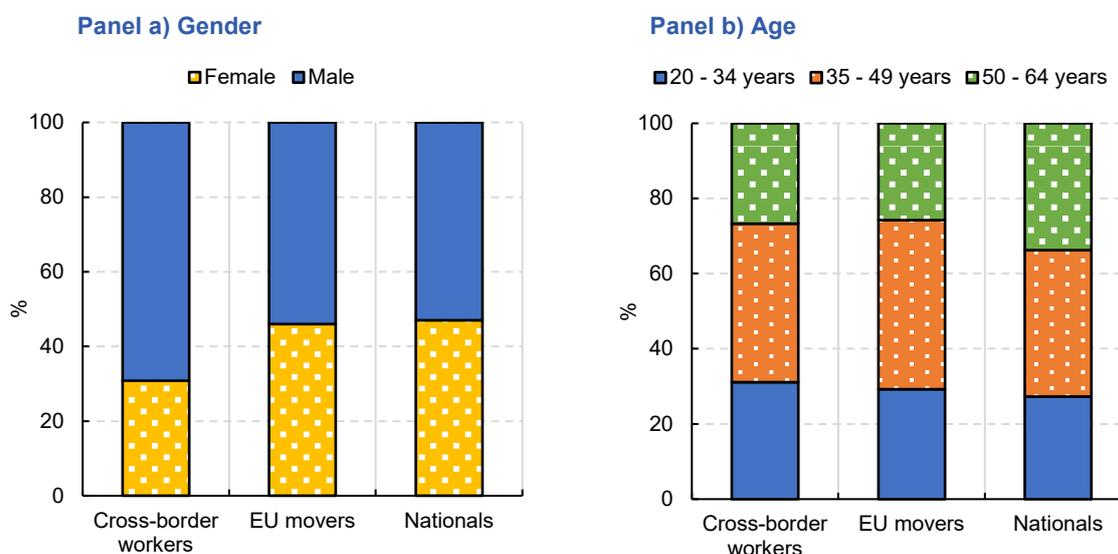
<sup>155</sup> For the German and Dutch databases, commuters with a second home in their country of work, who are less frequently commuting, may however also be included.

<sup>156</sup> A non-exhaustive list of national and regional data source in key border regions is shown in Section 3.6, Table 37.

<sup>157</sup> European Commission (2018), 'Border Region Data Collection', European Commission (DG REGIO), Brussels.

<sup>158</sup> Around 24% of which go to EFTA countries (and 90% of those go specifically to Switzerland).

**Figure 40: Share of workers by gender and age group in the EU and EFTA, 2021<sup>159</sup>**



Note: EU and EFTA citizenship included. Cross border workers to EFTA countries represent 24% of all cross-border workers and around 87% of them are going to Switzerland. The population of nationals and EU movers refers to employed individuals. More information on age and gender by country of origin / destination in Annex C.3 Table 67 and Table 68.

Source: EU-LFS 2021, custom extraction by Milieu.

## Educational attainment of cross-border workers

Cross-border work is mainly undertaken by individuals with medium education<sup>160</sup> (900 000, 54% of all cross-border workers); this share is also higher than that for nationals (49%) and EU movers (39%). The share of those with higher educational attainment (567 000, 34%) is instead quite similar to EU movers (36%) and nationals (38%). Fewer cross-border workers have lower education levels (194 000, 12%).

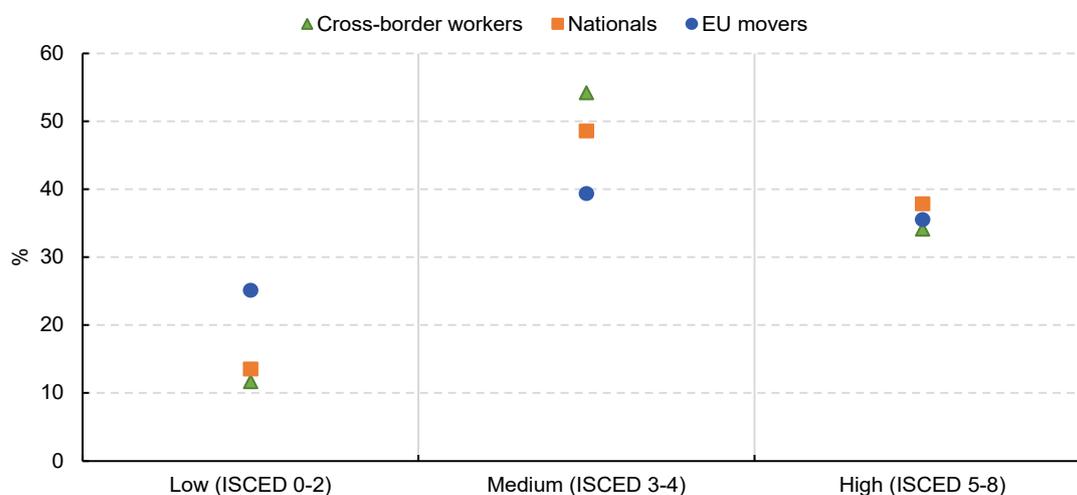
40% of cross-border workers with high education are women, this is more than their average share in cross-border workers (30%). Male cross-border workers make up the largest portion of those with low and medium education (74 and 77%, respectively)<sup>161</sup>. However, as the detailed analysis in Section 3.4 shows, the averages disguise regional differences.

<sup>159</sup> More information on age and gender by country of origin and destination is shown in Table 63 and Table 64 in Annex C.3.

<sup>160</sup> As elsewhere in this report, the terminology in this study follows that of the International Standard Classification of Education (ISCED), as operationalised by e.g. Eurostat as follows: 'low' educational attainment refers to ISCED levels 0-2 (early childhood, primary and lower secondary education); 'medium' refers to ISCED levels 3-4 (upper secondary and post-secondary non-tertiary education); and 'high' refers to ISCED levels 5-8 (short-cycle tertiary education and tertiary education at Bachelor, Master's or Doctoral level). For more information, cf. Eurostat (2022e). For brevity, 'low, medium and high education' are used in the text rather than 'educational attainment'.

<sup>161</sup> See Table 38 in Section 3.6 for more detail.

**Figure 41: Share of workers by educational attainment in the EU and EFTA, 2021<sup>162</sup>**



Note. EU and EFTA citizenship included. Disaggregating EU and EFTA countries of origin and destination is not possible due to data limitations. The population of nationals and EU movers refers to employed individuals.

Source: EU-LFS 2021, custom extraction by Milieu

## Occupation of cross-border workers

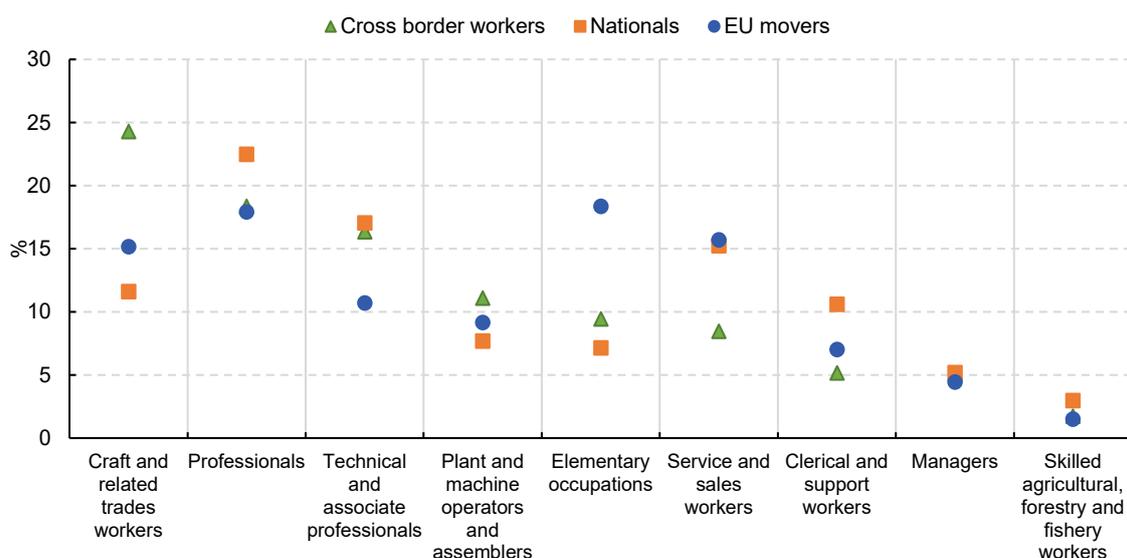
Craft and related trades are the most common occupations among cross-border workers (381 000, 25%). Those include, among others, construction workers, welders, plumbers, carpenters, electricians and painters, and generally require at least secondary education. The same figure for nationals and EU movers is much lower by comparison, at 12% and 15%, respectively. Professionals (288 000 or 18%) as well as technicians and associate professionals (257 000 or 16%) are also common occupations of cross-border workers, and generally require university or tertiary education levels<sup>163</sup>.

Most occupations are dominated by men, especially those related to craft and related trades (94% men) and plant and machine operations (88% men). Women are by contrast overrepresented in clerical support and service and sales, where they make up around 60% of all cross-border workers. A relatively high share of women (around 40%) can also be found in elementary occupations, and for technicians and associate professionals<sup>164</sup>.

<sup>162</sup> More information on education by country of origin and destination is shown in Table 65 in Annex C.3.

<sup>163</sup> For more information, cf. International Labor Organization (ILO) (2012), 'International Standard Classification of Occupations 2008 (ISCO-08): Structure, group definitions and correspondence tables', ILO, Geneva.

<sup>164</sup> See Table 39 in Section 3.6 for more detail.

**Figure 42: Share of workers by occupation in the EU and EFTA, 2021**

Note. EU and EFTA citizenship included. Disaggregating EU and EFTA countries of origin and destination is not possible due to data limitations. Armed forces occupations omitted given very low numbers. The population of nationals and EU movers refers to employed individuals.

Source: EU-LFS 2021, custom extraction by Milieu

## Economic sector of cross-border workers

Table 30 compares the distribution of cross-border workers across economic sectors, EU movers and nationals. Manufacturing and construction make up around 378 000 or 45% of all cross-border workers (a significantly higher proportion than EU movers and nationals, at 27% and 24% respectively). Human health and social work activities (142 000 or 10%) and transportation and storage (132 000 or 9%) are also more common among cross-border workers than EU movers. The shares of those employed in professional, scientific and technical activities and financial and insurance are comparatively quite similar between cross-border workers and EU movers.

While cross-border work is in most sectors dominated by men<sup>165</sup>, the accommodation and food sector is rather gender-balanced and in human health and social work as well as education 78 and 52% of the cross-border workers are women. There is also a high share of women in professional, scientific and technical activities (40%), administrative and support service activities (45%) and financial and insurance activities (38%).

**Table 30: Share of workers by economic sector in the EU and EFTA (%), 2021**

Economic Sector	Cross border workers	EU movers	Nationals
<b>Manufacturing</b>	26	17	17
<b>Construction</b>	20	10	7
<b>Human health and social work</b>	10	9	12
<b>Transportation and storage</b>	9	7	5
<b>Wholesale and retail trade</b>	9	12	14

<sup>165</sup> See Table 40 in Section 3.6 for more detail.

Economic Sector	Cross border workers	EU movers	Nationals
Accommodation and food service	5	8	3
Agriculture	4	3	4
Professional, scientific and technical	4	5	6
Administrative and support service	3	7	4
Financial and insurance	3	2	3
Information and communication	3	4	4

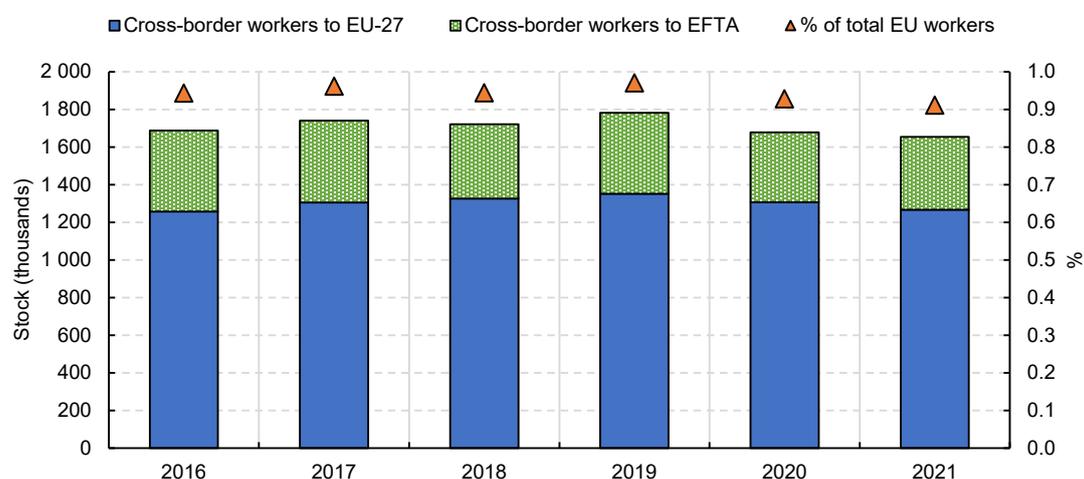
Note. EU and EFTA citizenship included. Disaggregating EU and EFTA countries of origin and destination is not possible due to data limitations. Only sectors with percentages for cross-border workers above 2% are shown. The population of nationals and EU movers refers to employed individuals.

Source: EU-LFS 2021, custom extraction by Milieu

### 3.3.2 Trends in the number of cross-border workers

Figure 43 shows the evolution of cross-border workers in the EU and EFTA. Overall the figures were rather stable over the last five years and showed a moderate increase as compared to 2006, where 1.2 million workers were registered as cross-border workers in the then EU28 and EFTA<sup>166</sup>.

**Figure 43: Cross-border workers by destination in the EU and EFTA, 2016-2021**



Note. Aggregates include both EU and EFTA citizenship to maximise the available data.

Source: EU-LFS 2021, custom extraction by Milieu.

Table 31 shows trends by the main countries of origin and destination. In absolute terms, France has experienced the greatest increase in outgoing cross-border workers between 2016 and 2021 (+ 33 000), followed by Poland (+ 26 000), Belgium (+19 000) and Czechia (+ 16 000). The number of cross-border workers from Germany has been decreasing since 2018.

<sup>166</sup> Fries-Tersch and Mabilia (2015).

In 2009, Poland, Hungary, Romania and Czechia were not at the top of the list of the main countries of origin<sup>167</sup>, indicating that the growth in cross-border workers from those countries is a rather recent phenomenon. For Poland, this growth can already be visible in 2014, where it ranked third place with 138 000 outgoing cross-border workers, right after France (364 000) and Germany (229 000)<sup>168</sup>.

Germany, Switzerland and Luxembourg have remained the main destinations over the years. Switzerland has seen a small but steady decrease in absolute numbers since 2016, with stocks decreasing on average 1% per year.

**Table 31: Cross-border workers by main countries of origin and destination in the EU and EFTA, 2016-2021<sup>169</sup>**

	2016	2017	2018	2019	2020	2021	Trend
<b>Main countries of origin (1 000s)</b>							
<b>FR</b>	391	396	371	386	401	424	
<b>DE</b>	228	233	229	223	160	213	
<b>PL</b>	165	191	196	208	206	190	
<b>BE</b>	100	113	108	107	106	119	
<b>RO</b>	111	112	113	128	113	113	
<b>HU</b>	99	91	92	99	87	72	
<b>CZ</b>	48	57	59	62	65	64	
<b>Main countries of destination (1 000s)</b>							
<b>DE</b>	362	382	407	403	374	378	
<b>CH</b>	371	369	335	366	321	345	
<b>LU</b>	176	185	181	190	174	212	
<b>AT</b>	160	167	166	173	163	143	
<b>NL</b>	110	117	109	114	53	122	
<b>BE</b>	69	66	82	86	49	85	

Note: EU and EFTA citizenship included. Only countries with at least 50 000 cross-border workers in 2021 in either category are included.

Source: EU-LFS 2021, custom extraction by Milieu.

Compared to 2009<sup>170</sup>, the ranking of destination countries has changed substantially. While in 2009 Switzerland was clearly the most significant destination (206 000 incoming cross-border workers), with Luxembourg closely behind (127 000), the most significant destination 12 years later is instead Germany with 378 000 incoming cross-border workers. This is followed by Switzerland (345 000), and Luxembourg (212 000) only at the third place. Austria has also experienced a significant increase over the years: in 2009 there were circa 48 000 incoming cross-border workers, increasing to 150 000 in 2014 and reaching the peak of 173 000 in 2019. The upward trend has stopped in 2020 due to COVID-19; border restrictions which halted commuters from neighboring countries such as Hungary or Slovakia and hampered tourism, which is particularly important for the Austrian economy.

The seven largest countries of origin depicted in Table 31 accounted for about 73% of outgoing cross-border workers in 2016-2021. In 2009, a similar share was reached by only the top four main countries (France, Germany, Belgium and Italy). In contrast, the

<sup>167</sup> European Commission (DG EMPL) (2009).

<sup>168</sup> Fries-Tersch and Mabilia (2015).

<sup>169</sup> Figures for a wider range of countries of origin and destination are shown in Table 63 and Table 64 in Annex C.3.

<sup>170</sup> European Commission (DG EMPL) (2009).

six main destination countries accounted for around 80% of all incoming cross-border workers in 2016-2021, a similar proportion to the 2009 situation. Therefore, while destination countries are more concentrated and stable throughout the years, the number of large countries of origin is expanding.

### Long-term development of demographic characteristics of cross-border workers

In terms of demographic characteristics, there has been no significant change in the gender composition of cross-border workers over the years: the share of women stayed more or less constant at 30% since 2016<sup>171</sup>. Some changes are however evident in terms of the age composition of the labour force, as shown in Table 32. The percentage of cross-border workers below 35 years of age is slowly decreasing over time, whereas the share of cross-border workers aged 50 and older increased 4 pps since 2016. Similar trends can also be seen for EU movers and may hint at a limited rate of renewal between the ageing population and younger workers, which will gradually slow down mobility rates of workers.

The gender and age composition of cross-border workers has remained quite stable over the past 12 years. Table 32 provides details concerning the situation since 2016.

**Table 32: Share of workers by age group in the EU and EFTA, 2016-2021**

	2016	2017	2018	2019	2020	2021	Trend
<b>Cross border workers (%)</b>							
20 - 34 years	34	33	32	33	31	31	
35 - 49 years	43	43	42	40	42	42	
50 - 64 years	23	24	25	26	27	27	
<b>EU movers (%)</b>							
20 - 34 years	34	32	32	31	29	29	
35 - 49 years	45	45	45	45	45	45	
50 - 64 years	22	22	24	25	26	26	
<b>Nationals (%)</b>							
20 - 34 years	28	28	28	28	27	27	
35 - 49 years	41	40	40	39	39	39	
50 - 64 years	31	32	32	33	34	34	

Note: EU and EFTA citizenship included. The population of nationals and EU movers refers to employed individuals. More detail in Table 41 in Section 3.6.

Source: EU-LFS 2021, custom extraction by Milieu.

### Educational attainment of cross-border workers

Table 33 shows that the composition of cross-border workers has been shifting towards higher education levels, at the expense mainly of medium education. This is the case also for employed EU movers and nationals. However, the increase was greatest for cross-border workers at 6 percentage points between 2016 and 2021, compared to 5 percentage points for employed EU movers and 4 percentage points for employed nationals over the same period.

<sup>171</sup> Further detail is provided in Table 41 in Section 3.6.

**Table 33: Share of workers by educational attainment  
in the EU and EFTA, 2016-2021**

	2016	2017	2018	2019	2020	2021	Trend
<b>Cross border workers (%)</b>							
Low (ISCED 0-2)	13	12	13	13	12	12	
Medium (ISCED 3-4)	59	58	57	58	57	54	
High (ISCED 5-8)	28	30	30	29	32	34	
<b>EU movers (%)</b>							
Low (ISCED 0-2)	26	25	25	25	25	25	
Medium (ISCED 3-4)	44	43	42	42	40	39	
High (ISCED 5-8)	31	31	32	33	35	36	
<b>Nationals (%)</b>							
Low (ISCED 0-2)	16	15	15	15	14	14	
Medium (ISCED 3-4)	51	50	50	50	49	49	
High (ISCED 5-8)	34	34	35	36	37	38	

Note: EU and EFTA citizenship included. The population of nationals and EU movers refers to employed individuals.

Source: EU-LFS 2021, custom extraction by Milieu.

Comparing this to the 2009 study, the trend towards increasingly highly-educated cross-border workers appears to be a rather recent phenomenon.

## Occupations and economic sectors of cross-border workers

Crafts and related trade activities are the main occupations of cross-border workers. However, over the years there has been a shift towards professional occupations, mainly at the expense of service and sales occupations (see Table 34)<sup>172</sup>. The same shift can be noted also for employed EU movers, and to a lesser extent employed nationals.

In terms of economic sectors, the composition of cross-border workers has not significantly changed over the years; manufacturing and construction have been the main sectors since 2016 (with an average share of 45% over the period, well above the shares of around 25% for nationals and EU movers). In terms of services, transportation and storage, human health and social work and wholesale and retail trade have been the most important sectors of employment: their average shares were 9% each between 2016 and 2021. The latter two are also popular among EU movers and nationals (average of 13% for wholesale and retail trade and 10% for human health and social work), while the former plays only a minor role (accounting for less than 6%)<sup>173</sup>.

It is not possible to make a comparison over a longer time span due to limited comparable data available. However, the survey conducted in the context of the 2009 report finds that manual-technical activities are generally more frequented by cross-border workers than service-related sectors<sup>174</sup>.

<sup>172</sup> The situation was also very similar in the 2015 European Commission report; in 2014, around 23% of cross-border workers was involved in craft and related trades, and only 14% in professional activities.

<sup>173</sup> The exact figures are shown in Table 66 in Annex C.3.

<sup>174</sup> European Commission (DG EMPL) (2009). The report does not analyse NACE economic sectors classifications, but rather clusters cross-border workers from manually operated sectors (1) to service-based sectors (5). The report finds an average of 2.7 and concludes that the field of manual-technical activities is slightly more frequented than service-related activities.

**Table 34: Share of workers by occupation in the EU and EFTA, 2016-2021**<sup>175</sup>

	2016	2017	2018	2019	2020	2021	Trend
<b>Cross border workers (%)</b>							
Craft and related trades	25	24	24	25	24	24	
Elementary occupations	9	9	10	10	11	9	
Professionals	14	15	15	15	16	18	
Service and sales	13	12	11	11	10	8	
Technicians and associate professionals	15	15	15	15	16	16	
<b>EU movers (%)</b>							
Craft and related trades	16	16	16	16	15	15	
Elementary occupations	21	21	20	20	19	18	
Professionals	15	15	15	16	18	18	
Service and sales	17	17	17	17	16	16	
Technicians and associate professionals	10	10	10	11	11	11	
<b>Nationals (%)</b>							
Craft and related trades	12	12	12	12	12	12	
Elementary occupations	8	8	8	7	7	7	
Professionals	19	19	20	20	22	22	
Service and sales	16	16	16	16	16	15	
Technicians and associate professionals	17	18	18	18	17	17	

Note: EU and EFTA citizenship included. The population of nationals and EU movers refers to employed individuals. Only occupations with most significant changes are included.

Source: EU-LFS 2021, custom extraction by Milieu.

### 3.3.3 Telework and cross-border workers

The ongoing discussion suggests that teleworking may provide an opportunity to increase the prevalence of frontier work and create new forms of frontier work. A recent article from Bruegel think-tank, for instance, introduces the concept of *digital frontier workers*<sup>176</sup>. The subject also gained attention during the COVID-19 pandemic, when many cross-border workers (and workers overall) were prevented from accessing their workplaces due to restrictions on travel or commerce. The aim of this section is thus to give a brief introduction to teleworking practices in the context of cross-border work.

According to EU-LFS data<sup>177</sup>, in 2020, 12% of all employed persons in the EU *usually* worked from home, while this share had remained constant at around 5 or 6% over the past decade. The share of those who *sometimes* worked from home remained stable between 2018 and 2020 at around 8 to 9%. Among the population of cross-border workers, in 2020 around 10% (186 000) *usually* worked from home, an increase of around 8 percentage points compared to 2019.

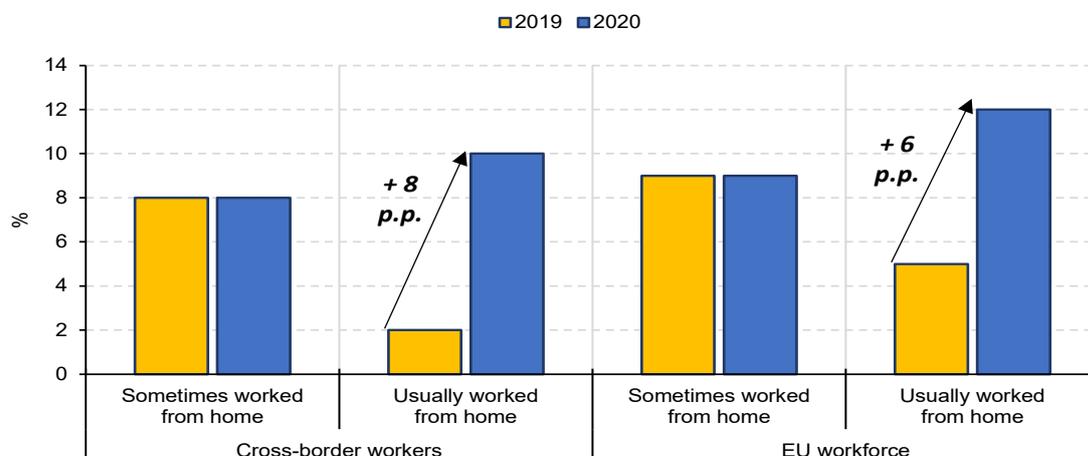
When comparing the changes in teleworking practices between cross-border workers and EU workforce, as is done in Figure 44, the percentage of cross-border workers working from home was lower than that of total group of employed persons in the EU both in 2019 and 2020. However, the increase in workers *usually* working from home is higher for cross-border workers than for the total employed population in the EU (8 vs 6 percentage points).

<sup>175</sup> Further detail is provided in Table 65 in Annex C.3.

<sup>176</sup> Grzegorzcyk, et al. (2022), 'Cross-border telework in the EU: fab or fad?', Bruegel, Brussels.

<sup>177</sup> De Wispelaere (2022), 'Cross-border workers working from home: a quantitative approach', HIVA - KU Leuven, Leuven. Note that since the publication of this report, more recent data for 2021 is available.

**Figure 44: Work from home among cross-border workers and the EU workforce overall, 2019-2020**



Source: EU-LFS, De Wispelaere (2022), Milieu elaboration.

In general, there is no indication that cross-border workers are more attracted by teleworking than other workers. The contrary may instead be more plausible also considering that the sectors of activity of this population (e.g. construction, manufacturing, tourism) are generally less adaptable to teleworking practices. According to research of the German Bundesagentur für Arbeit, teleworking *potential* is significantly lower for frontier workers to Germany (41% of activities<sup>178</sup>) relative to all employees in the country (58%). In all cases, the actual use of teleworking is much lower than the potential; one third or less for occasional use and even less for frequent use<sup>179</sup>.

### 3.4 Comparing regions of cross-border work

While section 3.3 looked at the characteristics of cross-border workers at EU level, different regions may host different profiles of cross-border workers. The aim of this section is thus to firstly identify main macro-regions of cross-border work, and then to look at the border regions with the greatest cross-border movements.

Before delving into the analysis, it is important to recall the concepts of border region and macro-region. Border regions entail regions at NUTS-2 located along internal EU and EFTA borders (e.g. the bordering regions of Wallonia in Belgium and Lorraine in France). A macro-region is instead a bundle of bordering regions or countries (depending on data availability) located along internal EU and EFTA borders. For instance, the 'Greater Region' (or Grande Région) is a macro-region comprising several bordering regions in France, Germany, Belgium and Luxembourg.

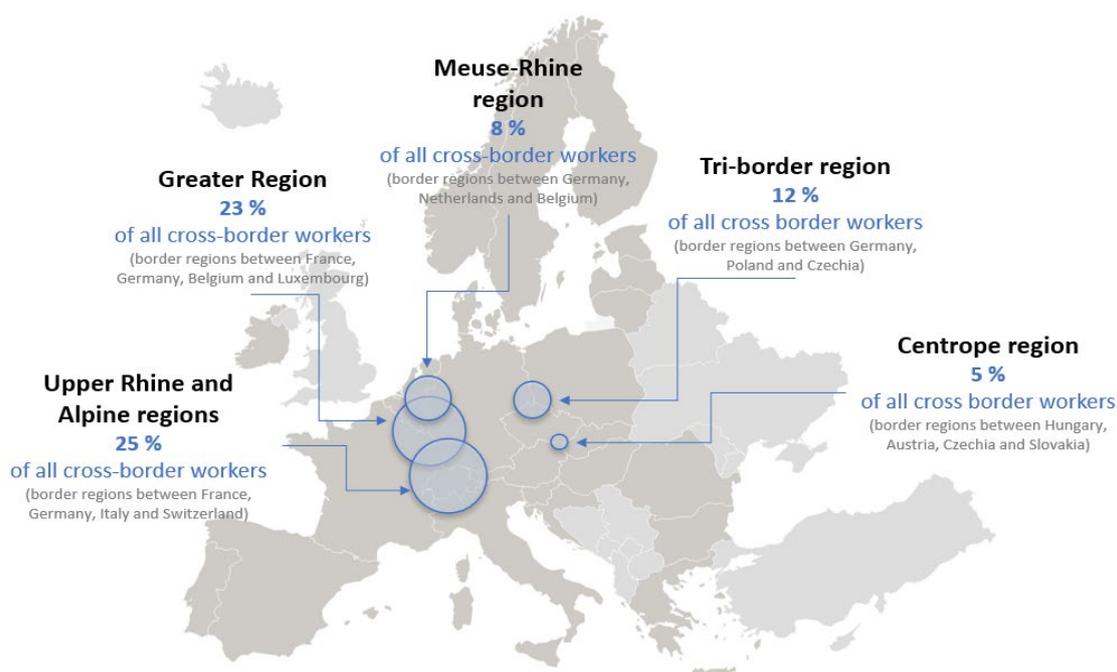
<sup>178</sup> The 41% is an average of frontier workers to Germany from Eastern European countries (such as Poland and Czechia), having a teleworking potential of around 32% of all activities, and frontier workers to Germany from countries such as Luxembourg, Austria, Switzerland, France, Netherlands, Belgium and Denmark, having a teleworking potential of 50%. Disparities in potential derive mainly from sectoral and occupational differences (explored in Section 3.4.2).

<sup>179</sup> Seibert (2021), 'Grenzpendler in Deutschland Beschäftigungsentwicklung und Berufe', Bundesagentur für Arbeit, Berlin.

### 3.4.1 Identifying the main macro-regions of cross-border work and directions of travel

Figure 45 shows the macro-regions with the most flows of cross-border workers based on EU-LFS data. Together they represent around 70% of all cross-border commuters for work in the EU and EFTA, with the vast majority of movements happening along a line from the mouth of the river Rhine up to the lake Lemman.

**Figure 45: Main macro-regions of cross-border work, 2021**



Source: EU-LFS 2021, custom extraction by Milieu.

The remaining of this section delves deeper into each macro-region by providing a brief description of the area<sup>180</sup> and using EU-LFS data at NUTS-2 level<sup>181</sup> (complemented with other sources, whenever relevant) to underpin flows and directions of commuting. This disaggregation also allows capturing workers living at the frontier and thus approximating to frontier workers.

#### The Upper Rhine region

With a total of 26 000 km<sup>2</sup>, the **Upper Rhine region** has around 8 million inhabitants coming from bordering regions between Switzerland (Northwestern: Kantons Basel-Stadt, Basel-Landschaft, Aargau, Jura and Solothurn), France (Alsace) and Germany (parts of Baden-Wuerttemberg and Rhineland-Palatinate). With more than 40% of the area covered in forests, the five main cities of Karlsruhe, Freiburg, Strasbourg, Mulhouse and Basel host around one fifth of the total population. Swiss Kantons enjoy relatively higher economic development (PPS GDP per capita of EUR 52 000 vs macro-region average of EUR 39 000). Cross-border cooperation within the Upper Rhine dates back

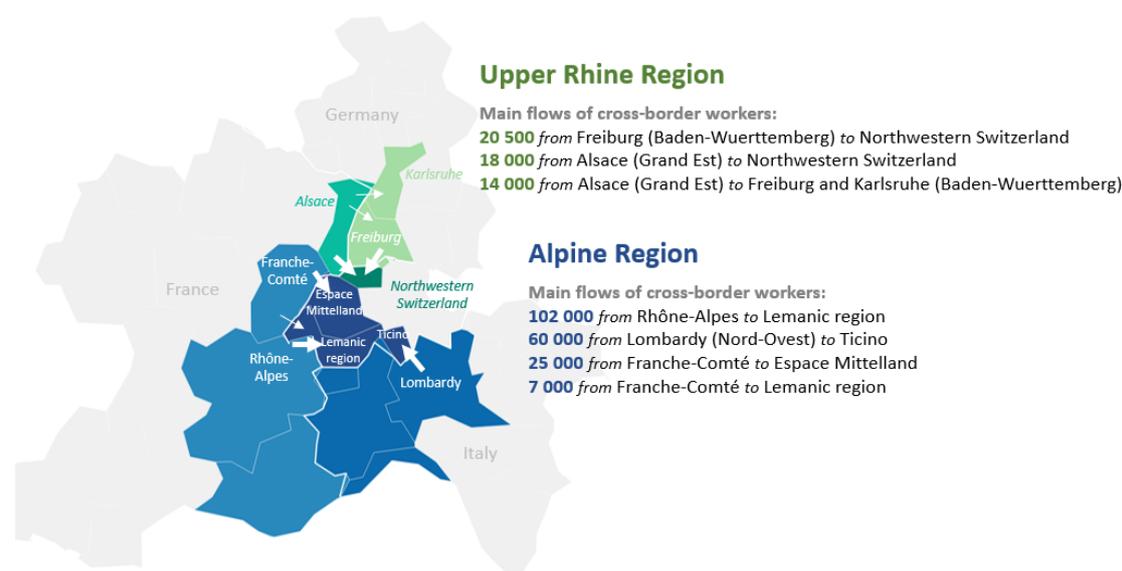
<sup>180</sup> The profiles of each macro-region, in terms of its population, economies and institutional cooperation, are described more in detail in Annex D.

<sup>181</sup> EU-LFS data at NUTS-3 level not available.

to the end of World War II and intensified over the years. A milestone was the creation of the Franco-German-Swiss Conference of the Upper Rhine in 1975, which is still today a central body for information and coordination of cross-border cooperation<sup>182</sup>. A full profile of the macro-region is in Annex D.

The labour market in the area is strongly integrated and hosts around 52 400 workers commuting across the regions. The most significant flows are from Freiburg and Alsace towards Northwestern Switzerland. In particular, Alsace is the main region of origin with around 33 000 cross-border workers going to Northwest Switzerland and Baden-Wuerttemberg (i.e. Regierungsbezirke Karlsruhe and Freiburg) in Germany. The comparatively high unemployment rate in Alsace<sup>183</sup> may act as a pushing factor for workers to find jobs elsewhere.

**Figure 46: Main bordering regions and direction of flows within the Upper Rhine and Alpine regions, 2021**



Note. Thicker arrows indicate flows above 10 000 workers. Low reliability for Freiburg to Northwestern Switzerland, Franche-Comté to Lemanic region and Alsace to Baden-Wuerttemberg. Figures may slightly differ from the ones published by Conférence Franco-Germano-Suisse du Rhin Supérieur or similar institutions on the number of cross-border workers within the Upper-Rhine macro-region, due to the use of different datasets. As discussed elsewhere in this report, EU-LFS data presents certain limitations when analysing very specific populations.

Source: EU-LFS 2021, custom extraction by Milieu.

## Alpine region

The **Alpine region** instead covers around 172 000 km<sup>2</sup> and extends along the chain of the Alps. It has around 32 million people from bordering regions between Italy (Piedmont, Lombardy, Valle d'Aosta and Liguria), France (Franche-Comté, Rhône-Alpes, and

<sup>182</sup> Since the end of World War II, several joint initiatives have been put in place in the macro-region to foster integration, such as the “Permanent Tripartite Regional Coordination Conference” at the beginning of the 1970s or the Bonn Agreement in 1975 that provided the foundations for the Intergovernmental Commission to address cross-border issues. Cf. Conférence Franco-Germano-Suisse du Rhin Supérieur (2022b), *La création de la Conférence du Rhin supérieur* [Online]. Available online: <https://www.conference-rhin-sup.org/fr/la-conference-du-rhin-superieur/les-debuts.html> [Accessed 9 December 2022].

<sup>183</sup> Alsace has a rate of unemployment of around 6%. This is lower than the national average of around 8% in 2021 (Eurostat) but it is the highest among the bordering regions in the Upper Rhine macro-area. See the macro-region profile in Annex D for more detail.

Provence-Alpes-Côte d'Azur) and part of Switzerland (Lemanic region, Espace Mittelland and Ticino). The whole area is characterised by strong cultural and socio-economic disparities, with Swiss regions enjoying higher levels of wages and economic development. Transnational cooperation is strong and mainly follows the topology of the area. Two important cooperation hotspots are the French-Valdo-Geneva axis<sup>184</sup> and the border between Ticino and Northwestern Italian regions<sup>185</sup>. A full profile of the macro-region is in Annex D.

The labour market within the French-Valdo-Geneva area is quite vibrant (see Figure 46). The most significant flow happens between the French region of Rhône-Alpes and the Swiss Lemanic region, which represents almost 50% of all flows within the whole macro-region. Most of the commuters go to the Kanton of Geneva, most often in the city center, or the Kanton of Vaud. Within the region of Rhône-Alpes, most cross-border workers come from the Départements of Ain (and mainly the city of Gex) and Haute-Savoie<sup>186</sup>.

Strong (and largely one-directional) flows exist also from Lombardy to Ticino, where around 60 000 workers commute to the Swiss Kanton. The main flows of cross-border commuters are concentrated on the Varese-Ticino and Como-Ticino axes, which together represent the majority of cross-border commuters. Significantly smaller flows go in the direction of the Lemanic region, mostly coming from the Piedmontese province of Verbano-Cusio-Ossola<sup>187</sup>.

## The Greater Region (Grande Région)

**The Greater Region** is an attractive and multicultural macro-region with a relatively high population density. It covers an area of around 42 000 km<sup>2</sup> and hosts 6 million inhabitants from four different countries: Belgium (provinces of Liège and Luxembourg), Grand Duchy of Luxembourg, France (Lorraine) and Germany (Saarland and Trier)<sup>188</sup>. The economic development in the macro-area is mainly driven by the strong economy in Luxembourg, where (PPS) GDP per capita is more than double the average of the macro-area (EUR 79 000 vs EUR 34 000). Furthermore, the area is characterised by strong and long-standing institutional cooperation that started well before the free movement agreement signed in 1985 in Schengen and which intensified in 1995 with the first Summit of the Greater Region. The latter is a permanent body that leads cooperation

<sup>184</sup> Cooperation within the French-Valdo-Geneva area is long-standing and started with the 1973 agreement on 'financial compensation relating to cross-border workers in Geneva'. In the same year, the Franco-Genevois Regional Committee (CRFG) was also created to manage cross-border cooperation. Initiated by the CRFG, l'Observatoire statistique transfrontalier (OST) offers still today updated and harmonised statistics on the area. Cf. Transfrontier Operational Mission (MOT) (2022), *Comité Régional Franco-Genevois* [Online]. Available online: <http://www.espaces-transfrontaliers.org/bdd-territoires/territoires/territory/show/comite-regional-franco-genevois/> [Accessed 9 December 2022].

<sup>185</sup> Integration between Kanton Ticino and Italian regions strengthened at the beginning of the 21<sup>st</sup> century with the agreements regulating the free movements of people and political, economic and cultural cooperation. This has resulted in a sharp increase in the number of frontier workers in Ticino, which has also created tension on several dimensions, one being the taxation of frontier workers. Today, cooperation across the area is fostered and monitored by several channels such as working communities (e.g. Regio Insubrica, Espace Mont-Blanc) and the Interreg V programme. Cf. BAK Economics (2021), 'Diagnostica territoriale dell'area di confine Svizzera-Italia', BAK Economics, Basel.

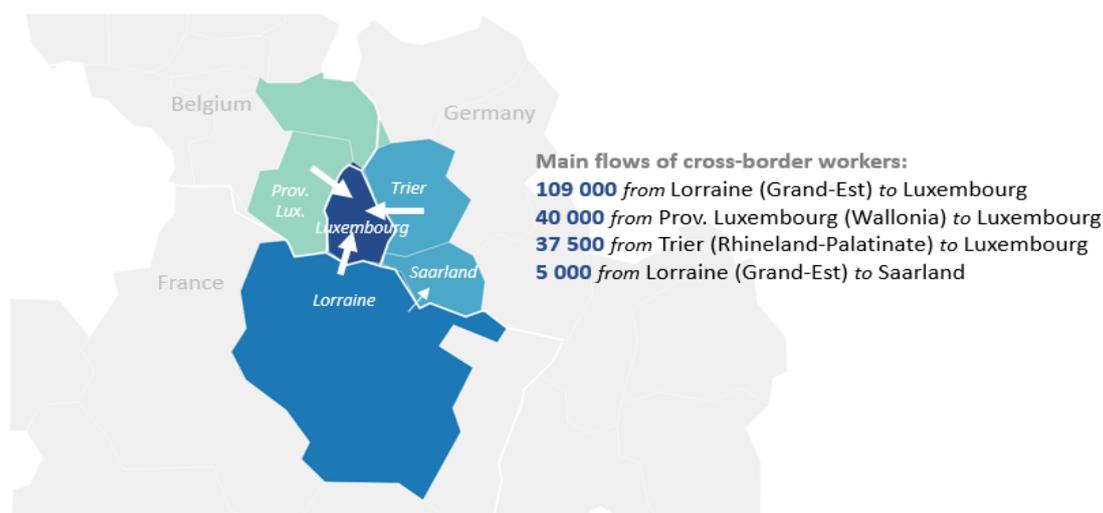
<sup>186</sup> Observatoire Statistique Transfrontalier (2021), 'Synthèse 2021', Observatoire Statistique Transfrontalier, Geneva.

<sup>187</sup> Ibid. The analysis of BAK economics (2021) reports around 1 800 workers commuting from Italy to the Lemanic region in 2019.

<sup>188</sup> Note that there is de facto an entity called Grande Région (Großregion in German) in the form of the collaboration body these countries are involved in. This entity comprises a larger geographical scope than the one analysed in this context. In this study we focus only on the parts of these countries that are located along borders to study the phenomenon of cross-border work more accurately.

and is still today the most dominant actor in the region<sup>189</sup>. A full profile of the macro-region is in Annex D.

**Figure 47: Main bordering regions and direction of flows within the Greater Region, 2021**



Note. Thicker arrows indicate flows above 10 000 workers. Low reliability for Lorraine to Saarland. Figures may slightly differ from the ones published by IBA-OIE or similar institutions on the number of cross-border workers within the macro-region, due to disparities in geographical scope and the use of different datasets. As discussed elsewhere in this report, EU-LFS data presents certain limitations when analysing very specific populations.

Source: EU-LFS 2021, custom extraction by Milieu.

The Greater Region has the highest number of frontier workers in the European Union (almost 250 000). Around 50% of all flows are directed towards Luxembourg. Most flows start from Lorraine (50%), 109 000 people commute between Lorraine and Luxembourg. This number is highest even when compared with border regions in other macro-areas. Similarly to Alsace, the comparatively high unemployment rate in Lorraine<sup>190</sup> may be pushing workers to find jobs in neighbouring regions.

Saarland is also a destination for frontier workers from Lorraine. This flow entails, to a relatively high extent, atypical frontier workers, namely individuals of German nationality who work in Germany but moved their residency to Lorraine. According to a latest report on the labour market in the Greater Region<sup>191</sup>, almost 30% of all frontier workers going to Saarland have German nationality<sup>192</sup>.

## The Centrope Region

In the **Centrope region** East and West Europe meet. The area includes around 86 000 km<sup>2</sup> and a total of 11 million people who come from border regions of Austria (Vienna, Lower Austria, Burgenland), Slovakia (Bratislava and Western Slovakia), Hungary

<sup>189</sup> IBA-OIE (2021).

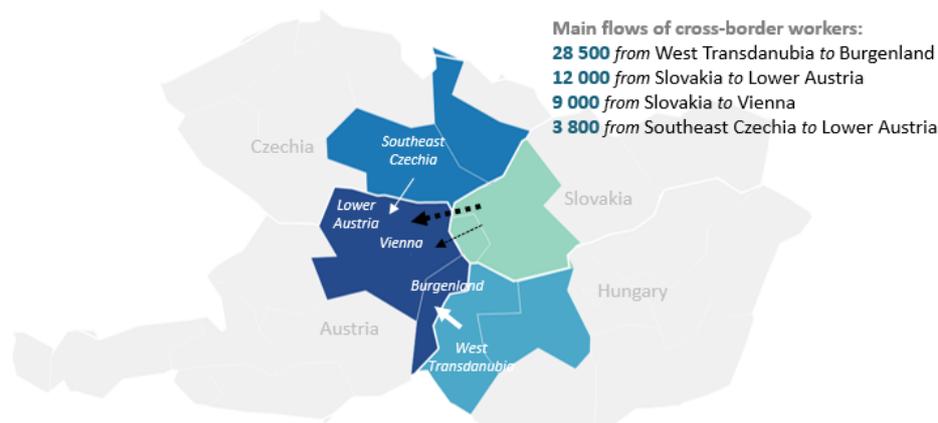
<sup>190</sup> Unemployment rate in Lorraine is around 8%, the highest among the bordering regions in the macro-area. See macro-region profile in Annex D for more detail.

<sup>191</sup> IBA-OIE (2022), 'Les effets de la crise sanitaire sur le marché du travail en Grande Région', 13th report of IBA-OIE, IBA-OIE.

<sup>192</sup> Atypical frontier workers are common in Luxembourg as well, however, updated data is not available. In 2019 around 10 000 frontier workers of Luxembourgish nationality lived in Germany, Belgium and France and commuted to Luxembourg; cf. Ibid.

(Central and Western Transdanubia) and Czechia (Southeast and Central Moravia). Besides the regions hosting the two capitals of Vienna and Bratislava, the rest of the area is scarcely populated without strong economic structures. East-West welfare gaps are however evident, with Austrian regions enjoying relatively higher living standards. Despite the initial integration efforts following the expansion of EU borders at the outset of the 21<sup>st</sup> century, cooperation across bordering regions is rather weak and fading over the years<sup>193</sup>. A full profile of the macro-region is in Annex D.

**Figure 48: Main bordering regions and direction of flows within the Centrope region, 2021**



Note. Thicker arrows indicate flows above 10 000 workers, black and dashed arrows indicate data source different from EU-LFS. For flows from Slovakia to Austria, only information on the regions of work is available, therefore Slovak regions of origin are not indicated in the map. There are also significant flows between Central Transdanubia and Burgenland (around 5 000 workers) but since the focus is on bordering regions, this figure is not depicted in the map. There are also flows between Southwest Czechia and Upper Austria (around 4 000 workers), however these regions are not coloured in the map as not part of the Centrope region as defined here.

Source: EU-LFS 2021, custom extraction by Milieu. Statistics Austria, 2021.

Within the Centrope region, the main flows are towards Austrian regions, with the main region of origin being West Transdanubia in Hungary and the main region of destination being Burgenland in Austria. Besides West Transdanubia, some commuting also happens between non-bordering regions; 10 000 and 3 000 cross-border workers to Burgenland come indeed from the central and southern parts of the Transdanubia region. In addition, around 3 000 workers are also commuting from Budapest to Burgenland.

Bordering regions between Hungary and Austria are characterised by “mobility cascades”; cross-border commuters from Hungary go to Burgenland for work, while local Austrian population leaves Burgenland for Vienna and Lower Austria. This situation is quite different from the rest of the border regions considered in this chapter where the destination of cross-border commuters are generally agglomerations and centres of economic power in themselves.

Data at NUTS-2 level for Slovakia is not available, as it may be below the publication thresholds. This may indicate that commuters from Slovakia do not come from a specific region, but are rather more disaggregated across the country. According to Statistics Austria, around 35 500 workers commuted from Slovakia to Austrian regions in 2020. The vast majority (60%) goes to Lower Austria (12 000) and (9 000) Vienna. As shown in Section 3.3.2, cross-border workers from Slovakia are decreasing over time. The improvement in economic and living conditions of Slovak regions may indeed result in

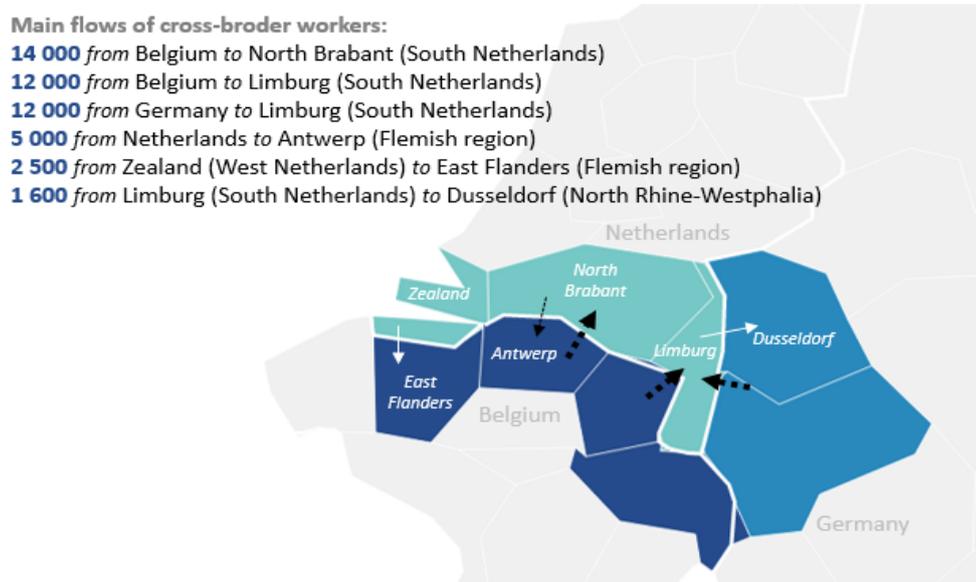
<sup>193</sup> The issue of weak cross-border cooperation within Centrope is further developed in Section 3.4.3.

workers finding more opportunities within the country and thus shifting towards the local labour market.

## The Meuse-Rhine region

The **Meuse-Rhine region** extends along the German, Dutch and Belgian borders. It covers an area of around 34 000 km<sup>2</sup> and has a total population of 19 million people coming from the German regions of Dusseldorf and Cologne, the Belgian provinces of Limburg, Antwerp, East Flanders and Prov. Liège, and the Dutch provinces of Zeeland and South Netherlands. The whole area is densely populated and hosts several important urban cities such as Antwerpen and Gent in Belgium, Tilburg, Breda and Eindhoven in the Netherlands and Dusseldorf and Cologne in Germany. Regions have very similar socio-economic characteristics and several cross-border partnerships are in place to support cooperation (e.g. EURES, Meuse-Rhine Euregio, Scheldemond Euregio). A full profile of the macro-region is in Annex D.

**Figure 49: Main bordering regions and direction of flows within the Meuse-Rhine region, 2021**



Note: Thicker arrows indicate flows above 10 000 workers, black and dashed arrows indicate data source different from EU-LFS. For flows from Belgium and Germany to the Netherlands, and from the Netherlands to Antwerp (BE) only information on the regions of work is available, therefore regions of origin are not indicated in the map. Low reliability for Limburg (NL) to Dusseldorf.

Source: EU-LFS 2021, custom extraction by Milieu. CBS, 2021.

According to EU-LFS data, commuting happens mainly between Belgian and Dutch border regions, in particular from Zeeland to the Belgian province of East Flanders. Several commuters also travel for work from Limburg in the Netherlands to Regierungsbezirk Dusseldorf. Given the relatively high attractiveness and economic development of Dutch regions, one would expect commuting to happen also in the direction of those regions, but these streams are not showing up in EU-LFS data.

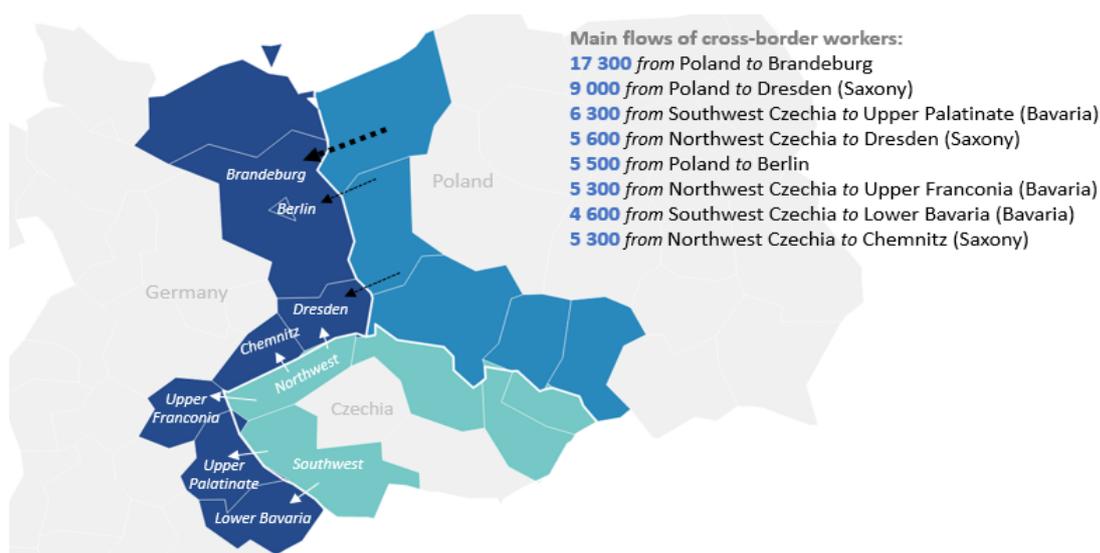
According to data from the Dutch Central Bureau for Statistics (CBS) next to the Dutch workers going to Antwerp province in Belgium (5 000) there are strong flows towards the Netherlands. In particular, there is a significant number of commuters from Belgium going to North Brabant (14 000) and Limburg (12 000), and from Germany going mainly to Limburg (12 000).

Different from the other macro-regions, where flows happen mainly in a uni-directional way, the Meuse-Rhine macro-region is characterised by more two-directional commuting streams. Explanations may lie on the strong similarities between levels of living standards and economic development, socio-cultural factors (such as languages) and the relatively solid cross-border cooperation in place.

## The Tri-border region

The **Tri-border region** is an extensive area of 227 000 km<sup>2</sup> that hosts around 31 million inhabitants. This includes bordering regions between Germany (mainly Bavaria and Saxony), Poland (North- and Southwest and Silesian region) and Czechia (North- and Southwest regions). Within this macro-region, there is a more specific area where the three borders meet: the Dresden-Usti-Zielona Góra axis. The entire area has a rather weak economy with high levels of industrial activity<sup>194</sup>. The economies of German regions are driving the development in the area. Given the vast size of the macro-region, as defined here, cooperation relies often on local initiatives (e.g. Cieszyn-Český Těšín) or EU-funded initiatives (e.g. Euroregion Neisse-Nisa-Nysa or Euroregion Silesia). A full profile of the macro-region is in Annex D.

**Figure 50: Main bordering regions and direction of flows within the Tri-border region, 2021**



*Note:* Thicker arrows indicate flows above 10 000 workers, black and dashed arrows indicate data source different from EU-LFS. For flows from Poland to Germany, only information on the regions of work is available, therefore Polish regions of origin are not indicated in the map.

*Source:* EU-LFS 2021, custom extraction by Milieu. Bundesagentur für Arbeit, 2021.

The low levels of integration across regional labour markets are also evident from the rather low numbers of cross-border workers. Several commuters travel in the Dresden-Usti-Zielona Góra axis (14 600), mostly in the direction of Dresden. Strong flows are also between Southwest Czechia and Upper Palatinate (6 300) and Lower Bavaria (4 600) regions in Germany. The north of Czechia also has several outgoing cross-border commuters towards Saxony, namely Dresden and Chemnitz.

<sup>194</sup> The average GDP per capita (in PPS) within the region is 26 000 euros, well below EU average of almost 30 000 euros, and the economy is relatively highly focused on manufacturing. See the region profile in Annex D.

Data of cross-border commuters from Poland are not available, as below the publication thresholds. Similarly to the case of Slovakia, this may indicate that commuters from Poland are more equally distributed across the country. According to the German Bundesagentur für Arbeit the main German regions of work for commuters from Poland are Brandenburg (17 300, 44%) and Saxony (13 000, 33%); in the latter, 70% (9 000) of cross-border commuters are directed to Dresden. Smaller flows are directed to Berlin (5 500, 14%) and Mecklenburg-Western Pomerania (4 000, 11%).

Cross-border flows between Czech and Polish bordering regions are more limited. However, qualitative evidence shows that there are certain areas where more integration can be observed. Those flows are mainly uni-directional; Poles being attracted by the growing industries (mainly mining, steel and automotive) in Czech regions. Most of these firms are local businesses that rely on their own recruitment processes (often conducted on the other side of the border to tap into a wide pool of labour)<sup>195</sup>.

### 3.4.2 Demographic and socio-economic characteristics of cross-border workers across the main bordering regions

Building on the overview of macro-regions and directions of flows, this section compares the demographic and socio-economic characteristics of cross-border or frontier workers across selected bordering regions within these macro-regions. The bordering regions that will be investigated here have been selected according to the significance of cross-border flows, subject to data availability. To ensure a wide geographical coverage, at least one bordering region is selected from each macro-region.

The data used for this section come mainly from national or regional sources, as the limitations of EU-LFS data mean that it is not possible to investigate demographic or socio-economic aspects of cross-border work in specific regions. Table 35 gives an overview of the datasets used for this section and the level of disaggregation available. Data on occupations is not collected in national statistical offices (or not publicly available online) and it cannot be analysed via EU-LFS data either, therefore only qualitative, anecdotal evidence can be used.

**Table 35: Datasets used in the section and disaggregation level, by topic**

Topic	Data used	Disaggregation level
<b>Gender</b>	EU-LFS for flows to AT	Country to country
	CBS for flows to BE	Country to NUTS-2
	Bundesagentur für Arbeit for flows to DE	Country to NUTS-2
	Portail de l'emploi for flows to LU	NUTS-2 to NUTS-2
	Federal Statistical Office for flows to CH	Country to NUTS-2
<b>Age</b>	EU-LFS for all	Country to country
<b>Education (ISCED)</b>	EU-LFS for all	Country to country
<b>Occupation</b>	Not available	-
<b>Economic Sector (NACE)</b>	EU-LFS for flows to AT and DE	Country to country
	CBS for flows to BE	Country to NUTS-2
	Portail de l'emploi for flows to LU	Country to country
	Federal Statistical Office for flows to CH	Country to NUTS-2

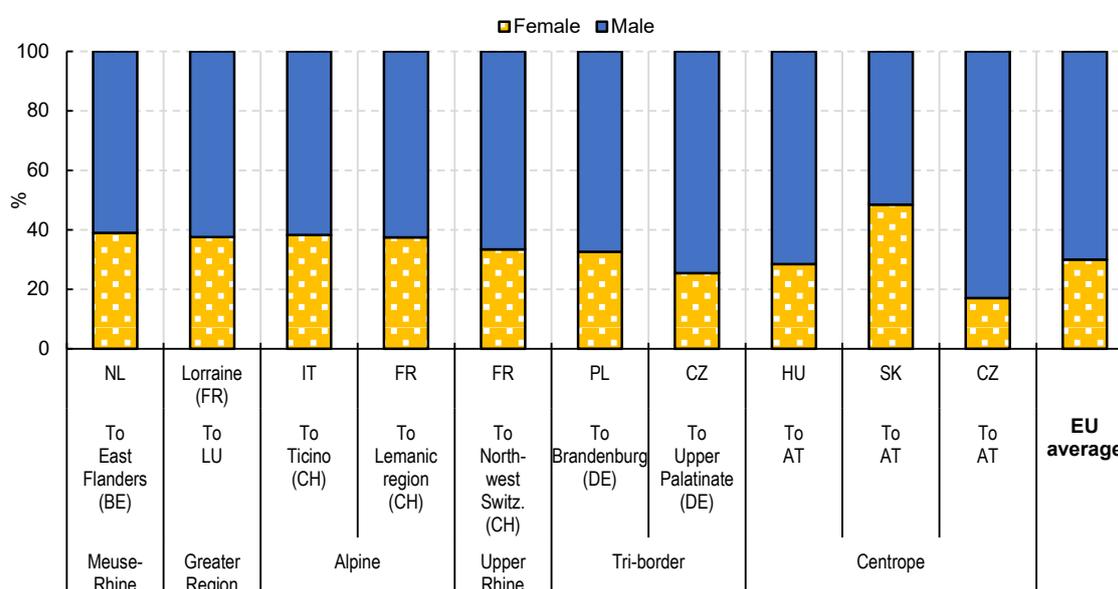
Source: Milieu elaboration.

<sup>195</sup> Böhm and Opiola (2019), 'Czech–Polish Cross-Border (Non) Cooperation in the Field of the Labor Market: Why Does It Seem to Be Un-De-Bordered?', *Sustainability*, 11(10).

## Demographic and socio-economic characteristics of cross-border workers across the main cross-border regions

When looking at demographic aspects, what catches the eye is that men dominate in all macro-regions. Some disparities arise upon second glance. Flows of selected bordering regions in Meuse-Rhine, Alpine and Upper-Rhine regions and Greater Region seem to have a very similar gender composition, with women making up 30 to 40%. On the other hand, flows within Centrope and Tri-border regions are relatively more skewed towards men. Around 80% of workers from Czechia to Upper Palatinate or Austria are men. Workers from Slovakia to Austria are a notable exception with almost an equal gender distribution.

**Figure 51: Cross-border and frontier workers by gender in selected bordering EU and EFTA countries or regions (%), 2021**



Note. Data from Netherlands to Belgium is from 2019. Different datasets have been used according to data availability. Different sources entail slightly different definitions of cross-border workers: flows to Switzerland represent foreign frontier workers with a G permit (thus returning to their place of residence at least once a week); flows to Luxembourg represent frontier workers affiliated to Luxembourgish social security; flows to Germany represent foreign employees subject to social security contributions (SvB); flows to Belgium and Austria represent workers whose place of residence is different from the country of work. Low reliability for female Slovakia to Austria and female Czechia to Austria. Some bordering regions in the Upper-Rhine and Alpine regions and Greater regions are not shown as data very similar to the ones depicted. Full picture can be found in Table 42 in Section 3.6.

Source: Flows to Austria from EU-LFS 2021 (custom extraction by Milieu); those to Switzerland from Swiss Federal Statistical Office; those to Luxembourg from Portail de l'emploi de Luxembourg; those to Germany from German Bundesagentur für Arbeit; those to Belgium from CBS. Milieu elaboration.

A relatively higher share of men is not surprising when considering that the main sectors of cross-border commuters are manufacturing and construction. In addition, commuting often entails long working days and this is incompatible with the general distribution of tasks within the household<sup>196</sup>. This is particularly noticeable in the border regions between Austria, Czechia and Hungary. Even if in Austria the tourism sector, which

<sup>196</sup> C.f. Giménez-Nadal and Molina (2020), 'The Gender Gap in Time Allocation in Europe', *IZA Discussion paper*, 13461.

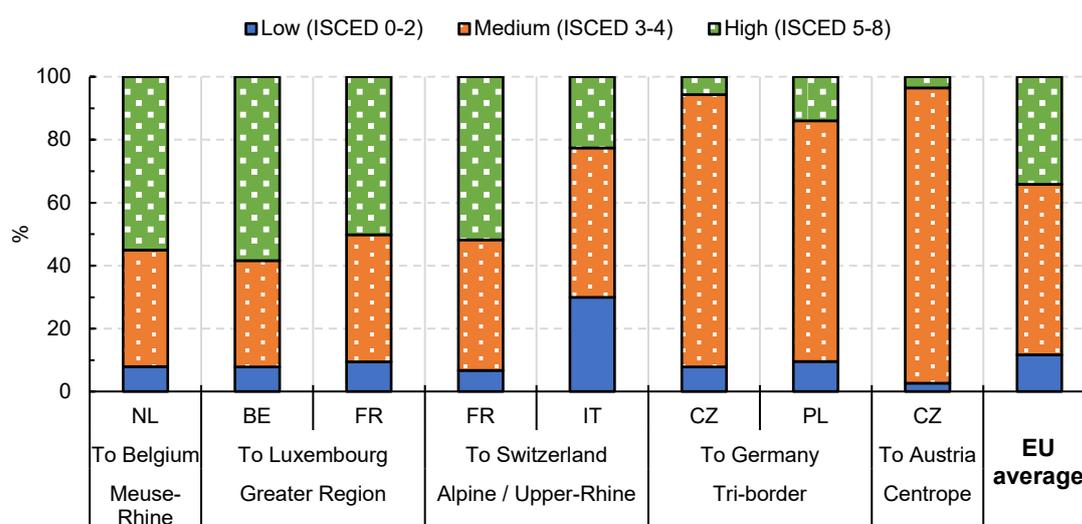
normally employs a high share of women, is particularly important<sup>197</sup>, cross-border workers from neighbouring countries are still predominantly men.

Turning to age groups (Table 43 in Section 3.6), no significant differences arise between the different main border regions. Most cross-border workers are between 35-49 years old. Commuters in the Greater Region have the highest share of workers between 20 and 34 years old (35%), while those going to Switzerland from Italy have the highest share of 50-64 years old (27%).

## Educational attainment

When looking at education levels, large disparities appear. While cross-border workers in selected bordering regions in Meuse-Rhine, Alpine / Upper Rhine regions and Greater Region are likely to be highly educated, those within the Tri-border and Centrope regions have mostly medium education levels. Those findings are in line with sectoral differences; a considerable share of cross-border workers to Luxembourg and Switzerland, for instance, are employed in professional, scientific and technical activities, which in general require high skills<sup>198</sup>.

**Figure 52: Cross-border workers by education level in selected bordering EU and EFTA countries (%), 2021**



Note: Low reliability for Czechia to Austria and Czechia to Germany (for high education). No data for Germany to Switzerland and to Luxembourg and from Hungary to Austria. This figure uses data at country level and thus it is not possible to differentiate between the parts of France that belong to the Alpine region and those that belong to the Upper-Rhine. Therefore, those two macro-areas are depicted together in this chart.

Source: EU-LFS 2021, custom extraction by Milieu.

## Economic sectors

Table 36 shows the sectoral ‘specialisation’ of cross-border workers in selected cross-border relationships. The data indicates that workers within Centrope and Tri-border regions are very much concentrated in few sectors (mostly industries), whereas in the

<sup>197</sup> A relatively high share of workers in Austrian regions is employed in tourism-related activities (around 20%). The tourism sector grew 9.2% since 2020. See the macro-region profile in Annex D for more context.

<sup>198</sup> See sub-section on labour market differences below.

other macro-regions cross-border workers are distributed across a wider range of activities (mostly service-related).

**Table 36: Cross-border and frontier workers by economic sectors in selected bordering EU and EFTA countries or regions (%), 2021**

	Meuse-Rhine	Upper Rhine	Alpine		Greater Region			Centrope		Tri-border		EU average
	NL	DE	FR	IT	DE	BE	FR	CZ	HU	CZ	PL	
	To Belgium East Flanders	To Switzerland Nordwest Espace Mitteland Ticino			To Luxembourg			To Austria		To Germany		
<b>INDUSTRIES</b>	38	39	50	34	30	22	23	81	43	69	71	46
<i>out of which:</i>												
Manufacturing	29	31	45	22	12	9	10	56	21	48	40	26
Construction	7	6		11	17	13	12	25	22	21	31	20
<b>SERVICES</b>	62	61	50	66	69	77	76	19	49	31	29	49
<i>out of which:</i>												
Wholesale and retail trade	11	9	11	16	12	16	16		10			9
Transportation and storage	9				10	9	5		11	13	29	9
Professional, scientific and technical		13	8	12	9	13	9					4
Human health and social work	11	13	9	6	11	8	7			7		10
Accommodation and food service				5				19	28	6		5
Administrative and support service	13	7	11	10		6	13					
Financial and insurance					14	12	11					
<b>AGRICULTURE</b>									8			5

Note. Only data for sectors where share is at least 5% are shown. Data from Netherlands to Belgium is from 2019. Different datasets have been used according to data availability. Different sources entail slightly different definitions of cross-border workers: flows to Switzerland represent foreign frontier workers with a G permit (thus returning to their place of residence at least once a week); flows to Luxembourg represent frontier workers affiliated to Luxembourgish social security; flows to Belgium, Germany and Austria represent workers whose place of residence is different from the country of work. Low reliability for Czechia to Austria (for construction and accommodation activities), Hungary to Austria (for agriculture, trade and transport activities), and Czechia to Germany (for accommodation and health services).

Source: Flows to Austria and Germany from EU-LFS 2021 (custom extraction by Milieu); those to Switzerland from Swiss Federal Statistical Office; those to Luxembourg from Portail de l'emploi de Luxembourg; those to Belgium from CBS. Milieu elaboration.

Manufacturing and construction play a particularly important role among cross-border commuters to Austria and Germany. Within the Tri-border macro-area, 40% of all frontier workers from Czechia and Poland to Germany are employed in simple physical or manual activities, and only 3-5% are in complex or highly complex jobs (requiring more specialised knowledge)<sup>199</sup>. Indeed, frontier workers from Eastern European countries such as Poland and Czechia to Germany are frequently employed as truck drivers (25%) and warehouse helpers (10%)<sup>200</sup>.

Turning to Centrope, the Hungarian-Austrian border stands out for the relatively higher share of cross-border workers in accommodation and food service activities (28%) and of those in agriculture (8%), which in other areas play an insignificant role. Jobs in the primary sector in Austria are mainly located in the Burgenland region, where cross-border workers from the Hungarian border regions represent a valuable contribution to the local workforce<sup>201</sup>.

<sup>199</sup> The picture looks sharply different for incoming workers from Western European countries; shares of those in complex or highly complex activities range from 65% (Switzerland) to 40% (Belgium). France is a notable case as it has a relatively higher share of workers in menial jobs (26%) and a relatively lower share of those in complex jobs (17%). Cf. Seibert (2021).

<sup>200</sup> Ibid.

<sup>201</sup> Tamás (2017), 'Statistical, Demographic and Spatial Characteristics of Cross-Border Commuting in Hungary', *Területi Statisztika*, 57(4).

In contrast, flows within the Greater Region and the Upper Rhine, Alpine and Meuse-Rhine regions are more concentrated on services, especially those entailing higher skills and education levels, such as professional scientific and technical activities. The Upper Rhine region, for instance, has a developed high tech sector with headquarters and research centers of several big companies and explicitly claims to cooperate to share research, knowledge and innovations in the most effective way<sup>202</sup>. Similarly, within the Alpine region, there is a relatively high share of frontier workers from Italy to Ticino who are highly skilled and employed in professional, scientific and technical activities, which require a large amount of theoretical and factual knowledge in a specialised field<sup>203</sup> – however, in the wider population of cross-border workers between Italy and Switzerland, many are in sectors that are less specialised.

Notably, a relatively high share of frontier workers within the Greater Region is also employed in the financial sector. This is a result of the economic restructuring undertaken by Luxembourg since the end of 1960s. The country, at the time focused on industrial activities, re-oriented its productive apparatus towards the service sector, particularly financial and banking fields, to attract foreign capital and boost its development and internationalisation. The growth of the Luxembourgish economy triggered also demand for, in particular highly skilled, workers from the neighbouring countries<sup>204</sup>.

### 3.4.3 Institutional, economic, and cultural disparities

This section looks at factors that *push* or *pull* frontier work and characterise the macro-regions identified above. Those factors are mainly related to the institutional context and cooperation, and economic and cultural disparities across bordering regions. However, giving an exhaustive list of push and pull factors is not the aim of this section<sup>205</sup>.

An important role in facilitating the integration of cross-border labour markets is played by **cross-border partnerships**, which close information gaps and provide the necessary support to engage in frontier work (via e.g. job placement services)<sup>206</sup>. Most of the macro-regions have strong institutional ties. The most notable example is the Greater Region, where several transnational bodies monitor and support frontier work under the strategic guidance of the Summit of the Greater Region<sup>207</sup>. Similar structure is in the Upper-Rhine region with the Franco-German-Swiss Conference that acts as a central coordination

<sup>202</sup> One example is 'Eucor – The European Campus' supported by the universities of Basel, Freiburg im Breisgau, Haute-Alsace, Strasbourg and the Karlsruher Institut für Technologie. The aim is to cross-border research and training in key areas including science and technology. For more information, cf. Eucor (2022), *Eucor - The European Campus* [Online]. Available online: <https://www.eucor-uni.org/en/> [Accessed 16 November 2022].

<sup>203</sup> Compared to other Kantons, Ticino hosts a more significant share of frontier workers employed in professional activities. In 2019, this share was 26% for Ticino vs 6% for the Lemanic region; cf. BAK Economics (2021).

<sup>204</sup> IBA-OIE (2020), 'Situation du marché de l'emploi dans la Grande Région - Observer pour agir', *12th report of IBA-OIE*.

<sup>205</sup> C.f. European Commission (DG EMPL) (2009); European Commission (DG REGIO) and AEBR (2020), 'B-solutions - Solving border obstacles: A compendium of 43 cases', Publications Office of the EU, Luxembourg. Available online: <https://op.europa.eu/en/publication-detail/-/publication/c62430f3-c4b0-11ea-b3a4-01aa75ed71a1/language-en>; European Commission (DG REGIO) (2021), 'Vibrant cross-border labour markets: Obstacles and solutions to cross-border cooperation in the EU', Publications Office of the EU, Luxembourg. Available online: <https://op.europa.eu/en/publication-detail/-/publication/e4b4ff8b-5bc3-11ec-91ac-01aa75ed71a1>

<sup>206</sup> Ludden and Jeyarajah (2019), 'Employment barriers in border regions: Strategies and EU funding', European Parliamentary Research Service, Brussels.

<sup>207</sup> There are other bodies that advise (e.g. Interregional Parliamentary Council, Economic and Social Committee of the Greater Region) or provide support (e.g. Interreg VA, sub-regional actors, House of the Greater Region) to the Summit. One of these actors is the Task Force Frontaliers (TFF 3.0) which aims to help frontier workers (their families and students) and employers to resolve legal and administrative problems linked to cross-border situations.

body. These institutional ties are often supported by EU-funded projects (e.g. Interreg A, EURES or Euregio cross-border partnerships)<sup>208</sup>.

Initiatives at the micro-level (e.g. partnerships between universities or employers) are another element to strengthen cross-border relations. Those are quite common within the Tri-border area, with one example being the joint program 'Cross-Border Vocational School Lessons' between the vocational schools in German Cham (Germany) and Domazlice (Czechia)<sup>209</sup>.

Collaboration ensures smoother flows of information across the borders and facilitates transnational solutions when needed. For instance, during the COVID-19 pandemic, the Greater Region supported cross-border workers by raising awareness of their problems towards higher levels of governance and decision-makers<sup>210</sup>, thus ensuring that cross-border workers were not unduly disadvantaged. The Centrope macro-region, on the other side of the spectrum, shows that developing such collaboration is not easy. Following the enlargement of the EU at the beginning of the 21<sup>st</sup> century, several initiatives had been put in place to enhance cooperation within the area, starting with the 2006 Interreg IIIA framework<sup>211</sup>. However, despite these efforts, cooperation has not taken up. No EURES cross-border partnership exists and past projects aiming at monitoring the labour market integration between the regions do not seem active anymore<sup>212</sup>.

Besides the institutional landscape and collaboration, other factors influencing the extent of frontier work are **economic disparities and wage differential**. Regions enjoying relatively higher levels of economic development offer attractive prospects for workers on the other side of the border. This is the case in almost all macro-regions identified. The stronger economies of Swiss, Austrian and German regions and Luxembourg act as pull factors for frontier workers in neighboring countries, resulting mainly in one-way flows. The only macro-region where commuting happens, to a relatively higher extent, in both directions is within the Meuse-Rhine macro-region, where the economies of bordering regions are comparably more similar.

<sup>208</sup> While listing all individual partnerships is outside the scope of this chapter, many can be identified e.g. in the list of members of the AEBR: <https://www.aebr.eu/members/>.

<sup>209</sup> A significant number of workers from Czechia to Germany goes towards Upper Palatinate in Bavaria (see Section 3.4.1). NUTS-3 level data from Bundesagentur für Arbeit show that almost 40% of those go to Cham, and 22% to Tirschenreuth. Both districts host a large share of medium to large companies working mainly in manufacturing. The aim of the joint programme is to facilitate the access to the German labour market for Czech graduates and get exposure to the corporate culture of German companies. Bornhofen, et al. (2018), 'Die binationale Berufsausbildung im bayerisch-tschechischen Grenzraum - ein Zukunftsmodell für Nachbarstaaten?', *IAB-Forschungsbericht*, 7/2018.

<sup>210</sup> See for instance the TFF 3.0 call on telework: Grande Région (2022), *La Task Force Frontaliers lance un appel sur le télétravail* [Online]. Available online: <https://www.granderegion.net/en/Aktuelles/2022/La-Task-Force-Frontaliers-lance-un-appel-sur-le-teletravail> [Accessed 16 November 2022]. For more information on the added value of cross-border structures and agreements during the pandemic, cf. Peyrony, et al. (2021), 'The effects of COVID-19 induced border closures on cross-border regions: 20 case studies covering the period March to June 2020', European Commission (DG REGIO), Brussels.

<sup>211</sup> Those were kickstarted by the agreement reached at the political conference held at Kittsee Palace in 2003 ("Building a European Region") between the mayors and local governors that legitimised the Centrope region. C.f. Wassenberg and Reitel (eds.) (2020), *Critical Dictionary on Borders, Cross-Border Cooperation and European Integration*, Brussels, Peter Lang Verlag, , pp. 167-171. For more information, see Stadt Wien (2022), *Centrope* [Online]. Available online: <https://www.wien.gv.at/wirtschaft/eu-strategie/centrope.html> [Accessed 17 November 2022].

<sup>212</sup> Few examples are LAMO I and II (Labour Market Monitoring) 2003 – 2006, and FAMO I and II (Monitoring of skilled labour) 2008 – 2011, which aimed at monitoring trends in labour migration and mapping skills and life conditions in the border regions between Eastern Austria and Slovakia. Examples of publications available using this data are: Hudler-Seitzberger, et al. (2011), 'Labour Migration in the Border Region: The Contextual Framework', Slovakian Institute for Labour and Family Research Bratislava; Bittner and Hudler-Seitzberger (2006), 'Labour market monitoring - Structure, motives, expectations and desires of the labour migration potential in the border regions of the Slovak Republic, the Czech Republic and Hungary with Austria', *SWS - Rundschau*, 46(4).

As it is the case that strong economies pull frontier work, the opposite is also true; weak economic structures and the lack of urban centers limit the flows. This is particularly pronounced in the Centrope macro-region as, besides the capitals of Vienna and Bratislava, the remaining regions are scarcely populated and lack major urban centers. This includes the Austrian regions of Burgenland and Lower Austria, which are predominantly rural and have lower levels of economic development relative to the rest of the country<sup>213</sup>.

Lastly, **socio-cultural differences and history** also play an important role in the extent of frontier work. In the Tri-border region, this means that knowledge of the language on the other side of the border is rather low and leads to a lack of trust, limited cooperation between public authorities and misunderstandings regarding working conditions across the border. For instance, a study on the German-Czech border found that only a small portion of Bavarians would consider working in Czechia either due to impressions of worse working conditions across the border (whether correct or not), and due to differences in salary<sup>214</sup>.

Linked to the socio-cultural differences are the differences in the education and vocational training system. Even so for some occupations professional qualifications are recognised within the EU<sup>215</sup>, there remain instances where cross-border workers are not able to adequately communicate their skills with employers, thus increasing the risk of skills mismatch. This is an issue within Centrope and results in more cross-border workers from Czechia, Slovakia and Hungary ending up in jobs for which they are over-qualified<sup>216</sup>. Similarly, employment agencies in the Meuse-Rhine macro-region have more difficulties placing jobseekers in Germany than in the Netherlands as German employers require the right diplomas or certificates and lack knowledge on training courses from the neighbouring country<sup>217</sup>.

On the other side, in the Greater Region the recognition of skills and qualifications seems to be no problem: a 2020 study conducted by ASTI (Association de Soutien aux Travailleurs Immigrés a.s.b.l.) surveyed around 500 cross-border workers from France, Belgium and Germany to Luxembourg and found that around 50% of cross-border workers cited the match between qualifications and job requirements as one of the top reasons to work in Luxembourg (21% cited it as the main reason)<sup>218</sup>.

### 3.5 Heterogeneity of cross-border work in Europe

The extent of cross-border work within Europe has been increasing over the years and commuting workers are coming from a wider range of countries compared to only 7 years ago, where the phenomenon was more concentrated among Western European

<sup>213</sup> See macro-region profile in Annex D for more information.

<sup>214</sup> Association of European Border Regions (AEBR) (2012).

<sup>215</sup> Directive 2005/36/EC on the recognition of professional qualifications. Further information on regulated professions and their mobility can be found in the Regulated professions database: European Commission (2022e), *Regulated professions database* [Online]. Brussels: European Commission (DG GROW). Available online: <https://ec.europa.eu/growth/tools-databases/regprof/index.cfm?action=homepage> [Accessed 7 October 2022].

<sup>216</sup> Haindorfer (2020).

<sup>217</sup> Teerling (2019), 'Anerkennung und Akzeptanz von Abschlusszeugnissen in der beruflichen Bildung', EUREGIO, Gronau.

<sup>218</sup> ASTI (2020), *Sondage Vivre-ensemble – les frontaliers et le Luxembourg* [Online]. Available online: <https://www.asti.lu/sondage-3eme-volet/> [Accessed 16 November 2022]. ASTI is a non-governmental organisation created in 1979 in Luxembourg.

countries. Despite this, cross-border workers remain a rather small share of the total workforce in nearly all Member States.

The low numbers also mean that this phenomenon is rather complex to capture with available data. In addition, the national and regional offices that do compile data on cross-border workers use often different definitions or compilation methods. In this context, EU-LFS remains a valuable source of information, providing harmonised data available for all Member States, hence allowing comparison across countries and over time. However, this data presents several limitations when going at the regional level due to the small size of the sub-populations.

Studying cross-border work at the highest level of disaggregation possible is essential to better capture trends and patterns. Indeed, this study reveals that the phenomenon is highly heterogeneous and that concrete situations differ widely from the average at the EU-level. Different contexts host cross-border workers with different profiles in term of socio-economic and demographic characteristics.

Different contexts are also shaped by different factors influencing the choice of workers to engage in cross border work, which cut across several different disciplines. Some of those factors are socio-cultural, such as language disparities, while others are of a more economic nature, such as wage differential or differences in sectoral structure of economies. To not disregard are also aspects related to more foundational conditions, such as the efficiency of transport network, the topography of the area, the level of urbanisation and so on.

A further key aspect influencing the extent and nature of cross-border work is the degree of cooperation and institutional integration within the area. In macro-regions where cooperation is stronger, cross-border workers are generally better supported and can benefit from a more harmonised system of rules and frameworks. Cooperation is however a complex process requiring sustained political will to evolve and may take time to emerge organically and develop.

### 3.6 Supplementary tables

**Table 37: Mapping of national and regional data available for cross-border and frontier workers**

Border region	Source of data	Description and coverage
<b>Austria, Germany, France and Italy to Switzerland</b>	Swiss Federal Statistical Office	Foreign frontier workers with a G permit working in Switzerland (returning to their place of residence abroad at least once a week), by canton of work, country of residence, economic division and sex. Quarterly data, 2002-2022
<b>Germany, France and Belgium to Luxembourg</b>	Portail de l'emploi de Luxembourg	Frontier workers subject to Luxembourgish social security who work in Luxembourg but reside in another EU Member State where they return at least once a week, by commune of residence, sex, status (temporary, permanent), economic sector. Annual data, 2019-2022.
	Statistiques Luxembourg	Frontier workers, by place of residence and nationality. Quarterly or annual data, 2015-2022.
	Statistiques Grande Region	Workers whose place of residence is different than the place of work, by place of work and residence. Annual data, 2020-2022.
<b>Austria, Switzerland, Czechia, France, Netherlands and Poland to Germany</b>	German Bundesagentur für Arbeit	Employees working in Germany subject to social security contributions (SvB) who live in another country, by province of work, country of residence and sex. The frequency of commuting is not considered. Annual data, 2013-2021. <sup>219</sup>
<b>Hungary, Slovakia, Germany, Slovenia, Czechia, and Italy to Austria</b>	Statistics Austria	Commuters working in Austria coming from other countries, by nationality and province of work. The frequency of commuting is not considered. Annual data, 2019-2020. <sup>220</sup>
<b>Germany, Belgium, Netherlands</b>	CBS	Workers who are resident in Belgium, Netherlands or Germany working in regions that are not in their country of residency, by gender and economic sector. Annual data, 2010-2019.
<b>Sweden, Denmark, Norway</b>	Nordic Statistics	Cross border commuters by type of municipality, region of residence, sex, age, time and country of work. Annual data, 2015-2018
<b>Belgium</b>	National Bank of Belgium	Cross border workers. Annual data, 2016-2020
	National Institute for Health and Disability Insurance (RIZIV/INAMI)	Frontier workers subject to Belgian (or other countries) social security, by province/country of origin/work. Annual data, 2007-2021.
<b>Bayern (DE) and neighbouring countries</b>	Statistik Bayern	Employees subject to social insurance working in Bayern and living in neighbouring countries, by sex and age groups, 2021

<sup>219</sup> Further detail can be provided for a fee.

<sup>220</sup> Further information on sex, age, and status in employment can be provided for a fee.

Border region	Source of data	Description and coverage
<b>Sachsen (DE) and neighbouring countries</b>	Statistik Sachsen	Employees subject to social insurance working in Saxony and living in neighbouring countries, by sex and age groups, 2021
<b>Latvia</b>	Central Statistical Office	Workers commuting from “foreign country” to Latvia, by region of residence, in 2021. <sup>221</sup>
<b>France, Germany and Switzerland</b>	Conference Franco-Germano-Suisse du Rhin Supérieur	Frontier workers by region of work and residence (2018 and change between 2008-2018)
	EURES-T Oberrhein / Rhin Supérieur	Frontier workers by place of residence and of work, age, sex and economic sector. Annual data, 2004-2021.
<b>France and Switzerland</b>	Observatoire statistique transfrontalier	Frontier workers within the Franco-Valdo-Genevois area, since 1999.

**Table 38: Cross border workers by educational attainment and gender in the EU and EFTA, 2021**

Education (ISCED)	Male		Female		Total	
	1 000s	%	1 000s	%	1 000s	%
High (5-8)	344	61	222	39	567	34
Medium (3-4)	670	74	230	26	900	54
Low (0-2)	149	77	44	23	194	12

Note. EU and EFTA citizenship included. Disaggregating EU and EFTA countries of origin and destination is not possible due to data limitations.

Source: EU-LFS 2021, custom extraction by Milieu

**Table 39: Cross-border workers by occupation and gender in the EU and EFTA, 2021**

Occupation (ISCO 1D)	Male		Female		Total	
	1 000s	%	1 000s	%	1 000s	%
Clerical support	33	40	49	60	81	5
Craft and related trades	359	94	23	6	381	25
Elementary occupations	87	59	61	41	148	10
Managers	62	77	18	23	80	5
Plant and machine operators and assemblers	153	88	21	12	174	11
Professionals	183	63	105	37	288	19
Service and sales	54	41	79	59	133	9
Technicians and associate professionals	157	61	100	39	257	17

Note. EU and EFTA citizenship included. Disaggregating EU and EFTA countries of origin and destination is not possible due to data limitations. Armed forces occupations and agricultural workers not shown due to low shares or data availability.

Source: EU-LFS 2021, custom extraction by Milieu.

<sup>221</sup> The Population and Housing Census Atlas will be accessible as of November 2022 where more data will be available on workers employed in foreign countries (by sex, occupation, economic sector).

**Table 40: Cross-border workers by sector and gender in the EU and EFTA, 2021**

Economic Sector (NACE)	Male		Female		Total	
	1 000s	%	1 000s	%	1 000s	%
Agriculture	49	76	15	24	64	5
Manufacturing	296	78	82	22	378	28
Construction	286	100			286	21
Wholesale and retail trade	83	66	43	34	127	9
Transportation and storage	116	88	16	12	132	10
Accommodation and food service	35	50	35	50	70	5
Financial and insurance	25	62	15	38	40	3
Professional, scientific and technical	32	58	23	42	54	4
Administrative and support service	26	56	21	44	47	3
Education	15	48	16	52	30	2
Human health and social work	31	22	111	78	142	10

Note. EU and EFTA citizenship included. Disaggregating EU and EFTA countries of origin and destination is not possible due to data limitations. Mining and quarrying, electricity, water supply, real estate activities, public administration and defence, other service activities, activities of extraterritorial organisations, information and communication, arts, and activities of households as employers not shown due to low shares or data availability.

Source: EU-LFS 2021, custom extraction by Milieu

**Table 41: Cross-border workers by gender and age group in the EU and EFTA, 2016-2021**

	2016	2017	2018	2019	2020	2021	Trend
<b>Gender (1 000s)</b>							
Female	493	542	528	534	484	496	
Male	1196	1199	1194	1248	1195	1158	
<b>Gender (%)</b>							
Female	29	31	31	30	29	30	
Male	71	69	69	70	71	70	
<b>Age (1 000s)</b>							
20 - 34	562	555	550	584	495	510	
35 - 49	712	735	718	705	664	692	
50 - 64	379	413	430	455	436	438	
<b>Age (%)</b>							
20 - 34	34	33	32	33	31	31	
35 - 49	43	43	42	40	42	42	
50 - 64	23	24	25	26	27	27	

Note: EU and EFTA citizenship included.

Source: EU-LFS 2021, custom extraction by Milieu.

**Table 42: Cross-border and frontier workers by gender in selected EU and EFTA bordering regions, 2021**

Macro-region	Country / Region of work	Country / region of origin	1 000 s		%	
			Female	Male	Female	Male
Upper-Rhine	Northwest Switzerland	France	11	22	33	67
		Germany	13	25	34	66
Alpine	Espace Mitteland	France	9	18	34	66
	Lemanic region	France	49	82	37	63
	Ticino	Italy	28	45	38	62
Greater Region	Luxembourg	Prov. Luxembourg	14	24	36	64
		Trier	13	24	35	65
		Lorraine	40	67	38	62
Tri-border	Brandenburg	Poland	6	12	33	67
	Upper Palatinate	Czechia	3	9	25	75
Centrope	Austria	Czechia	2	10	17	83
		Hungary	13	33	28	72
		Slovakia	10	10	48	52
Meuse-Rhine	East Flanders	Netherlands	1	1	39	61

Note. Data from Netherlands to Belgium is from 2019. Different datasets have been used according to data availability. Different sources entail slightly different definitions of cross-border workers: flows to Switzerland represent foreign frontier workers with a G permit (thus returning to their place of residence at least once a week); flows to Luxembourg represent frontier workers affiliated to Luxembourgish social security; flows to Germany represent foreign employees subject to social security contributions (SvB); flows to Belgium and Austria represent workers whose place of residence is different from the country of work. Low reliability for female SK to AT and female CZ to AT.

Source: Flows to Austria from EU-LFS 2021 (custom extraction by Milieu); those to Switzerland from Swiss Federal Statistical Office; those to Luxembourg from Portail de l'emploi de Luxembourg; those to Germany from German Bundesagentur für Arbeit; those to Belgium from CBS. Milieu elaboration.

**Table 43: Cross-border workers by age group in selected EU and EFTA bordering countries, 2021**

Macro-region	Country of work	Country of origin	1 000s			%		
			20 - 34	35 - 49	50 - 64	20 - 34	35 - 49	50 - 64
Greater Region	LU	BE	14	19	9	34	45	22
		FR	35	45	22	35	44	21
Centrope	AT	CZ	3	5	2	28	48	24
		HU	15	19	12	32	42	25
Tri-border	DE	CZ	13	21	11	28	47	25
		PL	22	46	18	26	53	21
Alpine and Upper-Rhine	CH	FR	54	84	44	30	46	24
		IT	21	34	21	28	45	27
<b>EU average</b>			<b>510</b>	<b>692</b>	<b>438</b>	<b>31</b>	<b>42</b>	<b>27</b>

Note: Low reliability for Czechia to Austria (for 50-64 years) and Slovakia to Austria (for 20-34 years). No data for Germany to Luxembourg, Slovakia to Austria, Netherlands to Belgium and Germany to Switzerland.

Source: EU-LFS 2021, custom extraction by Milieu

## 4 Geographic mobility: a means to address skills mismatches and shortages in certain areas?

This chapter investigates occupational mobility among EU movers from 2016 to 2021. The first section examines employment trends at the occupational level across the EU and in selected Member States over the 2016-2021 period, focusing on employment growth and unmet labour demand. The following section measures the mobile labour supply, concentrating on the prevalence of EU movers and their education profile in selected occupations compared to nationals. The chapter closes by identifying signs of occupational imbalances in the form of labour shortages at the national level and assessing the extent in which EU movers can mitigate them.

### Key findings

#### **Overall findings**

- There are clear signs of a general shift towards professional occupations among EU movers from 2016 to 2021. This trend has been accompanied by a process of skill-based polarisation, i.e. thinning out the share of medium skilled workers.
- The contribution of EU movers to total employment is highest among occupations requiring low-to-medium skill, e.g. cleaners and helpers (10% of total employment; 559 000 movers); labourers in mining, construction, manufacturing and transport (8%; 334 000); and building and related trades workers (7%; 445 000).
- A limited number of occupations in which EU workers are prevalent in selected EU Member States (Germany, Spain, France, Italy, and the Netherlands) appear to be experiencing labour shortages, including: science and engineering professionals; labourers in mining, construction, manufacturing and transport; and business and administration professionals.
- However, considering the number of EU movers in these occupations relative to nationals within the selected Member States, these findings do not suggest that current levels and composition of intra-EU labour mobility can contribute to mitigate potential labour shortages significantly in the short-term.

#### **Demand for labour: employment growth and needs**

- At the EU level, professionals saw the strongest employment growth between 2016 and 2021 (4% vs. average of -0.7%) and job vacancy rate in 2021 (5% vs. average of 3.8%). Within this occupational group, information and communications technology professionals indicated the highest employment growth and job vacancy rates (8.2% and 13.1%, respectively).
- Elementary occupations saw the lowest employment growth rate (-2.3%) and job vacancy rate (3.7%).
- Among selected Member States, Italy and Bulgaria stand out for having relatively weaker employment growth in most occupations (-0.3 and -0.6%), while Spain, Poland, Romania and Bulgaria have the lowest job vacancy rates in nearly all occupations (rarely exceeding 4%).

**Supply of labour: intra-EU labour mobility**

- In 2021, the most popular occupations among EU movers were those experiencing total employment declines at the EU-level: cleaners and helpers (9% of total EU movers); building and related trades workers (7%); personal service workers and sales workers (6%); and labourers in mining, construction, manufacturing, and transport (5%). However, the share of EU movers relative to the total labour force remains relatively minor.
- Relative to nationals, EU movers were generally more qualified for occupations requiring a low skill level, indicating that movers are more likely to be “overeducated” compared to the local population.

**Occupational imbalances and the role of intra-EU labour mobility**

- Based on limited data availability it seems that only a few occupations that are prevalent among EU movers indicate signs of labour shortages, with science and engineering professionals being at the top of the list among the five Member States that were examined in further detail.
- In Italy, France and the Netherlands, signs of labour shortages are mainly indicated by occupations requiring low-to-medium skills: e.g. numerical and material recording clerks; labourers in mining construction, manufacturing and transport; and metal, machinery and related trades workers.
- In Germany and Spain, many occupations requiring a high skill level indicate signs of labour market pressures, such as: business and administration professionals; and science and engineering associate professionals.

**Limitations of measuring occupational mobility**

- The limitations of ISCO-2D categorisation, including its broad measurement of skills and tasks performed, and its tendency to mask important differences between and within occupations, hinder the ability to identify whether specific jobs, such as nurses or pharmacists, are experiencing labour shortages.
- For example, ISCO-2D classifies both carpenters and plumbers as ‘building and related trades workers’, despite their distinct skillsets which respond to different needs for labour. Thus, it may be that there is a shortage of carpenters while plumbers are in ample supply, but this level of specificity is obscured.
- It is important to keep in mind these limitations when interpreting the findings presented in this chapter.

## 4.1 Introduction

This chapter analyses the geographic mobility of EU movers at the occupational level. Thereby it aims to assess to what extent labour mobility can mitigate occupational imbalances, particularly concerning labour shortages at the country level, using quantitative data from the EU-LFS and CEDEFOP<sup>222</sup>.

Intra-EU labour mobility can play an important role in addressing occupational labour shortages in a variety of ways. One channel is through the movement of EU citizens to

<sup>222</sup> European Centre for the Development of Vocational Training (CEDEFOP) (2022b), *Occupation trends* [Online]. Available online: <https://www.cedefop.europa.eu/en/tools/skills-online-vacancies/occupations/trends>.

Member States where a certain set of skills or qualifications are in high demand. In order to meet unmet labour demand, a healthcare worker from one Member State could relocate to another where there is a shortage of healthcare professionals. Additionally, EU movers can contribute to an expansion of the overall labour pool for a variety of occupations and sectors, giving employers access to more qualified workers. Furthermore, EU movers could alleviate labour shortages in particular regions where unmet labour demand is high, contributing to a better geographic distribution of workers across the EU. Accordingly, the following sections aim to assess the extent to which these channels are effective in alleviating labour shortages by using various quantitative indicators to analyse EU movers at the occupational level.

As the following sections of this chapter analyse the movement of EU movers at the occupational level, it is important to note the significant impact of the COVID-19 pandemic on labour mobility during the 2020-2021 period. Governments of EU Member States implemented measures to limit cross-border movement, which limited intra-EU labour mobility depending on the nature of how an occupation is performed, with in-person work being affected more than jobs that could be performed remotely. However, this analysis of labour mobility over the 2016-2021 period suggests that, in most cases, the pandemic did not fundamentally alter existing patterns of labour mobility at the occupational level, but rather amplified pre-existing trends.

## 4.2 Demand for labour at the level of occupations

This section examines employment changes within occupations at the ISCO-2D level. *Ceteris paribus*, (positive) employment growth is typically interpreted as a signal of rising labour demand, while falling levels of employment (negative growth) is understood as reduced demand for the occupation in question. However, employment growth on its own is insufficient to properly characterise the existence of labour imbalances in some occupations if labour demand can be satisfied by the current labour supply. Accordingly, a complementary way to assess the extent of unmet labour demand is to examine and compare job vacancies at the occupation level. Even still, this approach is subject to a number of shortcomings as well, such as widely differing practices concerning the registration of job vacancies between Member States. Furthermore, a high number of job vacancies may not necessarily indicate the presence of a labour shortage, but rather a result of higher turnover for certain occupations, such as seasonal work.

Generally, several approaches can be followed to identify labour shortages, reflecting in part the lack of one common definition<sup>223</sup>. Indicators that are used to measure labour shortages are usually grouped into different categories, such as volume-based, employer-based, and price-based indicators, with each indicator having their own advantages and limitations<sup>224</sup>.

This section uses volume-based measures, and as such, aims to better understand the demand for labour across occupations by examining employment growth and job

<sup>223</sup> Veneri (1999), 'Can occupational labor shortages be identified using available data?', *Monthly Labor Review*, US Bureau of Labor Statistics, Washington, D.C.; Brunello and Wruuck (2019), 'Skill shortages and skill mismatch in Europe: A review of the literature', *EIB Working Papers*, No. 2019/05, Luxembourg, European Investment Bank (EIB); Eurofound (2021), 'Tackling labour shortages in EU Member States', Publications Office of the European Union, Luxembourg; McGrath (2021), 'Report on Labour Shortages and Surpluses 2021', European Labour Authority (ELA), Bratislava; McGrath (2020), 'Analysis of shortage and surplus occupations 2020', European Commission (DG EMPL), Brussels; OECD (2017), 'Getting Skills Right: Skills for Jobs Indicators', OECD, Paris; European Commission (2022c), 'Labour Market and Wage Developments in Europe, Annual Review 2022', European Commission (DG EMPL), Brussels.

<sup>224</sup> Eurofound (2021).

vacancy rates at the ISCO-2D level. This preliminary step is required before further exploring in Section 4.4 whether the supply of labour (Section 4.3), is able to satisfy the demand for labour (Section 4.2).

### 4.2.1 Employment growth at the level of occupations

#### EU perspective

From 2016 to 2021, the occupational group of **professionals** demonstrated the strongest employment growth. In particular, information and communications technology professionals; business and administration professionals; and science and engineering professionals expanded, with annual growth of more than 3% over the 5-year period.

The evolution of total employment in other occupational groups has been much more constrained, marked by relatively high upwards trends in some occupations and downward trends in others. For example, within **technicians and associate professionals**, the employment of information and communications technicians grew at an average annual growth rate of almost 5% between 2016 and 2021, while that of legal, social, cultural and related associate professionals fell by 3% per year on average. Among **clerical support workers**, employment of general and keyboard clerks increased by around 6% annually on average, while that of numerical and material recording workers declined by approximately 3% per year during the same period. Among **service and sales workers**, the total employment of personal service workers dropped by an average annual growth rate of around 4%, while that of personal care workers increased annually by almost 3% on average.

The final set of occupational groups is marked by a moderate evolution of employment in some subgroups and stagnation or contraction in others. **Managers** and **plant and machine operators and assemblers** show a modest evolution of total employment at the EU-level over the 2016-2021 period, while **skilled agricultural, forestry and fishery workers** as well as **elementary occupations** are characterised by a reduction of overall employment.

**Table 44: Employment by occupation at the EU-level (1 000s and average annual growth rate in %), 2016-2021**

Major	Sub-major	2016	2021	CAGR
Managers	11 Chief Executives, Senior Officials and Legislators	1 519	1 476	-0.6
	12 Administrative and Commercial Managers	2 438	2 503	0.5
	13 Production and Specialized Services Managers	3 434	3 163	-1.6
	14 Hospitality, Retail and Other Services Managers	2 188	2 322	1.2
Professionals	21 Science and Engineering Professionals	5 580	6 720	3.8
	22 Health Professionals	4 932	5 595	2.6
	23 Teaching Professionals	9 129	10 473	2.8
	24 Business and Administration Professionals	6 565	8 238	4.6
	25 Information and Communications Technology Professionals	2 890	4 279	8.2
	26 Legal, Social and Cultural Professionals	5 068	5 630	2.1
Technicians and Associate Professionals	31 Science and Engineering Associate Professionals	7 297	6 791	-1.4
	32 Health Associate Professionals	5 662	5 949	1.0
	33 Business and Administration Associate Professionals	12 770	12 859	0.1
	34 Legal, Social, Cultural and Related Associate Professionals	3 753	3 231	-3.0
	35 Information and Communications Technicians	1 529	1 933	4.8
Clerical Support Workers	41 General and Keyboard Clerks	6 109	8 150	5.9
	42 Customer Services Clerks	3 656	3 519	-0.8
	43 Numerical and Material Recording Clerks	6 662	5 850	-2.6
	44 Other Clerical Support Workers	1 593	1 658	0.8
Service and Sales Workers	51 Personal Service Workers	8 809	7 121	-4.2
	52 Sales Workers	13 399	12 795	-0.9
	53 Personal Care Workers	5 228	5 939	2.6
	54 Protective Services Workers	2 970	3 219	1.6
Skilled Agricultural, Forestry and Fishery Workers	61 Market-oriented Skilled Agricultural Workers	6 169	5 053	-3.9
	62 Market-Oriented Skilled Forestry, Fishery and Hunting Workers	297	278	-1.3
	63 Subsistence Farmers, Fishers, Hunters and Gatherers	262	31	-34.6
Craft and Related Trades Workers	71 Building and Related Trades Workers (excluding Electricians)	7 318	7 300	-0.1
	72 Metal, Machinery and Related Trades Workers	7 207	7 251	0.1
	73 Handicraft and Printing Workers	997	898	-2.1
	74 Electrical and Electronics Trades Workers	3 007	2 955	-0.3
	75 Food Processing, Woodworking, Garment and Other	3 952	3 735	-1.1
Plant and Machine Operators, and Assemblers	81 Stationary Plant and Machine Operators	4 961	4 827	-0.5
	82 Assemblers	1 671	1 752	0.9
	83 Drivers and Mobile Plant Operators	7 931	7 962	0.1
Elementary Occupations	91 Cleaners and Helpers	7 170	6 186	-2.9
	92 Agricultural, Forestry and Fishery Labourers	1 478	1 469	-0.1
	93 Labourers in Mining, Construction, Manufacturing and Transport	4 782	4 940	0.7
	94 Food Preparation Assistants	1 236	1 143	-1.6
	95 Street and Related Sales and Service Workers	169	111	-8.0
	96 Refuse Workers and Other Elementary Workers	1 922	1 761	-1.7

Note. The average annual growth rate is compound and is expressed in percentage.

Source: EU-LFS 2021, custom extraction by Milieu.

### What is the 2-Digit International Standard Classification of Occupations (ISCO-2D)?

As part of the International Standard Classification of Occupations (ISCO)<sup>225</sup> developed by the International Labour Organisation (ILO), the ISCO-2D indicator is used to classify and group occupations within ISCO-1D categorisations, which consist of 10 'major' groups.

The ISCO-2D level of classification provides a comparatively more detailed breakdown of 43 'sub-major' occupations. Both the ISCO-3D and ISCO-4D classifications provide progressively more detailed breakdowns of occupations, allowing for the analysis of specific roles, such as nursing and midwifery professionals (ISCO-3D) and nursing professionals (ISCO-4D).



The 2021 EU-LFS data used in this chapter, which provides the basis for analysing labour mobility, is limited in its level of occupational detail. The ISCO-1D and ISCO-2D classification levels used in the analysis do not provide the level of precision offered by ISCO-3D or ISCO-4D, which results in limitations in identifying labour shortages between specific roles with different skill sets, qualifications, and demands for labour, such as nurses and pharmacists.

## National perspective

Employment growth across occupations can vary widely between countries, particularly between the EU Member States that are under consideration in this chapter: Germany, Spain, France, Italy, the Netherlands, Poland, Romania and Bulgaria<sup>226</sup>. Table 45 presents employment growth in terms of the compound annual growth rate (CAGR) at the occupation level for the selected Member States between 2016 and 2021. Accordingly, the results demonstrated by Table 45 show that **employment trends at the EU-level conceal substantial differences between different EU Member States.**

### Positive employment growth

- Strong positive employment growth at the EU level was identified among science and engineering professionals; business and administration professionals; information and communication technology professionals; general and keyboard clerks; and information and communications technicians. This sharp growth was notable in Germany, Spain, France, the Netherlands and Poland, while more constrained in Italy, Romania and Bulgaria.
- Employment in Germany and Poland increased among all **professional** occupations, with the highest growth rate for teaching professionals for the former and ICT professionals for the latter. In Spain, all **professional** occupations, as well as the occupational groups of **managers** and **technicians and associate professionals** also showed positive employment growth. France and the Netherlands had the strongest employment growth in **professional occupations** among the selected Member States, particularly in the case of information and communications technology professionals.

<sup>225</sup> International Labor Organization (ILO) (2012).

<sup>226</sup> The analysis is limited to these countries due to the limited availability and reliability of comprehensive data on employment of EU movers and nationals across occupations at the ISCO-2D level.

**Table 45: Employment growth by occupation for selected countries  
(1 000s and average annual growth rate in %), 2016-2021**

Occupations		DE	ES	FR	IT	NL	PL	RO	BG
11	Chief Executives, Senior Officials and Legislators	-3.7	1.1	16.8	-0.5	-15.5	1.0	5.4	-15.1
12	Administrative and Commercial Managers	-2.9	4.4	-1.1	-1.6	5.3	0.5	9.1	-1.1
13	Production and Specialized Services Managers	-1.8	0.9	-7.6	0.1	2.0	-2.1	0.7	-2.8
14	Hospitality, Retail and Other Services Managers	1.5	0.0	8.6	-2.9	2.5	4.5	-1.1	-1.4
21	Science and Engineering Professionals	2.7	3.2	7.5	1.0	8.5	3.5	-1.5	0.4
22	Health Professionals	0.6	3.0	2.8	-1.0	3.8	1.0	4.8	-0.1
23	Teaching Professionals	8.6	2.9	0.3	0.7	2.2	2.3	0.9	0.3
24	Business and Administration Professionals	2.6	4.7	6.8	-2.1	6.9	3.3	11.5	3.0
25	Information and Communications Technology Professionals	4.4	4.3	14.9	3.4	8.7	8.6	10.4	8.3
26	Legal, Social and Cultural Professionals	2.3	1.9	10.8	-0.7	1.3	-0.4	-11.5	3.2
31	Science and Engineering Associate Professionals	-2.2	4.6	-9.7	-0.9	2.5	2.3	1.5	0.6
32	Health Associate Professionals	1.2	1.5	0.6	1.3	3.2	1.0	0.2	-3.7
33	Business and Administration Associate Professionals	-0.7	0.7	0.0	-2.3	3.6	1.5	1.4	1.9
34	Legal, Social, Cultural and Related Associate Professionals	-15.5	4.9	0.4	-1.1	2.7	3.4	0.1	-2.4
35	Information and Communications Technicians	8.2	7.8	2.6	3.5	5.1	8.1	4.5	-0.3
41	General and Keyboard Clerks	12.4	4.1	2.0	4.1	-4.1	4.1	-3.7	1.7
42	Customer Services Clerks	-4.0	1.6	0.8	-3.2	4.3	-1.3	1.0	1.3
43	Numerical and Material Recording Clerks	-10.3	3.2	0.2	-0.1	4.6	2.6	2.9	-0.5
44	Other Clerical Support Workers	4.6	-1.1	3.6	-3.9	1.6	1.4	0.0	-1.1
51	Personal Service Workers	-2.3	-14.7	-3.9	-2.0	-4.4	1.2	-4.4	-3.3
52	Sales Workers	-3.7	6.8	-5.6	-1.3	-2.1	-2.1	2.8	-1.0
53	Personal Care Workers	6.8	5.1	2.1	0.5	1.5	7.3	3.3	-0.3
54	Protective Services Workers	9.3	0.9	0.1	-0.4	1.5	-0.2	2.9	-2.8
61	Market-oriented Skilled Agricultural Workers	0.5	0.0	-3.6	-0.6	-4.5	-1.6	-15.7	-1.7
62	Market-Oriented Skilled Forestry, Fishery and Hunting Workers	2.7	2.2	-0.6	-4.4		-7.6	-7.5	8.5
71	Building and Related Trades Workers (excluding Electricians)	-3.8	2.7	0.9	-0.2	-4.2	0.8	0.5	3.2
72	Metal, Machinery and Related Trades Workers	1.3	0.0	3.7	-1.2	-4.1	-2.1	0.4	-0.9
73	Handicraft and Printing Workers	-0.7	-3.8	-0.2	0.5	0.0	-3.7	-10.4	-3.6
74	Electrical and Electronics Trades Workers	-4.3	0.4	4.3	-0.1	1.9	1.3	2.5	-5.0
75	Food Processing, Woodworking, Garment and Other	-1.3	-3.2	1.7	0.5	-4.0	-1.2	-1.0	-1.9
81	Stationary Plant and Machine Operators	0.8	1.1	-3.5	1.6	4.2	-1.3	-1.0	-0.4
82	Assemblers	8.7	6.4	-9.6	1.4	-0.5	-2.7	4.1	6.0
83	Drivers and Mobile Plant Operators	-2.3	1.4	-0.4	-0.3	-0.9	1.2	3.3	1.0
91	Cleaners and Helpers	-0.8	-1.3	-6.8	-2.5	-3.2	-2.2	-5.8	0.8
92	Agricultural, Forestry and Fishery Labourers	-3.9	-0.8		2.0	1.1	-10.2	-3.1	-1.5
93	Labourers in Mining, Construction, Manufacturing and Transport	-1.1	2.5	0.6	1.0	2.1	-5.0	4.1	4.3
94	Food Preparation Assistants	-4.4	1.3	2.0	-4.3	-5.4	-0.5	10.2	-5.4
95	Street and Related Sales and Service Workers		1.9		-6.6				-5.3
96	Refuse Workers and Other Elementary Workers	-0.3	0.2	-3.0	0.4	-12.9	-4.0	11.6	5.2
<b>Average</b>		<b>0.2</b>	<b>1.6</b>	<b>1.0</b>	<b>-0.6</b>	<b>0.4</b>	<b>0.3</b>	<b>0.9</b>	<b>-0.3</b>

Note The average annual growth rate is compound and is expressed in percentage. Empty cells indicate values below reliability thresholds. Color coding is according to the following ranges: smaller than -5% (red); -4.9 to -2% (orange); -1.9 to 1.9% (yellow); 2 to 4.9% (light green); above 5% (green). Main categories are: 1- Managers, 2- Professionals, 3- Technicians and Associate Professionals, 4- Clerical Support Workers, 5- Service and Sales Workers, 6- Skilled Agricultural, Forestry and Fishery Workers, 7- Craft and Related Trades Workers, 8- Plant and Machine Operators, and Assemblers, 9- Elementary Occupations.

Source: EU-LFS 2021, custom extraction by Milieu.

## Negative employment growth

- Substantial negative employment growth at the EU level was identified in the following occupations: legal, social, cultural and related associate professionals; personal service workers; market-oriented skilled agricultural workers; subsistence farmers, fishers, and hunters and gatherers; street and related sales and service workers; and cleaners and helpers. This declining employment was identified in all selected Member States (with the exception of legal, social and cultural professionals), though to different extents.
- Employment levels in Germany decreased substantially among **clerical support workers**, particularly for customer services clerks as well as numerical and material recording clerks. Employment in France fell in all **plant and machine operator and assembler** occupations, particularly among assemblers. In the Netherlands, declining employment was concentrated within **elementary occupations**, particularly for refuse workers and other elementary roles, as well as for **plant and machine operators and assemblers**, and **skilled agricultural, forestry and fishery workers**. In Poland, nearly all occupations other than managers and professionals had mild or negative growth. Italy and Bulgaria appear to have had more constrained employment growth relative to the remaining Member States across nearly all occupational groups.

The examination of employment growth rates across occupations at the EU-level suggests the existence of certain occupational imbalances. However, it is important to note that this does not necessarily reflect the employment situation in all Member States. Instead, a comparison of employment situations between two Member States can highlight vastly different scenarios at the occupational level. For instance, while overall employment growth among assemblers at the EU-level was modest between 2016 and 2021, Germany and Spain saw sharp increases in employment in this same occupation, while France experienced a decline.

Although the analysis of employment growth can lend some insight as to the presence of a potential labour imbalance at the occupation level, reliance on one indicator alone is insufficient. Indeed, occupations that are marked by a sustained increase in employment are not necessarily indicative of a **labour shortage**, particularly if an employer manages to find the labour that is required to fill new positions as they are created. Likewise, a contraction of employment in some occupations does not necessarily suggest the presence of a **labour surplus** since the labour supply can also decrease in these occupations. To determine whether an occupation is experiencing a labour shortage, it is also important to assess the extent of **employment need**, which can be represented by the job vacancy rate at the occupation level. Accordingly, Section 4.2.2 will examine and compare job vacancy rates across occupations in detail.

### 4.2.2 Employment needs

#### EU perspective

Labour demand for specific occupations can also be examined through the analysis of the **job vacancy rate**, which provides information on unfilled job openings. In the absence of official Eurostat data on job vacancies at ISCO-2D occupational level, the latter are inferred from data on **online job advertisements** published by the European Centre for the Development of Vocational Training (CEDEFOP).

### What is the job vacancy rate?

The job vacancy rate measures the share of total posts that are vacant and provides information on unmet labour demand. According to Eurostat, a job vacancy is defined as a paid post that is newly created, unoccupied, or about to be vacant: i) for which the employer is taking active steps<sup>227</sup> and is prepared to take further steps to find a suitable candidate from outside the enterprise concerned; and ii) which the employer intends to fill either immediately or within a specific period of time. The job vacancy rate can be computed as the number of total job vacancies over the sum of total occupied posts<sup>228</sup> and total job vacancies. The figure is then multiplied by 100 and expressed as a percentage<sup>229</sup>.

In the context of our report, we approximate the number of job vacancies by the number of online job advertisements from the Centre for the Development of Vocational Training (CEDEFOP)<sup>230</sup>, in order to cover all ISCO-2D occupations. CEDEFOP provides the largest collection of online job offers in Europe thanks to extensive cooperation with national experts and institutions and the use of web scraping algorithms (to obtain publicly available data from online job boards).

With some caveats<sup>231</sup>, information on online job advertisements can be used as proxy for the total number of vacancies to compute the job vacancy rate (JVR) as:

$$JVR = \left( \frac{\text{online job advertisements}}{\text{number of occupied posts} + \text{online job advertisements}} \right) \times 100$$

The number of total occupied posts is represented by the total number of workers employed in that specific occupation.

In 2021, the job vacancy rate (JVR) at the EU level was particularly high among **managers** (particularly for administrative and commercial managers) **and professional occupation groups** (specifically for science and engineering professionals; business and administration professionals; and information and communications technology professionals). The JVR was slightly more modest for **technicians and associate professionals**, which amounted to more than 4% across three occupations: science and engineering associate professionals; business and administration associate professionals; and information and communications technicians.

<sup>227</sup> Active steps to find a suitable candidate include: notifying the job vacancy to the public employment services; contacting a private employment agency/head hunters; advertising the vacancy in the media (for example internet, newspapers, magazines); advertising the vacancy on a public notice board; approaching, interviewing or selecting possible candidates/potential recruits directly; approaching employees and/or personal contacts; and using internships.

<sup>228</sup> An 'occupied post' means a paid post within the organisation to which an employee has been assigned.

<sup>229</sup> Eurostat (2022d), *Information on data: Job vacancies* [Online]. Available online: <https://ec.europa.eu/eurostat/web/labour-market/information-data/job-vacancies> [Accessed 1 February 2023].

<sup>230</sup> European Centre for the Development of Vocational Training (CEDEFOP) (2022b).

<sup>231</sup> The main limitations of using online job advertisements as proxy for the number of job vacancies is the unknown quality of the data. Firstly, we do not know whether an employer posting an online job advertisement intends to fill the job position either immediately or within a specific period, although the online job posting might be considered as 'active step' to find a candidate for a job. Secondly, there are several potential sources of errors in the use of online job advertisements as proxy of job vacancies, which can lead to an under-coverage or over-coverage of job vacancies. For instance, employers can rely on other search methods than online advertisement methods to hire employees. Also, several job vacancies can be included in one job advertisement. In addition, correlation between those measures varies between countries, industries and occupations. Although useful and promising, online job advertisements are thus an imperfect proxy of job vacancies statistics and should be used with carefulness. For a thorough analysis on the topic see, Beręsewicz and Pater (2021), 'Inferring job vacancies from online job advertisements', *Eurostat Statistical Working Papers*, Publications Office of the European Union, Luxembourg.

**Table 46: Job vacancy rate by occupation at EU-level, 2021**

Major	Sub-major	Job Vacancy Rate (%)
Managers	11 Chief Executives, Senior Officials and Legislators	3.3
	12 Administrative and Commercial Managers	11.0
	13 Production and Specialized Services Managers	3.8
	14 Hospitality, Retail and Other Services Managers	3.6
Professionals	21 Science and Engineering Professionals	6.0
	22 Health Professionals	2.5
	23 Teaching Professionals	0.8
	24 Business and Administration Professionals	5.5
	25 Information and Communications Technology Professionals	13.1
	26 Legal, Social and Cultural Professionals	2.3
Technicians and Associate Professionals	31 Science and Engineering Associate Professionals	5.2
	32 Health Associate Professionals	1.9
	33 Business and Administration Associate Professionals	4.9
	34 Legal, Social, Cultural and Related Associate Professionals	3.5
	35 Information and Communications Technicians	4.3
Clerical Support Workers	41 General and Keyboard Clerks	1.4
	42 Customer Services Clerks	4.9
	43 Numerical and Material Recording Clerks	4.3
	44 Other Clerical Support Workers	8.9
Service and Sales Workers	51 Personal Service Workers	3.0
	52 Sales Workers	3.2
	53 Personal Care Workers	2.5
	54 Protective Services Workers	0.9
Skilled Agricultural, Forestry and Fishery Workers	61 Market-oriented Skilled Agricultural Workers	0.2
	62 Market-Oriented Skilled Forestry, Fishery and Hunting Workers	2.4
	63 Subsistence Farmers, Fishers, Hunters and Gatherers	0.0
Craft and Related Trades Workers	71 Building and Related Trades Workers (excluding Electricians)	1.8
	72 Metal, Machinery and Related Trades Workers	3.3
	73 Handicraft and Printing Workers	2.0
	74 Electrical and Electronics Trades Workers	5.4
	75 Food Processing, Woodworking, Garment and Other	2.3
Plant and Machine Operators, and Assemblers	81 Stationary Plant and Machine Operators	4.5
	82 Assemblers	4.5
	83 Drivers and Mobile Plant Operators	2.6
Elementary Occupations	91 Cleaners and Helpers	1.8
	92 Agricultural, Forestry and Fishery Labourers	1.1
	93 Labourers in Mining, Construction, Manufacturing and Transport	10.4
	94 Food Preparation Assistants	4.8
	95 Street and Related Sales and Service Workers	2.0
	96 Refuse Workers and Other Elementary Workers	1.9

Note. The job vacancy rate is calculated as online job advertisements over the sum of online job advertisements and total employment per occupation and is expressed in percentage.

Source: EU-LFS 2021, custom extraction by Milieu and CEDEFOP, 2021.

Among **clerical support workers**, the job vacancy rate reached more than 4% in 2021 in three occupations: customer services clerks; numerical and material recording clerks; and other clerical support workers.

Within the group of **service and sales workers**, the JVR was much more modest than the above groups. The JVR was highest among sales workers while remaining below 4%. Among **craft and related trades workers**, the JVR was the highest for electrical and electronics trades workers. It peaked at around 5% but it did not exceed 4% in other occupations. Within the occupational group of **plant and machine operators and assemblers**, the JVR climbed to more than 4% for stationary plant and machine operators as well as assemblers.

Among **elementary occupations**, the JVR reached more than 10% for labourers in mining, construction, manufacturing and transport, and more than 4% for food preparation assistants. In all other occupations, the JVR fell below 4%, including: cleaners and helpers; agricultural, forestry and fishery labourers; street and related sales and service workers; and refuse workers and other elementary workers.

## National perspective

The analysis of job vacancy rates at the EU-level in 2021 revealed signs of significant unmet labour demand in several occupations across all occupational groups with the exception of skilled agricultural, forestry and fishery workers; and service and sales workers. As for employment growth, there are **marked disparities in the job vacancy rate across occupations among the selected Member States**.

Furthermore, the comparability of job vacancy rates across countries is limited due to differences in the publication and registration of vacancies as well as with the underlying methodologies that are used to construct this indicator. For instance, some Member States may only count job openings that have been actively advertised, while others may include all job openings regardless of whether they have been advertised. As such, the following examination of job vacancy rates in the selected Member States offers an *indication* of unmet labour demand, as opposed to a precise form of measurement that is entirely comparable between national jurisdictions.

Table 47 presents the job vacancy rate by occupation for the selected Member States in 2021. Initial inspection finds that Spain, Poland, Romania, and Bulgaria have distinctly lower job vacancy rates across nearly all occupations compared to the remaining Member States, indicating a lower prevalence of unmet labour demand.

Table 47 reveals several interesting similarities. For instance, the occupation groups of clerical support workers, plant and machine operators and assemblers, and professionals had notably higher job vacancy rates on average. Information and communications technology professionals were the only occupation with an exceptionally high JVR among the selected Member States. Furthermore, administrative and commercial managers, electrical and electronics trade workers, and labourers in mining, construction, manufacturing and transport have notably high job vacancy rates across all Member States, but to varying degrees. Table 47 also suggests that markedly high or low job vacancy rates often appear to extend across multiple countries, implying that unmet labour demand for a particular occupation is not substantially different between the selected Member States compared to the EU as a whole.

**Table 47: Job vacancy rate by occupation for selected countries (%), 2021**

Occupations		DE	ES	FR	IT	NL	PL	RO	BG
11	Chief Executives, Senior Officials and Legislators	3.9	1.5	8.1	4.7	4.4	0.6	0.1	0.8
12	Administrative and Commercial Managers	16.6	3.4	14.4	40.8	14.9	5.0	3.4	3.4
13	Production and Specialized Services Managers	5.7	1.3	4.8	3.1	10.1	1.9	0.9	1.2
14	Hospitality, Retail and Other Services Managers	13.7	0.5	2.4	2.9	10.1	1.5	0.3	0.8
21	Science and Engineering Professionals	8.2	2.0	6.9	8.9	11.9	3.7	0.8	4.9
22	Health Professionals	4.6	0.5	4.6	3.1	4.5	0.3	0.1	0.7
23	Teaching Professionals	1.6	0.3	0.7	0.4	2.8	0.2	0.0	0.9
24	Business and Administration Professionals	8.8	2.4	6.1	12.5	5.5	2.9	0.5	2.1
25	Information and Communications Technology Professionals	21.3	9.8	10.8	28.4	12.6	10.8	4.6	7.2
26	Legal, Social and Cultural Professionals	3.2	0.7	4.2	1.8	3.5	1.1	0.2	1.7
31	Science and Engineering Associate Professionals	5.8	1.7	12.1	5.5	9.1	1.0	0.4	2.1
32	Health Associate Professionals	1.9	1.0	4.3	0.7	1.7	0.5	0.1	2.1
33	Business and Administration Associate Professionals	5.1	2.4	9.8	5.4	8.4	1.5	0.6	3.2
34	Legal, Social, Cultural and Related Associate Professionals	6.1	0.7	4.6	3.8	2.1	0.6	0.4	3.7
35	Information and Communications Technicians	7.2	1.0	7.6	3.4	7.2	2.4	0.7	2.3
41	General and Keyboard Clerks	1.1	0.6	2.5	1.1	6.4	0.6	0.3	3.6
42	Customer Services Clerks	7.9	0.4	6.6	4.0	10.5	15.0	0.5	2.1
43	Numerical and Material Recording Clerks	2.8	0.6	8.1	9.8	10.7	0.6	0.7	1.4
44	Other Clerical Support Workers	7.5	3.1	27.5	5.6	3.8	0.3	0.1	1.8
51	Personal Service Workers	3.0	1.3	6.9	3.0	7.2	1.6	0.2	3.3
52	Sales Workers	3.0	0.6	11.6	4.1	7.7	1.8	0.1	1.2
53	Personal Care Workers	7.8	0.5	4.6	0.5	2.1	0.2	0.1	0.5
54	Protective Services Workers	1.4	0.1	2.0	1.1	2.4	0.1	0.0	0.5
61	Market-oriented Skilled Agricultural Workers	0.6	0.0	0.4	0.0	0.4	0.0	0.0	1.3
62	Market-Oriented Skilled Forestry, Fishery and Hunting...	20.2	0.0	0.1	0.0		0.0	0.0	0.0
71	Building and Related Trades Workers (excluding Electricians)	4.6	0.4	4.9	0.7	5.8	0.3	0.1	0.4
72	Metal, Machinery and Related Trades Workers	3.8	1.0	8.1	3.3	14.7	0.9	0.1	1.1
73	Handicraft and Printing Workers	4.4	0.6	1.1	0.6	9.2	0.6	0.1	0.2
74	Electrical and Electronics Trades Workers	7.2	1.6	10.3	8.4	14.7	2.6	0.2	1.1
75	Food Processing, Woodworking, Garment and Other	3.1	0.5	5.8	1.7	9.2	0.7	0.1	0.8
81	Stationary Plant and Machine Operators	5.8	1.8	6.9	2.2	39.9	0.8	0.2	0.4
82	Assemblers	11.6	1.1	5.4	8.9	13.4	3.0	0.1	1.0
83	Drivers and Mobile Plant Operators	3.7	0.4	6.6	1.2	15.5	0.6	0.1	1.1
91	Cleaners and Helpers	2.1	0.1	3.3	2.1	6.1	0.7	0.1	0.5
92	Agricultural, Forestry and Fishery Labourers	9.0	0.0	2.1	0.2	5.6	0.1	0.0	0.2
93	Labourers in Mining, Construction, Manufacturing and...	15.2	0.3	25.0	12.6	17.6	3.2	0.2	0.6
94	Food Preparation Assistants	3.2	0.8	9.9	9.6	10.2	2.1	0.5	2.6
95	Street and Related Sales and Service Workers		0.4		0.2				0.0
96	Refuse Workers and Other Elementary Workers	5.8	0.1	1.1	0.5	24.0	1.4	0.0	0.9
<b>Average</b>		<b>6.5</b>	<b>1.2</b>	<b>6.9</b>	<b>5.3</b>	<b>9.4</b>	<b>1.9</b>	<b>0.4</b>	<b>1.6</b>

Note. The job vacancy rate is calculated as online job advertisements over the sum of online job advertisements and total employment per occupation and is expressed in percentage. Color coding is according to the following ranges: smaller than or equal 1.9% (red); 2 to 3.9% (orange); 4 to 5.9% (yellow); 6 to 9.9% (light green); above 10% (green). Main categories are: 1- Managers, 2- Professionals, 3- Technicians and Associate Professionals, 4- Clerical Support Workers, 5- Service and Sales Workers, 6- Skilled Agricultural, Forestry and Fishery Workers, 7- Craft and Related Trades Workers, 8- Plant and Machine Operators, and Assemblers, 9- Elementary Occupations.

Source: EU-LFS 2021, custom extraction by Milieu and CEDEFOP, 2021.

While the examination of job vacancy rates at the occupation level reveals several shared trends among the selected Member States, there are a number of notable differences as well. For instance, the JVR across the selected Member States varies considerably within the occupational groups of craft and related trades workers, plant

and machine operators and assemblers, and to a lesser extent, service and sales workers. More specifically, metal, machinery, and related trades workers as well as stationary plant and machine operators indicated significant variation in their job vacancy rates between the selected Member States.

Bringing together employment growth trends and job vacancy rates at the occupational level allows for a limited assessment of potential labour shortages across occupations. For example, if an occupation has both a high job vacancy rate and high employment growth, such as science and engineering professionals in the Netherlands, it is likely that employers cannot find enough qualified workers to fully meet the demand for labour in that occupation. Additionally, in cases of severe labour shortages, the insufficient supply of workers can act as a constraint on employment growth for a particular occupation. In this case, intra-EU labour mobility may help with alleviating such an imbalance. Alternatively, if an occupation has both a low job vacancy rate and decreasing levels of employment, this suggests that an influx of mobile labour to this occupation would only exacerbate the existing imbalance due to insufficient demand, such as the case of personal service workers in Spain. It is however important to acknowledge certain exceptions that may obscure the identification of any supposed phenomena in these relationships. For instance, a low job vacancy rate accompanied by decreasing employment may instead be a consequence of structural barriers that prevent workers from entering a particular occupation or sector, rather than a surplus of labour.

Next, by examining and comparing the *supply* of mobile labour across selected Member States at the occupation level, the following section aims to build upon our current estimation of occupational imbalances that until now, has largely been reliant on demand-side indicators.

### 4.3 The supply of intra-EU labour mobility at the occupational level

This section depicts the current supply of intra-EU labour mobility across occupations to assess whether mobile labour can help alleviate occupational imbalances. First, this section analyses the distribution and total volume of EU movers across occupations at the ISCO-2D level, including a simultaneous comparison to nationals at the EU level and in selected Member States. This is followed by an exploration of the education profile of the mobile labour force, as well as an examination of trends at different skill levels from 2016 to 2021.

#### 4.3.1 Key occupations among EU movers and nationals

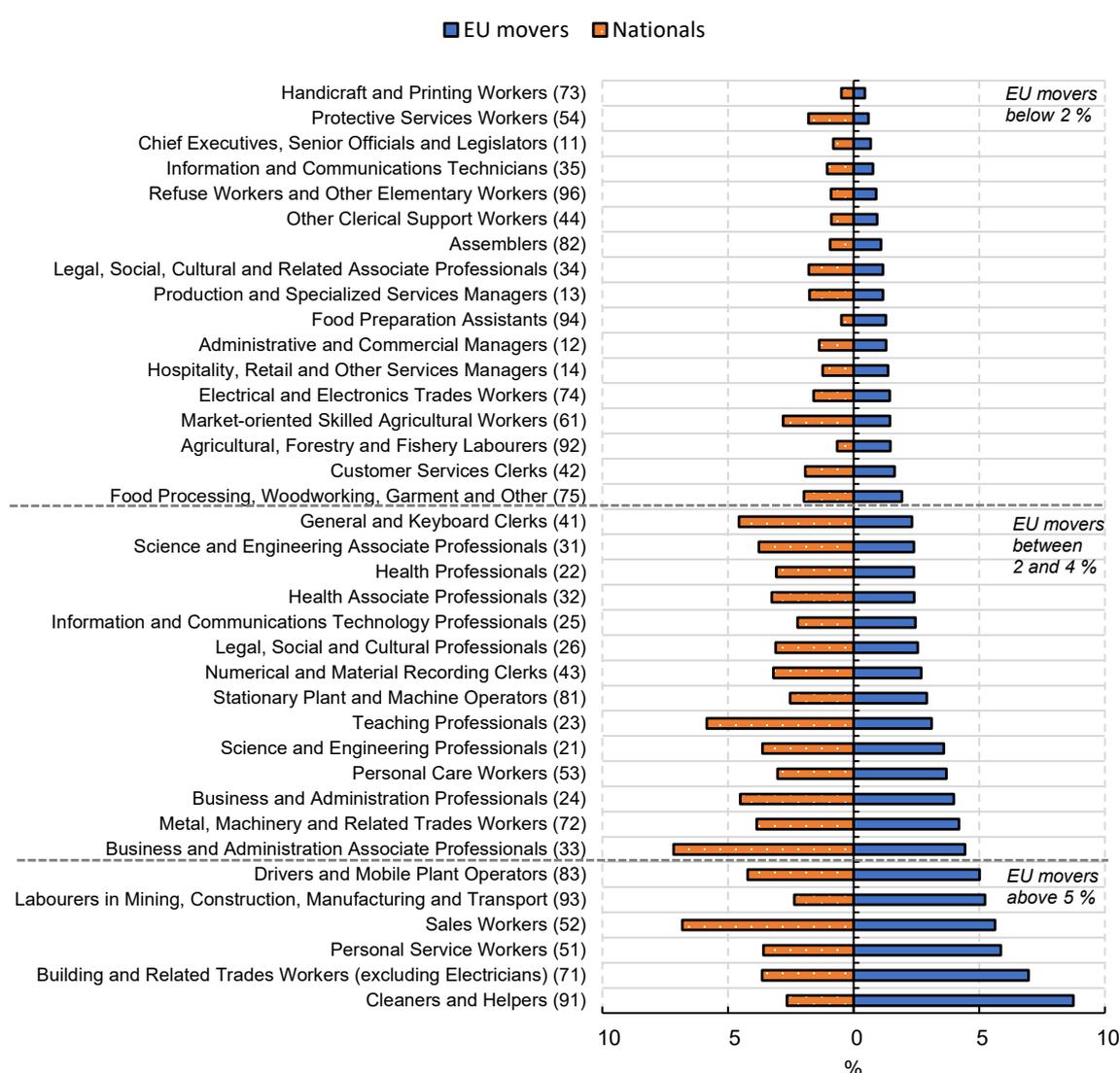
##### EU perspective

The occupational distribution of employed EU movers and nationals exhibit some disparities. In 2021, 10 out of 40 occupations were more prevalent among EU movers than nationals in relative terms: cleaners and helpers; building and related trades workers (excluding electricians); labourers in mining, construction, manufacturing and transport; personal service workers; drivers and mobile plant operators; metal, machinery and related trades workers; agricultural, forestry and fishery labourers; food preparation assistants; stationary plant and machine operators; and personal care workers. For instance, almost 9% of EU movers were employed as cleaners and helpers

compared to 3% of nationals. Likewise, building and related trades workers accounted for around 7% of EU movers against 4% of nationals.

In contrast, seven occupations were significantly more prevalent among nationals in 2021 relative to EU movers: business and administration associate professionals; teaching professionals; general and keyboard clerks; science and engineering associate professionals; market-oriented skilled agricultural workers; sale workers; and protective services workers. For example, teaching professionals comprised nearly 6% of employed nationals and only 3% of EU movers. Similarly, 5% of nationals were employed as general and keyboard clerks, compared to just 2% of EU movers.

**Figure 53: Distribution of EU movers and nationals across occupations at the EU-level (%), 2021**



Note. Main categories are: 1- Managers, 2- Professionals, 3- Technicians and Associate Professionals, 4- Clerical Support Workers, 5- Service and Sales Workers, 6- Skilled Agricultural, Forestry and Fishery Workers, 7- Craft and Related Trades Workers, 8- Plant and Machine Operators, and Assemblers, 9- Elementary Occupations.

Source: EU-LFS 2021, custom extraction by Milieu.

As shown in Figure 53, the distribution of EU movers also reveals the extent in which many occupations consist of only a minor share of the total mobile labour force. For

instance, 17 out of 40 occupations each comprised more than 2% of all EU movers in 2016 and 2021. Accordingly, Figure 53 also divides all occupations into three categories based on their prevalence among the mobile population. A threshold of 2% was selected to differentiate between 'minor' (less than 2% of EU movers) and 'medium sized' occupations (consisting of 2 to 4% of EU movers) and was informed by the median share of an occupation relative to all EU movers. Furthermore, 'important occupations' represent the 90<sup>th</sup> percentile of populated occupations among the mobile population.

The prior analysis of labour demand in section 4.2.1 revealed that total employment growth increased in nearly half of all 40 occupations at the EU-level between 2016 and 2021. However, Figure 53 highlights that **among the occupations that experienced growth over the 5-year period, only two of them were important occupations among EU movers in 2021**<sup>232</sup>. These were: labours in mining, construction, manufacturing and transport; and drivers and mobile plant operators.

Alternatively, **total EU-level employment declined over the 2016-2021 period for the majority of important occupations among EU movers in 2021**. These occupations included: cleaners and helpers; building and related trades workers (excluding electricians); personal service workers; and sales workers. Preliminarily, this would suggest that in key instances, mobile workers did not adapt (at least in the short term) to the changing demands for labour at the occupational level.

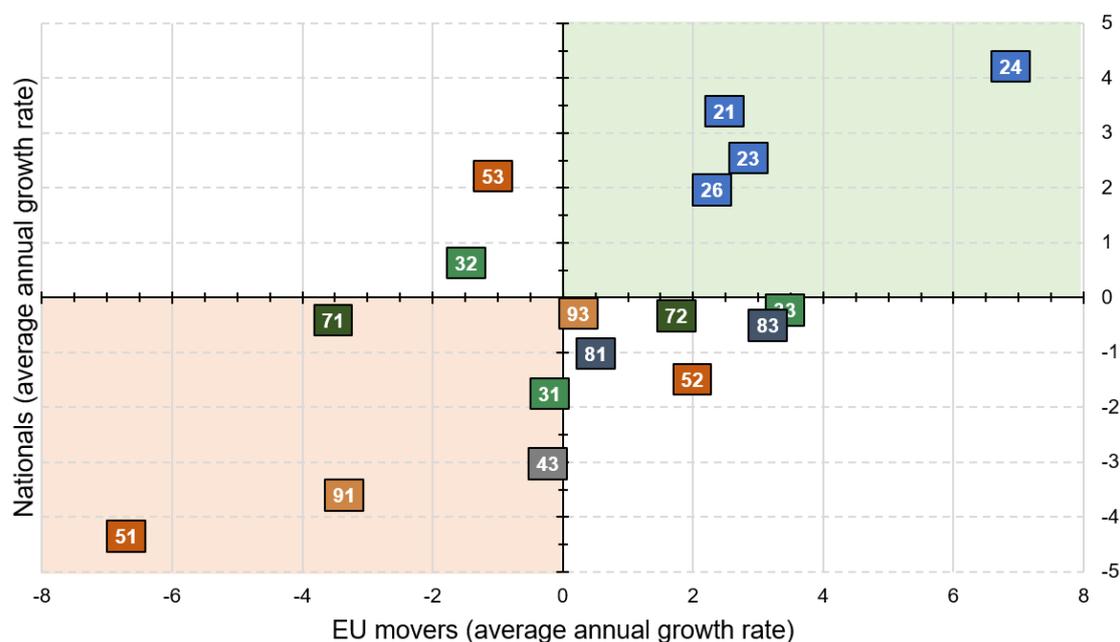
**For the remaining occupations where total EU-level employment increased over the 2016-2021 period, 11 of them were medium-sized among EU movers in 2021, compared to 6 occupations in which the prevalence of EU movers was minor**<sup>233</sup>. These medium sized occupations include, but are not limited to: business and administration associate professionals; metal, machinery and related trades workers; business and administration professionals; personal care workers; science and engineering professionals; teaching professionals; legal, social and cultural professionals; and information and communications technology professionals. Taken together, these findings may serve as early indications that mobile labour is rather limited in its ability to alleviate occupational imbalances when they emerge.

Next, Figure 54 presents the average annual growth rates for the population share of each occupation among EU movers and nationals over the 2016-2021 period. This comparative measure demonstrates where the emphasis has shifted at the occupational level between both population groups over time. If certain occupations facing labour shortages have become more prevalent among both nationals and EU movers, this would suggest that mobile labour can alleviate such occupational imbalances. Conversely, if the opposite is found, it could indicate that EU movers are contributing to existing shortages or surpluses. It should be noted that Figure 54 only presents occupations comprising a share of more than 2% of all EU movers.

<sup>232</sup> Occupations that comprise at least 5% of all EU movers in 2021 are referred to as 'important'.

<sup>233</sup> 'Medium sized' occupations comprise 2-4% of all EU movers in 2021; 'Minor' occupations comprise less than 2% of all EU movers in 2021.

**Figure 54: Change in the distribution of EU movers and nationals at EU level, average annual growth rate, 2016-2021**



Professionals	Service and Sales Workers
21 Science and Engineering Professionals	51 Personal Service Workers
23 Teaching Professionals	52 Sales Workers
24 Business and Administration Professionals	53 Personal Care Workers
26 Legal, Social and Cultural Professionals	Craft and Related Trade Workers
31 Science and Engineering Associate Professionals	71 Building and Related Trades Workers (excluding Electricians)
32 Health Associate Professionals	72 Metal, Machinery and Related Trades Workers
33 Business and Administration Associate Professionals	Plant and Machine Operators and Assemblers
Clerical Support Workers	81 Stationary Plant and Machine Operators
43 Numerical and Material Recording Clerks	83 Drivers and Mobile Plant Operators
	Elementary Occupations
	91 Cleaners and Helpers
	93 Labourers in Mining, Construction, Manufacturing and Transport

Note. Only occupations where EU movers are more than 2% at EU-level are shown. The average annual growth rate is compound and is expressed in percentage (%). Coloured quadrants indicate occupations where EU movers and nationals experienced similar increasing (green) or decreasing (red) trends.

Source: EU-LFS 2021, custom extraction by Milieu.

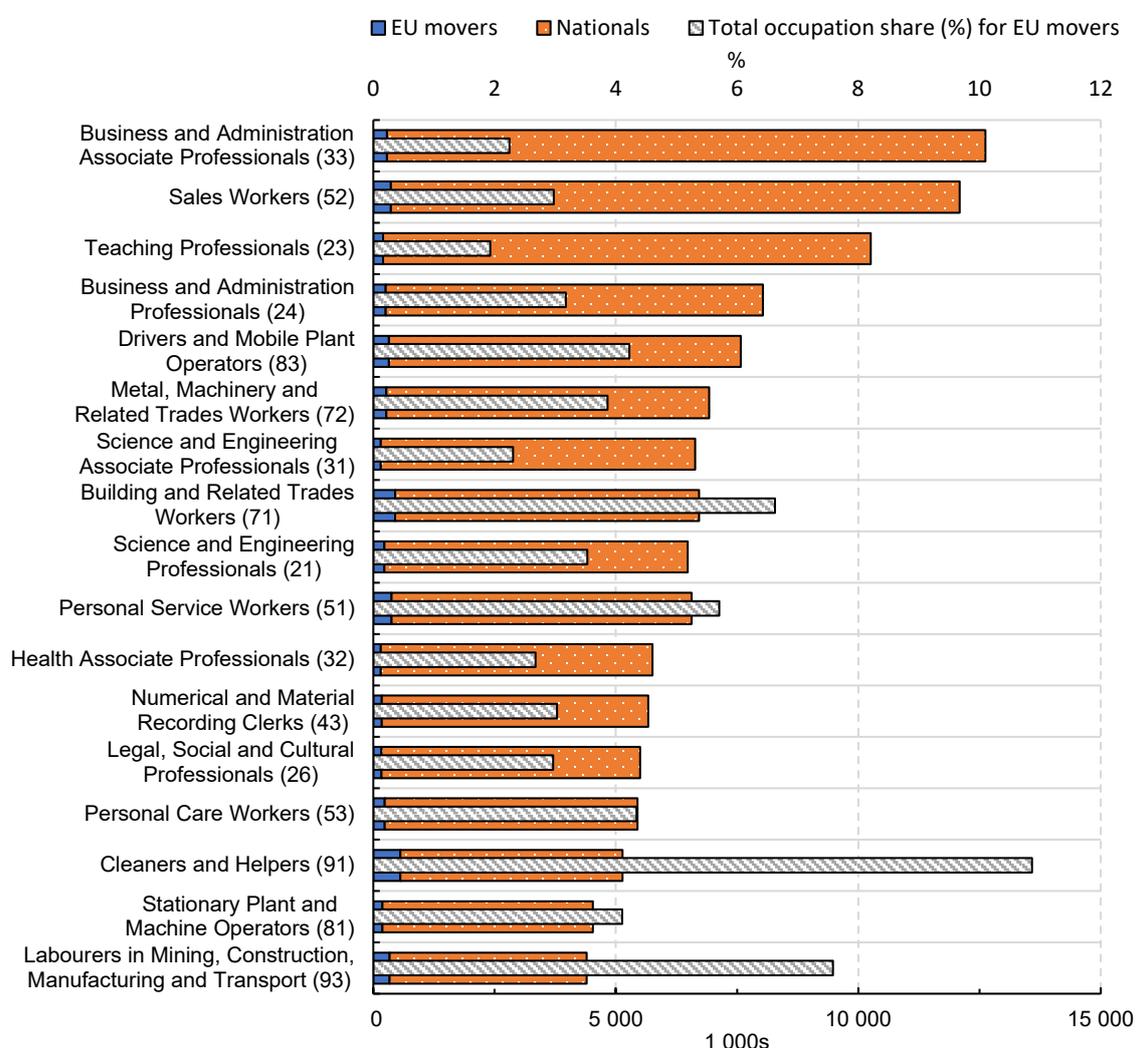
The following findings can be depicted from Figure 54:

- The **upper-right quadrant** (in green) shows occupations in which both EU movers and nationals increased their shares, namely: science and engineering professionals; teaching professionals; business and administration associate professionals; and legal, social and cultural professionals.
- The **upper-left quadrant** includes only two occupations that have decreased for nationals but increased among EU movers: personal care workers and health associate professionals.
- The **bottom-left quadrant** (in red) finds that the share of cleaners and helpers and personal service workers declined substantially among both employed groups.

- The **bottom-right quadrant** shows a number of occupations that have increased for nationals but decreased for EU movers: labourers in mining, construction, manufacturing and transport; stationary plant and machine operators; metal, machinery and related trades workers; sales workers; drivers and mobile plant operators; and business and administration associate professionals.

Overall, these findings indicate a partial correlation between the growing prevalence of EU movers and that of nationals among selected occupations over the 2016-2021 period, particularly for professional occupations; personal service workers; and cleaners and helpers. At the same time, however, **the prevalence of EU movers increased in a number of occupations where the prevalence of nationals declined between 2016 and 2021, and vice-versa.**

**Figure 55: Total number (1 000s) and share (%) of EU movers and nationals at the EU-level, 2021**



Note. Only occupations where EU movers are more than 2% at EU-level in 2016 or 2021 are shown. Main categories are: 1- Managers, 2- Professionals, 3- Technicians and Associate Professionals, 4- Clerical Support Workers, 5- Service and Sales Workers, 6- Skilled Agricultural, Forestry and Fishery Workers, 7- Craft and Related Trades Workers, 8- Plant and Machine Operators, and Assemblers, 9- Elementary Occupations.

Source: EU-LFS 2021, custom extraction by Milieu.

Having explored a number of trends concerning the respective occupational distribution of EU movers and nationals, we now dig deeper into the prevalence of EU movers by looking at the total share of EU movers relative to nationals for each occupation. According to Figure 55, the contribution of mobile labour to total employment is highest among cleaners and helpers (10% of total employment); labourers in mining, construction, manufacturing, and transport (8%); building and related trades workers (7%); and personal service workers (6%). The share of EU movers is smallest among the occupational groups of professionals and 'technicians and associate professionals. Thus, suggesting that in most cases, **current intra-EU mobility patterns may not be sufficient to overcome potential labour shortages in these occupational groups.**

## National perspective

The preceding analysis identified which occupations are more prevalent among EU movers and nationals across the EU. Moving beyond the EU perspective, this subsection focuses on important destinations for movers: Germany, France, Italy, Spain, and the Netherlands. Accordingly, Table 48 and Table 49 present the total number of EU movers compared to nationals as well as employment growth for selected occupations over the 2016-2021 period. Due to data constraints<sup>234</sup>, the analysis focuses on the 17 occupations which comprise at least 2% of all EU movers.

In **Germany**, the distribution of EU movers is largely concentrated within the occupational groups of service and sales workers, plant and machine operators and assemblers, and elementary occupations. In particular, the occupational group of service and sales workers comprises a considerable share of EU movers, accounting for around 12% of all employed personal service workers. Visualised in Table 49, cleaners and helpers, and labourers in mining, construction, manufacturing, and transport have grown among EU movers from 2016 to 2021, while declining among nationals over the same period.

In **Spain**, EU movers contributed relatively large shares of labour in four occupation groups: service and sales workers, craft and related trades, plant and machine operators and assemblers, and elementary occupations. The occupational distribution of EU movers in Spain has been subject to a number of sharp changes over the 2016-2021 period. Sales workers, science and engineering associate professionals, and business and administration professionals demonstrated significant employment growth rates among EU movers. Overall, mobile labour is far more important in occupation groups that are associated with low-to-medium skill levels.

In **France**, the share of EU movers is marginal in all selected occupations except for cleaners and helpers, building and related trades workers, and personal service workers. Furthermore, the number of EU movers among the selected occupations has been subject to sharp increases in the case of business and administration professionals and legal, social, and cultural professionals, while there were decreases to the number of science and engineering professionals and teaching professionals over the 2016-2021 period.

In **Italy**, mobile workers comprise substantial shares of personal care workers, cleaners and helpers, and building and related trades workers, while the share of EU movers employed in professional and technicians and associate professional occupation groups relative to the local population is smallest among the selected Member States. While starting from a small size relative to the local workforce, several professional and

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<sup>234</sup>EU-LFS reliability and confidentiality thresholds

technicians and associate professional occupations (e.g. business and administration associate professionals, science and engineering professionals) demonstrated significant growth from 2016 to 2021.

In the **Netherlands**, three groups saw the highest prevalence of EU movers: elementary occupations, plant and machine operators and assemblers, and craft and related trades. From 2016 to 2021, the mobile labour force grew substantially across nearly all selected occupations in the Netherlands. The number of EU movers employed as science and engineering associate professionals and business administration associate professionals grew by 21 and 17% respectively, between 2016 and 2021. Similarly, other professional occupations also indicated substantial employment growth during this period.

Overall, the preceding country-level trends demonstrate that **the prevalence of EU movers in the selected occupations contain notable differences across EU countries under consideration, both in terms of employment levels and growth.** Furthermore, despite the occupation groups of professionals and technicians and associate professionals experiencing the highest growth in the selected Member States, the prevalence of EU movers is still higher among medium-to-low skill occupation groups, such as service and sales, craft and related trades, and elementary occupations. This is particularly evident for information and communications technology professionals; information and communications technicians; general and keyboard clerks; and health professionals.

It is important to note the limits of this analysis: The ISCO-2D categorisations obscure important details concerning the sector of employment for an occupation, potentially hindering the understanding of key factors behind occupational trends when comparing Member States with different labour market contexts. For example, ISCO-2D classifies both 'nurse' and 'doctor' under the same occupational category of 'health professional', which does not fully reflect the different skills, qualifications, and roles required for each occupation. Similarly, ISCO-2D classifies carpenters and plumbers as 'building and related trades workers', despite their distinct skillsets. This highlights how the broad nature of ISCO-2D as an indicator can mask important differences between occupations, making its use limited for the purpose of identifying potential labour imbalances. Additionally, the methodology used for this analysis excluded 23 of 40 occupations to mitigate limited data availability and reliability, potentially hiding important trends.

Table 48: Total number of Employed EU movers and nationals in selected countries, 2021

Major	Sub-major	DE			ES			FR			IT			NL		
		EU movers	Nationals	Share of EU movers	EU movers	Nationals	Share of EU movers	EU movers	Nationals	Share of EU movers	EU movers	Nationals	Share of EU movers	EU movers	Nationals	Share of EU movers
Professionals	21 Science and Engineering Professionals	86	1 492	5.4	20	566	3.4	14	951	1.5	6	514	1.1	12	309	3.8
	23 Teaching Professionals	81	2 144	3.6	14	1 091	1.3	16	1 254	1.3	9	1 214	0.7	11	424	2.6
	24 Business and Administration Professionals	65	1 301	4.7	15	457	3.2	25	1 500	1.6	3	425	0.7	22	743	2.9
	26 Legal, Social and Cultural Professionals	47	1 148	4.0	12	561	2.1	20	762	2.6	6	480	1.2	11	324	3.2
Technicians and Associate Professionals	31 Science and Engineering Associate Professionals	64	1 631	3.8	12	435	2.6	20	868	2.3	9	831	1.0	6	215	2.8
	32 Health Associate Professionals	106	2 258	4.5	4	215	1.8	6	862	0.7	14	785	1.7	5	257	1.7
	33 Business and Administration Associate Professionals	93	2 761	3.3	42	950	4.3	19	1 824	1.0	14	1 550	0.9	18	588	3.0
Clerical Support Workers	43 Numerical and Material Recording Clerks	100	1 297	7.2	10	494	2.1	6	704	0.9	7	661	1.1	10	337	2.9
Service and Sales Workers	51 Personal Service Workers	173	1 247	12.2	37	551	6.2	32	706	4.4	38	871	4.2	7	281	2.4
	52 Sales Workers	135	1 980	6.4	87	1 744	4.8	15	1 013	1.5	22	1 482	1.5	11	448	2.4
	53 Personal Care Workers	43	553	7.2	13	646	1.9	23	1 151	1.9	105	454	18.7	6	365	1.5
Craft and Related Trades Workers	71 Building and Related Trades Workers (excluding Electricians)	120	793	13.2	72	686	9.4	65	744	8.1	76	712	9.6	10	194	4.7
	72 Metal, Machinery and Related Trades Workers	139	1 647	7.8	17	510	3.3	18	703	2.5	40	782	4.9	9	128	6.4
Plant and Machine Operators, and Assemblers	81 Stationary Plant and Machine Operators	89	761	10.5	19	352	5.2	9	530	1.7	29	564	4.9	6	77	7.7
	83 Drivers and Mobile Plant Operators	133	834	13.8	50	828	5.7	16	948	1.7	48	616	7.2	8	212	3.5
Elementary Occupations	91 Cleaners and Helpers	202	643	23.9	67	744	8.3	74	885	7.8	87	617	12.4	14	171	7.6
	93 Labourers in Mining, Construction, Manufacturing and Transport	179	755	19.2	32	493	6.1	13	547	2.4	29	359	7.4	17	168	9.1
All selected occupations		1 857	23 245	7.4	523	11 323	4.4	393	15 951	2.4	542	12 917	4.0	183	5 241	3.4

Note. Only occupations where EU movers are more than 2% at EU-level are shown. Numbers for EU movers and Nationals are in 1 000s, while the share of EU movers is in percentage.

Source: EU-LFS 2021, custom extraction by Milieu.

**Table 49: Employment growth (CAGR) for EU movers and nationals in selected countries, 2016-2021**

Major	Sub-major	DE			ES			FR			IT			NL		
		EU movers	Nationals	Trends												
Professionals	21 Science and Engineering Professionals	3.2	2.4		6.4	3.0		-11.2	7.5		8.9	0.9		12.8	8.5	
	23 Teaching Professionals	10.4	8.6		-8.7	3.0		-7.3	0.6		4.6	0.6		8.9	2.2	
	24 Business and Administration Professionals	5.1	2.2		13.2	4.2		10.4	6.6		-0.1	-2.2		16.0	6.7	
	26 Legal, Social and Cultural Professionals	4.1	2.4		-6.8	2.0		11.2	10.7		-6.4	-0.6		4.3	1.6	
Technicians and Associate Professionals	31 Science and Engineering Associate Professionals	0.6	-2.5		12.5	4.4		-8.1	-9.9		-1.2	-1.0		21.4	2.4	
	32 Health Associate Professionals	3.5	0.4		-4.0	1.5		-8.2	0.7		-7.5	1.6		3.7	3.3	
	33 Business and Administration Associate Professionals	6.0	-1.2		6.5	0.3		-5.2	-0.1		8.6	-2.3		16.6	3.6	
Clerical Support Workers	43 Numerical and Material Recording Clerks	1.3	-11.4		-3.6	3.0		-11.5	0.2		0.8	-0.3		8.5	4.9	
Service and Sales Workers	51 Personal Service Workers	-2.6	-3.2		-17.6	-14.3		-3.4	-4.4		-6.9	-1.5		-3.9	-4.3	
	52 Sales Workers	1.9	-4.5		19.7	5.4		-10.5	-6.0		-0.2	-1.4		5.8	-2.0	
	53 Personal Care Workers	8.0	6.2		-6.2	4.6		7.9	1.8		-2.4	1.5		3.7	1.6	
Craft and Related Trades Workers	71 Building and Related Trades Workers (excluding Electricians)	-6.4	-4.5		3.7	1.8		-2.2	1.1		-2.4	0.3		7.7	-4.6	
	72 Metal, Machinery and Related Trades Workers	4.7	0.8		-1.7	-0.5		9.9	3.3		1.8	-1.3		12.2	-4.6	
Plant and Machine Operators, and Assemblers	81 Stationary Plant and Machine Operators	2.6	0.2		5.2	0.0		-8.5	-3.0		-0.2	1.5		13.3	3.6	
	83 Drivers and Mobile Plant Operators	5.6	-4.2		4.2	0.9		-1.9	-0.7		6.5	-1.0		5.6	-0.7	
Elementary Occupations	91 Cleaners and Helpers	1.8	-2.9		-5.8	-1.4		2.3	-8.3		-7.7	-0.1		5.5	-3.8	
	93 Labourers in Mining, Construction, Manufacturing and Transport	2.1	-3.0		0.7	1.3		-0.7	-0.7		-0.8	1.2		10.0	1.6	

Note. Employment growth is depicted over the period of 2016 and 2021 in terms of the average annual growth rate (expressed as a percentage).

Source: EU-LFS 2021, custom extraction by Milieu.

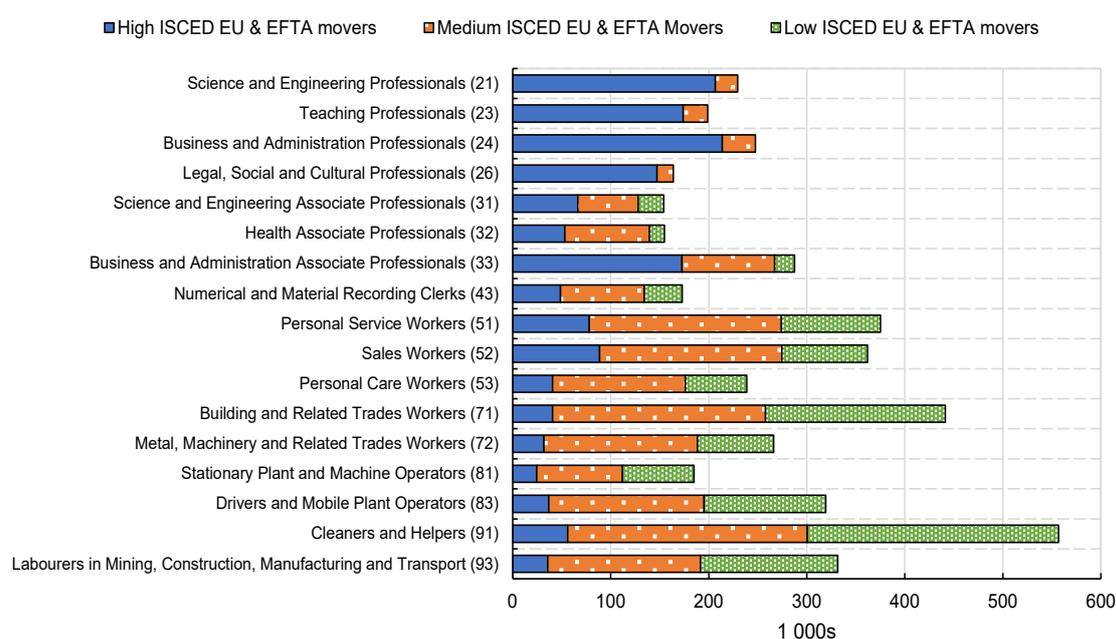
## 4.3.2 Education profile of EU movers

### EU perspective

By examining how EU and EFTA<sup>235</sup> movers (henceforth referred to as ‘movers’) compare to nationals when it comes to educational attainments, the following section will assess the extent to which labour mobility could alleviate potential labour imbalances in the form of educational mismatch across the European Union. However, the geographic dimension of this analysis is limited to the EU-level. This is due to data reliability and confidentiality limitations that emerge upon disaggregating the education profile of movers at the country level.

Figure 56 depicts the number of movers with low, medium, and high levels of education in selected occupations<sup>236</sup>. As expected, professionals and technicians and associate professionals (occupations 21-33) are mainly comprised by movers with high educational attainment, while the representation of low-skilled workers is very small (or nonexistent). Alternatively, the remaining occupation groups mainly entail movers with a medium-to-low educational attainment.

**Figure 56: EU and EFTA movers by educational attainment at the EU-level, 2021**



Note: ‘Low’ educational attainment refers to ISCED levels 0-2 (early childhood, primary and lower secondary education); ‘medium’ refers to ISCED levels 3-4 (upper secondary and post-secondary non-tertiary education); and ‘high’ refers to ISCED levels 5-8 (short-cycle tertiary education and tertiary education at Bachelor, Master’s or Doctoral level). Only occupations where EU movers are more than 2% at EU-level are shown. Due to data limitations, it is not possible to disaggregate EU and EFTA movers. Low reliability for high education of stationary plant and machine operators (81).

Source: EU-LFS 2021, custom extraction by Milieu.

Figure 57 highlights that the profile of movers in nearly all occupations shifted towards higher levels of education, while medium education levels declined over the same period, particularly among the following occupation groups: **service and sales** (personal service

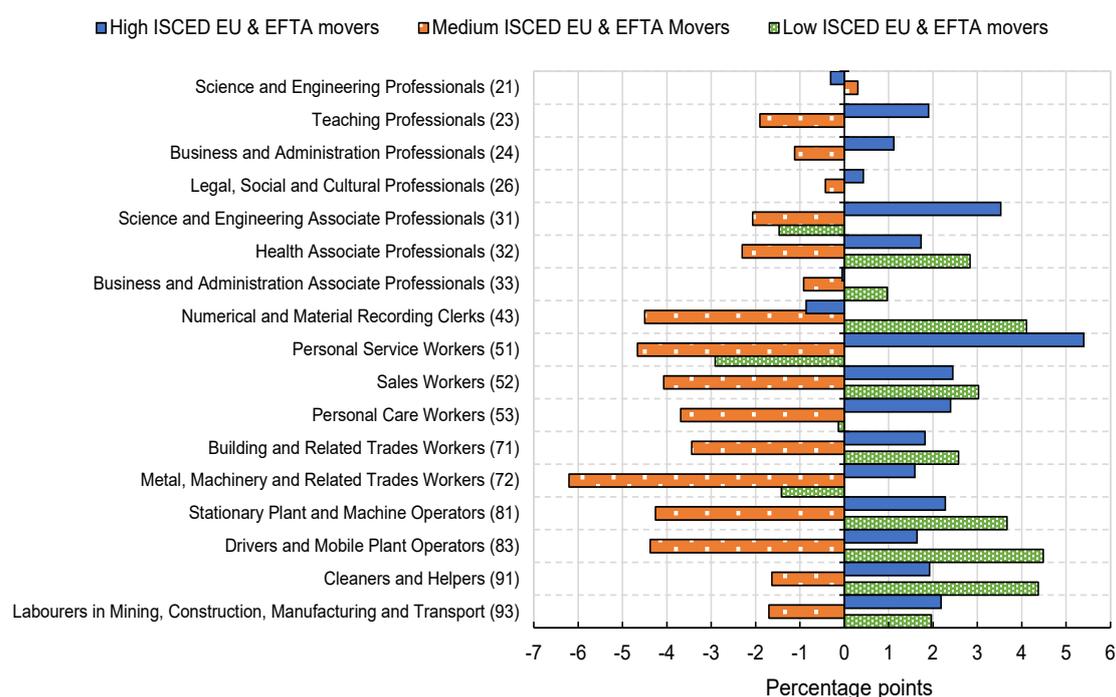
<sup>235</sup> Due to data limitations, it is not possible to disaggregate EU and EFTA movers.

<sup>236</sup> This is based on the 17 selected occupations that comprise more than 2% of all EU movers in 2016 and 2021.

workers; sales workers; personal care workers), **craft and related trades workers** (building and related trades workers; metal, machinery and related trades workers), and **plant and machine operators, and assemblers** (stationary plant and machine operators; assemblers).

To a lesser extent, Figure 57 demonstrates that the share of movers with a low level of education have also increased among the majority of selected occupations over the 2016-2021 period.

**Figure 57: Change in the share of EU and EFTA movers by educational attainment at the EU-level, 2016-2021**



Note: 'Low' educational attainment refers to ISCED levels 0-2 (early childhood, primary and lower secondary education); 'medium' refers to ISCED levels 3-4 (upper secondary and post-secondary non-tertiary education); and 'high' refers to ISCED levels 5-8 (short-cycle tertiary education and tertiary education at Bachelor, Master's or Doctoral level). Only occupations where EU movers are more than 2% at EU-level are shown. Due to data limitations, it is not possible to disaggregate EU and EFTA movers.

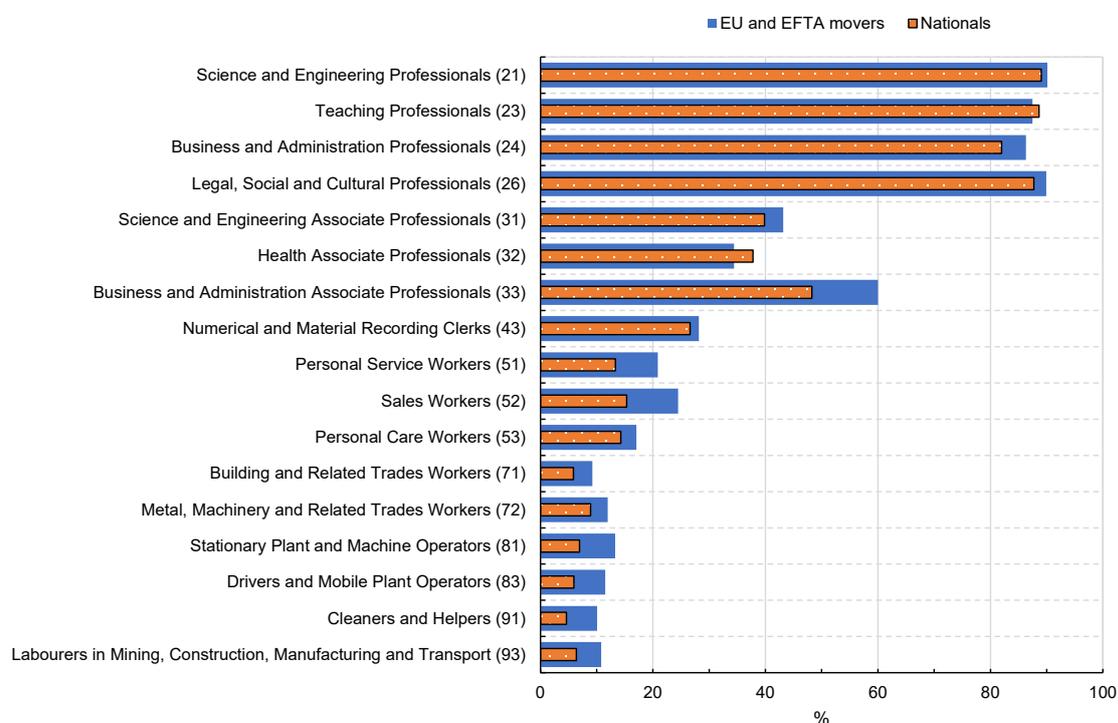
Source: EU-LFS 2021, custom extraction by Milieu.

Accordingly, **the 2016-2021 period appears to have given rise to further polarisation of the education profile of movers in possession of high and low levels of education**, accompanied by a significant decline of the share of mobile workers with a medium level of education. This process is characterised by a substantial increase to the share of movers in possession of high or low levels of education, while the share of movers with a medium level of education has declined accordingly over the same period. However, increases to the share of movers with a low level of education have largely been limited to occupations that are commonly associated with requiring medium or low levels of skills.

Comparing the education profile of movers and nationals, Figure 58 shows that **the share of movers with high educational attainment was higher than nationals across nearly all occupations**, with the exception of teaching professionals and health associate professionals. In the case of the former, this may be indicative of a disparity

between sending and receiving Member States regarding the acquisition of official recognition that are required to perform such roles in the destination country.

**Figure 58: Share of EU and EFTA movers and nationals with high educational attainment (%), 2021**



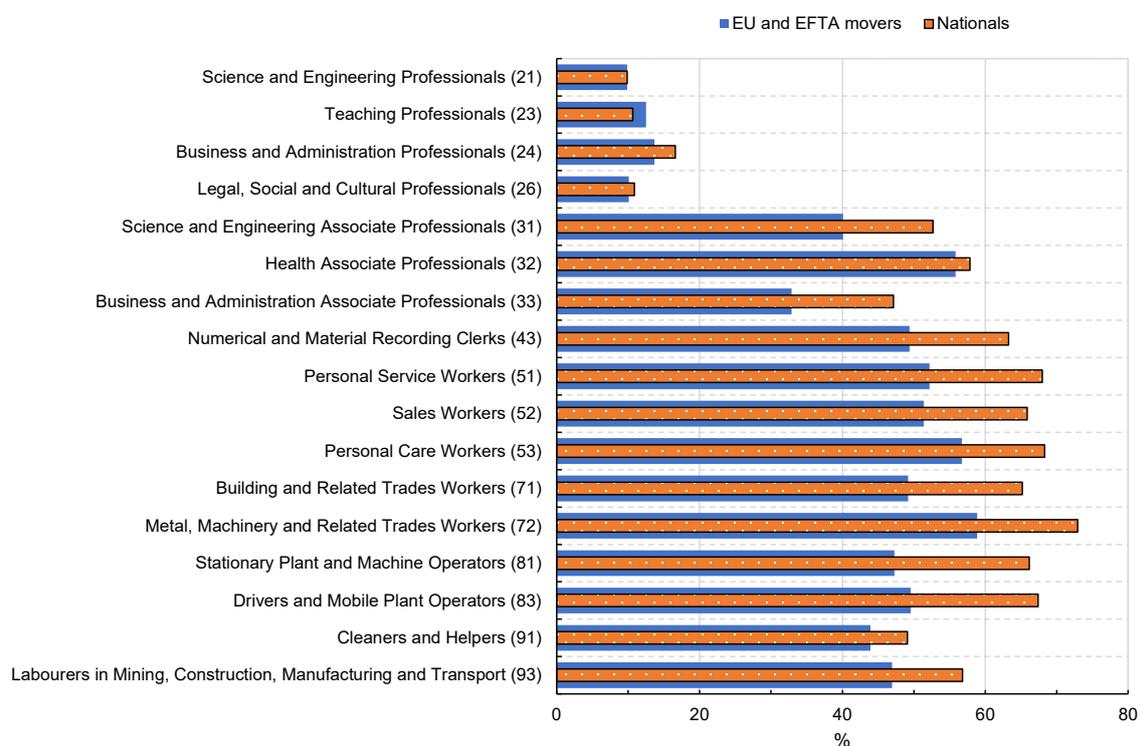
Note: 'High' educational attainment refers to ISCED levels 5-8 (short-cycle tertiary education and tertiary education at Bachelor, Master's or Doctoral level). Only occupations where EU movers are more than 2% at EU-level are shown. Due to data limitations, it is not possible to disaggregate EU and EFTA movers.

Source: EU-LFS 2021, custom extraction by Milieu.

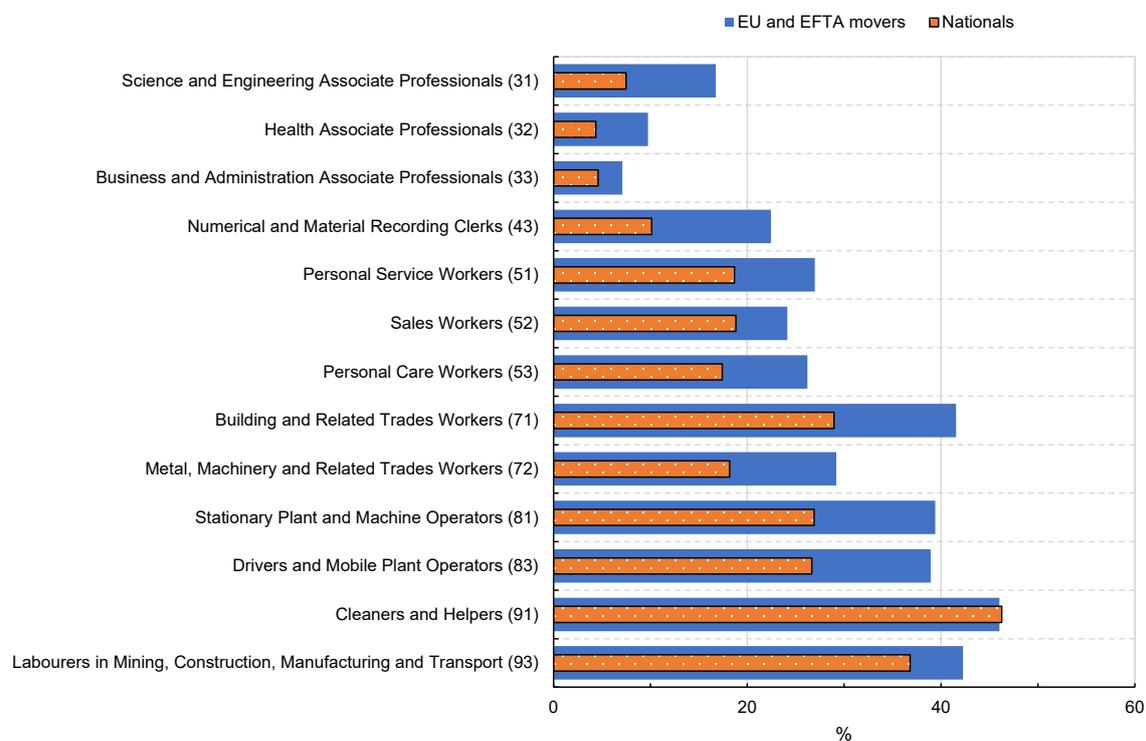
The percentage point difference between movers and nationals with high educational attainment is greater among occupations that are typically associated with requiring low levels of skills, such as cleaners and helpers, stationary plant and machine operators, and sales workers, as opposed to traditional high-skill occupations, such as science and engineering professionals, or legal, social and cultural professionals. These results suggest that **movers are more likely to be 'overeducated'** than their national colleagues. This is particularly obvious for business and administration associate professionals, sales workers, personal service workers, stationary plant and machine operators, and cleaners and helpers.

The comparison between movers and nationals with a medium level of education (Figure 59) looks very different. Across nearly all occupations, the share of nationals with medium educational attainment is substantially higher than movers. Professional occupations are a notable exception, however, as in these occupations most workers are highly educated. Comparing the presence of movers and nationals with a low level of education in these occupations (Figure 60) highlights that a larger share of mobile workers has low educational attainment.

**Figure 59: Share of EU and EFTA movers and nationals with medium educational attainment (%), 2021**



**Figure 60: Share of EU and EFTA movers and nationals with low educational attainment (%), 2021**



Note: 'Medium' educational attainment refers to ISCED levels 3-4 (upper secondary and post-secondary non-tertiary education). 'Low' educational attainment refers to ISCED levels 0-2 (early childhood, primary and lower secondary education). Due to data limitations, it is not possible to disaggregate EU and EFTA movers. Only occupations where EU movers are more than 2% at EU-level are shown. For Figure 60 specifically, No data available for EU/EFTA movers in

business and administration professionals, teaching professionals, legal, social and cultural professionals, and science and engineering professionals; additionally, occupations 21, 23, 24, and 26 are not included as the share of workers with low educational attainment was too low.

Source: EU-LFS 2021, custom extraction by Milieu.

## 4.4 Occupational imbalances at national level and the role of intra-EU mobility

The preceding sections of this chapter used several indicators that, together, provide a better understanding to which extent intra-EU labour mobility so far mitigates imbalances at the occupation level. Indicators such as employment growth and job vacancy rates at the level of occupations were used to assess the demand for labour (Section 4.2), and the prevalence of EU movers within such occupations as an indication of the labour supply (Section 4.3). While taking into account constraints posed by limited data availability and comparability between Member States, this section aims to identify occupational imbalances by detecting signs of potential labour shortages and, examining the extent in which intra-EU labour mobility can mitigate these pressures.

### Identification of labour shortages

Due to the lack of a shared definition, various approaches are used to identify labour shortages<sup>237</sup>. This chapter defines labour shortages in a quantitative sense as a lack of available workers in certain occupations; thus an unmet labour demand. In the following subsections, labour shortages are identified using volume-based indicators, relying exclusively on available data from the **EU-LFS on employment growth** and from **CEDEFOP's online job advertisements** at ISCO-2D level in the absence of other comprehensive and up-to-date quantitative data<sup>238</sup>. Our assumption is that occupations characterised by above-average employment growth and job vacancy rates among nationals, as depicted by Table 51, indicate a potential labour shortage.

While this approach can provide insights into potential labour shortages at the occupational level, it is important to acknowledge its limitations. One limitation is that a high job vacancy rate does not necessarily imply the presence of a labour shortage. Certain occupations, such as those that are typically seasonal in nature, including labourers in mining, construction, manufacturing, and transport, typically have a higher turnover rate, and thus, a higher job vacancy rate. This should be taken into account when assessing potential labour shortages at the occupational level, as it may not be entirely indicative in all cases, particularly in more permanent employment arrangements such as many professional occupations. Another limitation of this approach is that it does not take into account data on unemployment rates, or the number of hours worked, which could provide valuable information on the availability of labour at the occupational level and how it responds to market pressures. Furthermore, this approach does not consider price-based indicators, particularly those based on wages, which can identify when employers respond to difficulties in hiring new workers by raising wages above the

<sup>237</sup> E.g. Veneri (1999); Brunello and Wruuck (2019); McGrath (2021); OECD (2017); European Commission (2022c).

<sup>238</sup> In a recent report by the European Labour Authority (ELA), McGrath (2021), also investigates occupational labour shortages and surpluses in Europe gathering data from EURES National Coordinating Offices (NCOs). Those have been identified by NCOs in different ways, e.g. by looking at the ratio of the number of job seekers to the number of vacancies for each occupation, considering employers' views, examining the extent of sourcing from abroad to fill vacancies, analysing the time required to fill vacancies, looking at the growth in employment relative to growth in education / training output. In the context of our report, CEDEFOP's data was preferred in this report to ensure full geographic coverage at our level of interest, i.e. ISCO-2D occupational level.

average rate for a particular occupation, thereby signalling the presence of a potential labour shortage. Given these significant limitations, it is important to exercise caution when interpreting the results of this analysis. As the focus here is on the role of EU movers in mitigating potential labour shortages at the occupational level, this subsection is primarily limited to the 17 occupations in which mobile labour is most prevalent.

### *Germany*

In Germany, **science and engineering professionals, business and administration professionals, and personal care workers** indicate potential labour shortages due to their above-average employment growth and job vacancy rates. This suggests there are pressures on the demand for labour in these fields. While the employment of EU movers in these occupations has grown more quickly than that of German nationals over the 2016-2021 period, the minor size of the mobile workforce relative to the local population indicates that movers are not playing a significant role in meeting unmet labour demand in the short-term. Despite the high proportion of EU movers employed as personal care workers, there are still indications of a labour shortage. This is also the case for occupations with a low prevalence of mobile workers (see supplementary table), such as retail and other service managers, information and communications technology professionals, and information and communications technicians.

### *Spain*

In Spain, three of the selected occupations are marked by potential labour shortages, characterised by above-average employment growth and job vacancy rates (Table 51): **science and engineering professionals; business and administration professionals; and science and engineering associate professionals**. In these cases, EU movers have seen sustained employment growth of over 6% per year from 2016 to 2021. However, the proportion of EU workers in these occupations remains low as of 2021. Potential labour market pressures are observed in other occupations where the presence of EU movers is relatively low, specifically administrative and commercial managers, as well as for information and communication technology professionals.

### *France*

In France, two of the selected occupations are characterised by possible labour market pressures (Table 51): **science and engineering professionals** as well as **metal, machinery and related trades workers**. The employment growth of EU movers nevertheless dropped among science and engineering professionals while increasing sharply among nationals. Moreover, the relatively low share of EU movers in this occupation further adds to the likelihood of a labour shortage. Potential labour shortages are also identified among occupations with a low prevalence of EU movers, including: chief executives, senior officials and legislators; information and communications technology professionals; information and communications technicians; other clerical support workers; electrical and electronics trades; and food preparation assistants.

### *Italy*

Three occupations are characterised by above-average employment growth and job vacancy rates (Table 51): **science and engineering professionals; numerical and material recording clerks; and labourers in mining, construction, manufacturing and transport**. Despite fast employment growth of EU movers compared to nationals

over the 2016-2021 period among science and engineering professionals, the share of mobile workers in this occupation was quite low in 2021. From 2016 to 2021, the employment share of EU movers decreased among labourers in mining, construction, manufacturing, and transport, while that of nationals slowly expanded. Even still, the share of EU movers remained high in 2021, as did the job vacancy rate. The situation of numerical and material recording clerks is more difficult to interpret due to employment growth following a downward trend, while the job vacancy rate remained high in 2021.

### **Netherlands**

The Netherlands indicates potential labour market pressures on the demand side in three occupations (Table 51): **science and engineering professionals; numerical and material recording clerks; and labourers in mining, construction, manufacturing, and transport**. In these cases, employment among EU movers increased faster than that of nationals from 2016 to 2021. Yet, the relative share of EU movers remained low in 2021 among science and engineering professionals as well as numerical and material recording clerks. Moreover, the job vacancy rate was substantial among labourers in mining, construction, manufacturing, and transport, despite a relatively high prevalence of EU movers.

### **Conclusion**

To conclude, **only a limited number of occupations in which EU workers are prevalent in the selected EU Member States appear to be experiencing labour shortages, assuming that all other factors remain unchanged**. A number of these occupations are common to several Member States, including **science and engineering professionals; labourers in mining, construction, manufacturing, and transport; and business and administration professionals**. As such, the small share of EU movers relative to nationals in these occupations does not suggest that intra-EU labour mobility significantly mitigates potential labour shortages at the occupational level in the short-term. These results, however, also find that in occupations identified as potentially facing labour shortages, employment growth was higher among EU movers than nationals, implying that intra-EU labour mobility could play a larger role in mitigating labour shortages over the long term.

In addition, **potential labour market pressures are also detected among the selected Member States in occupations where the prevalence of EU movers relative to employment is minor**<sup>239</sup>. While these occupations differ to a certain extent across the selected EU Member States, the most common are information and communications technology professionals; information and communications technicians; other clerical support workers; and electrical and electronics trades workers.

**While encouraging greater labour mobility for the occupations mentioned is desirable, it should be accompanied by other measures aimed at increasing the national labour supply**. This may include active labour market policies to increase employment rates, providing education and training to expand the pool of qualified workers, and promoting internal mobility to make it easier for people to move between different occupations and sectors within the country.

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<sup>239</sup> 'Minor' occupations comprise less than 2% of all EU movers in 2021.

## 4.5 Supplementary tables

**Table 50: Sub-major occupations according to the ISCO-08 2D classification**

ISCO 08, 2D	Sub-major occupation title
11	Chief Executives, Senior Officials and Legislators
12	Administrative and Commercial Managers
13	Production and Specialized Services Managers
14	Hospitality, Retail and Other Services Managers
21	Science and Engineering Professionals
22	Health Professionals
23	Teaching Professionals
24	Business and Administration Professionals
25	Information and Communications Technology Professionals
26	Legal, Social and Cultural Professionals
31	Science and Engineering Associate Professionals
32	Health Associate Professionals
33	Business and Administration Associate Professionals
34	Legal, Social, Cultural and Related Associate Professionals
35	Information and Communications Technicians
41	General and Keyboard Clerks
42	Customer Services Clerks
43	Numerical and Material Recording Clerks
44	Other Clerical Support Workers
51	Personal Service Workers
52	Sales Workers
53	Personal Care Workers
54	Protective Services Workers
61	Market-oriented Skilled Agricultural Workers
62	Market-Oriented Skilled Forestry, Fishery and Hunting Workers
63	Subsistence Farmers, Fishers, Hunters and Gatherers
71	Building and Related Trades Workers (excluding Electricians)
72	Metal, Machinery and Related Trades Workers
73	Handicraft and Printing Workers
74	Electrical and Electronics Trades Workers
75	Food Processing, Woodworking, Garment and Other Craft and Related Trades Workers
81	Stationary Plant and Machine Operators
82	Assemblers
83	Drivers and Mobile Plant Operators
91	Cleaners and Helpers
92	Agricultural, Forestry and Fishery Labourers
93	Labourers in Mining, Construction, Manufacturing and Transport
94	Food Preparation Assistants
95	Street and Related Sales and Service Workers
96	Refuse Workers and Other Elementary Workers

**Table 51: Employment growth (CAGR) and Job Vacancy Rate (2021) across all occupations in selected countries**

Occupations	DE		ES		FR		IT		NL	
	Empl. growth (CAGR)	Job Vacancy Rate (2021)	Empl. growth (CAGR)	Job Vacancy Rate (2021)	Empl. growth (CAGR)	Job Vacancy Rate (2021)	Empl. growth (CAGR)	Job Vacancy Rate (2021)	Empl. growth (CAGR)	Job Vacancy Rate (2021)
11 Chief Executives, Senior Officials and Legislators	-3.7	3.9	1.1	1.5	16.8	8.1	-0.5	4.7	-15.5	4.4
12 Administrative and Commercial Managers	-2.9	16.6	4.4	3.4	-1.1	14.4	-1.6	40.8	5.3	14.9
13 Production and Specialized Services Managers	-1.8	5.7	0.9	1.3	-7.6	4.8	0.1	3.1	2.0	10.1
14 Hospitality, Retail and Other Services Managers	1.5	13.7	0.0	0.5	8.6	2.4	-2.9	2.9	2.5	10.1
21 Science and Engineering Professionals	2.7	8.2	3.2	2.0	7.5	6.9	1.0	8.9	8.5	11.9
22 Health Professionals	0.6	4.6	3.0	0.5	2.8	4.6	-1.0	3.1	3.8	4.5
23 Teaching Professionals	8.6	1.6	2.9	0.3	0.3	0.7	0.7	0.4	2.2	2.8
24 Business and Administration Professionals	2.6	8.8	4.7	2.4	6.8	6.1	-2.1	12.5	6.9	5.5
25 Information and Communications Technology Professionals	4.4	21.3	4.3	9.8	14.9	10.8	3.4	28.4	8.7	12.6
26 Legal, Social and Cultural Professionals	2.3	3.2	1.9	0.7	10.8	4.2	-0.7	1.8	1.3	3.5
31 Science and Engineering Associate Professionals	-2.2	5.8	4.6	1.7	-9.7	12.1	-0.9	5.5	2.5	9.1
32 Health Associate Professionals	1.2	1.9	1.5	1.0	0.6	4.3	1.3	0.7	3.2	1.7
33 Business and Administration Associate Professionals	-0.7	5.1	0.7	2.4	0.0	9.8	-2.3	5.4	3.6	8.4
34 Legal, Social, Cultural and Related Associate Professionals	-15.5	6.1	4.9	0.7	0.4	4.6	-1.1	3.8	2.7	2.1
35 Information and Communications Technicians	8.2	7.2	7.8	1.0	2.6	7.6	3.5	3.4	5.1	7.2
41 General and Keyboard Clerks	12.4	1.1	4.1	0.6	2.0	2.5	4.1	1.1	-4.1	6.4
42 Customer Services Clerks	-4.0	7.9	1.6	0.4	0.8	6.6	-3.2	4.0	4.3	10.5
43 Numerical and Material Recording Clerks	-10.3	2.8	3.2	0.6	0.2	8.1	-0.1	9.8	4.6	10.7
44 Other Clerical Support Workers	4.6	7.5	-1.1	3.1	3.6	27.5	-3.9	5.6	1.6	3.8
51 Personal Service Workers	-2.3	3.0	-14.7	1.3	-3.9	6.9	-2.0	3.0	-4.4	7.2
52 Sales Workers	-3.7	3.0	6.8	0.6	-5.6	11.6	-1.3	4.1	-2.1	7.7
53 Personal Care Workers	6.8	7.8	5.1	0.5	2.1	4.6	0.5	0.5	1.5	2.1
54 Protective Services Workers	9.3	1.4	0.9	0.1	0.1	2.0	-0.4	1.1	1.5	2.4
61 Market-oriented Skilled Agricultural Workers	0.5	0.6	0.0	0.0	-3.6	0.4	-0.6	0.0	-4.5	0.4
62 Market-Oriented Skilled Forestry, Fishery and Hunting Workers	2.7	20.2	2.2	0.0	-0.6	0.1	-4.4	0.0	0.0	0.0
71 Building and Related Trades Workers (excluding Electricians)	-3.8	4.6	2.7	0.4	0.9	4.9	-0.2	0.7	-4.2	5.8
72 Metal, Machinery and Related Trades Workers	1.3	3.8	0.0	1.0	3.7	8.1	-1.2	3.3	-4.1	14.7
73 Handicraft and Printing Workers	-0.7	4.4	-3.8	0.6	-0.2	1.1	0.5	0.6	0.0	9.2
74 Electrical and Electronics Trades Workers	-4.3	7.2	0.4	1.6	4.3	10.3	-0.1	8.4	1.9	14.7
75 Food Processing, Woodworking, Garment and Other	-1.3	3.1	-3.2	0.5	1.7	5.8	0.5	1.7	-4.0	9.2
81 Stationary Plant and Machine Operators	0.8	5.8	1.1	1.8	-3.5	6.9	1.6	2.2	4.2	39.9
82 Assemblers	8.7	11.6	6.4	1.1	-9.6	5.4	1.4	8.9	-0.5	13.4
83 Drivers and Mobile Plant Operators	-2.3	3.7	1.4	0.4	-0.4	6.6	-0.3	1.2	-0.9	15.5
91 Cleaners and Helpers	-0.8	2.1	-1.3	0.1	-6.8	3.3	-2.5	2.1	-3.2	6.1
92 Agricultural, Forestry and Fishery Labourers	-3.9	9.0	-0.8	0.0	0.0	2.1	2.0	0.2	1.1	5.6
93 Labourers in Mining, Construction, Manufacturing and Transport	-1.1	15.2	2.5	0.3	0.6	25.0	1.0	12.6	2.1	17.6
94 Food Preparation Assistants	-4.4	3.2	1.3	0.8	2.0	9.9	-4.3	9.6	-5.4	10.2
95 Street and Related Sales and Service Workers	0.0	0.0	1.9	0.4	0.0	0.0	-6.6	0.2	0.0	0.0
96 Refuse Workers and Other Elementary Workers	-0.3	5.8	0.2	0.1	-3.0	1.1	0.4	0.5	-12.9	24.0
	0.2	6.5	1.6	1.2	1.0	6.9	-0.6	5.3	0.4	9.4

Note. Employment growth is over the period of 2016 and 2021 in CAGR (Compound Annual Growth Rate in%), while the job vacancy rate is in 2021. The job vacancy rate is calculated as online job advertisements over the sum of online job advertisements and total employment per occupation and is expressed in%. In green (red) are those occupations that have an employment growth or job vacancy rate above (below) the national average (calculated considering all occupations). Main categories are: 1- Managers, 2- Professionals, 3- Technicians and Associate Professionals, 4- Clerical Support Workers, 5- Service and Sales Workers, 6- Skilled Agricultural, Forestry and Fishery Workers, 7- Craft and Related Trades Workers, 8- Plant and Machine Operators, and Assemblers, 9- Elementary Occupations.

Source: EU-LFS 2021, custom extraction by Milieu and CEDEFOP, 2021.

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## Annex B: Methodological notes

### B.1: Definitions and measurements

When measuring labour mobility for the purposes of supporting policy-making, it is important that what is captured empirically relates to what is defined by the legislation. The box below explains the groups covered and defined by the EU legislation on free movement, and their measurement in this report.

Legal concepts and definitions	Statistical concept and definition
<p><b>Free movement of citizens</b></p> <p>EU citizens and their family members have the right to move and reside freely within the territory of the Member States. However, the right of residence for more than three months is only granted to EU citizens and their family members if they are workers or self-employed in the host Member State; inactive EU citizens have the right to reside in another Member State for more than three months if they have sufficient resources for themselves and their family members not to become a burden on the host Member State, if they are enrolled at a private or public establishment and if they have comprehensive sickness insurance cover<sup>240</sup>.</p>	<p><b>EU movers</b></p> <p>EU movers are defined as EU citizens who have their usual residence in a Member State other than their country of citizenship (stock), or who moved their usual residence to a Member State other than their country of citizenship in a given period of time (flow). Unless otherwise specified it concerns EU-27 citizens. The concept of 'usual residence' is reflected similarly in Eurostat population statistics and the EU-LFS. All three sources refer to the usually resident population as those persons who have resided, or intend to reside, in a country for at least 12 months<sup>241</sup>.</p> <p>The report focuses on EU movers who were also born outside their current country of residence. However, this distinction is only possible for figures based on EU-LFS. When referring to population and migration statistics, all persons which do not have the citizenship of the respective Member State are looked at.</p>
<p><b>Workers and jobseekers enjoying the right to free movement</b></p> <p>The notion of worker is only defined through case law – based on this, it can be considered that '(mobile) workers' are EU citizens who are in an employment relationship, and who carry out real and genuine activities which are not purely marginal and ancillary, in a Member State other than their state of citizenship<sup>242</sup>. While legislation speaks in some instances of migrants or 'EU-migrants' this report uses the concept of mobile worker/ mover, to distinguish between EU citizens using their right to free movement and third country nationals which are considered as</p>	<p><b>Active EU movers</b></p> <p>The legal concepts of mobile workers and jobseekers are approximated by looking at 'active EU movers'. These include EU-28 citizens who are employed or unemployed in an EU Member State other than their country of citizenship (and were born outside that country, see above). The main data source for looking at this group is the EU-LFS. According to EU-LFS methodology, the group of 'employed' includes persons who did any work (one hour or more) for pay or profit during the reference week, and</p>

<sup>240</sup> Directive 2004/38/EC, Art. 7

<sup>241</sup> E.g. Eurostat (2019), 'Population (national level) (demo\_pop)', *Reference Metadata in Euro SDMX Metadata Structure*, point 3.4; Eurostat (2018).

<sup>242</sup> Directive 2004/38/EC and CJEU case law. See also Verschueren (2015), 'Free movement of workers: the role of Directive 2014/54/EU in tackling current and future challenges', *Presentation at the 2015 Equinet conference*, Universiteit Antwerpen, Antwerpen.

Legal concepts and definitions	Statistical concept and definition
<p>migrants. Furthermore, EU legislation stipulates that for the purposes of the right of residence in another EU Member State of more than three months, Union citizens who are no longer employed or self-employed can retain their status as workers under certain conditions or move to the status of jobseekers<sup>243</sup>. EU citizens have the right to move to another Member State to look for work and to receive the same assistance from national employment offices; they have the right to reside in another Member State with the status of 'jobseeker' as long as they continue to seek employment and have a genuine chance of being engaged<sup>244</sup>.</p>	<p>those who had a job or business but were temporarily absent. The group of 'unemployed' includes those who were not working during the reference week, but who had found a job starting within three months, or who are actively seeking employment and are available to work<sup>245</sup>.</p>
Frontier workers, seasonal workers	Cross-border workers
<p>Frontier workers are defined as cross-border workers who return to their country of residence 'as a rule daily or at least once a week'<sup>246</sup>. This definition stems from Regulation (EC) No 883/2004 which assigns specific rights to social security to such workers and their family members.</p> <p>Directive 2014/36/EU concerning seasonal workers from third countries defines these workers as migrants who come to work in a Member State for a limited duration. Intra-EU seasonal workers benefit from the right to free movement and equal treatment like any other EU worker.</p>	<p>The EU-LFS explicitly asks for respondents' 'country of place of work' which may be different to the country of residence, and which allows for cross-border workers to be identified. However, the survey does not ask for the frequency of commute nor of the underlying employment relationship. Cross-border workers therefore include frontier workers as well as longer-term posted workers and seasonal workers. Given the small number of longer postings and the likely underrepresentation of posted as well as of seasonal workers in a sample-survey like the LFS, these figures are, however, not very reliable.</p>

## B.2: Main data sources : EU Labour Force Survey (EU-LFS) and Eurostat Population Statistics

### EU Labour Force Survey (EU-LFS)

The EU-LFS is a large household sample survey providing quarterly and annual results on labour participation of people aged 15 and above. The EU-LFS measures employment, unemployment and inactivity, and also collects other information on the resident population, in particular citizenship, which can be used to produce estimates of the number of EU citizens living/working in another Member State. EU-LFS data is therefore the best EU wide source to estimate numbers of active EU movers (mobile workers). In addition, it can provide more information about specific characteristics of EU mobile citizens, such as age and gender, sector of employment, occupation, education level, etc.

<sup>243</sup> Directive 2004/38/EC.

<sup>244</sup> Regulation (EU) No 492/2011, Art. 5; Directive 2004/38/EC, Art. 14(4)(b); Verschueren (2015).

<sup>245</sup> Eurostat (2021). Refer especially to p. 55 and the description of variables WSTATOR and SEEKWORK.

<sup>246</sup> Regulation (EC) No 883/2004, Art. 1(f).

Since the EU-LFS has a legal basis<sup>247</sup>, data collection in the Member States are harmonised to a considerable extent. Comparability of figures is ensured by using the same concepts and definitions especially the ILO definitions of employment and unemployment; using common classifications (NACE, ISCO, etc.); and recording the same set of characteristics in each country.

Microdata are accessible for researchers.

The EU-LFS has the following distinct advantages:

- For some countries, it is the only source with the suitable frequency of data on the stocks of EU foreigners broken down by citizenship.
- EU-LFS data are available on a quarterly basis and published around four months after data collection, making it possible to identify recent trends.
- The EU-LFS provides information about the length of time for which foreigners have been established in the country. It thus enables an estimate of the inflows that occurred over a certain time and helps to distinguish recent movers from those who have been in the country for a longer time.
- While the EU-LFS data might underestimate the absolute numbers of mobile workers in a country (stock), it is likely to give a reasonable indication of the changes over time (flows).
- It includes many variables related to the employment situation and socio-demographic profile of respondents.

However, estimations of 'EU movers' can suffer the following limitations<sup>248</sup>:

- Mobile citizens might be underrepresented in the survey with the extent of underrepresentation being unclear (e.g. not registered, non-responding), thus making an extrapolation of the real size more difficult and less predictable than when using a census.
- Small sample sizes of EU movers reduce the possibility of providing detailed analysis of data (e.g. a combined analysis of the employment and skills profile of mobile workers in countries with few movers is impossible).
- Under-coverage of recently arrived foreigners due to delay in entering the reference sample frame.

As a result, EU-LFS estimations of stocks of EU foreigners are consistently lower than figures from migration statistics, as has been noted over the past years.

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<sup>247</sup> Originally Regulation (EEC) No 577/98 of 9 March 1998 on the organisation of a labour force sample in the Community. This was subsequently amended by Regulation (EU) 2019/1700 establishing a common framework for European statistics relating to persons and households, based on data at individual level collected from samples.

<sup>248</sup> European Commission (2008), 'Employment in Europe 2008', European Commission (DG EMPL), Brussels, p. 103; Eurostat (2022h).

## Population statistics (including international migration statistics)

International migration flows by groups of citizenship, groups of country of birth, groups of country of previous/next usual residence, age and sex and population stocks by groups of citizenship, groups of country of birth, age and sex are collected based on Regulation (EC) No 862/2007 (EU Regulation, 2007)<sup>249</sup> and related Implementing Regulations.

Eurostat population statistics provide data on the *stocks* of foreigners/foreign-born persons on 1 January of the reference year<sup>250</sup>. For the purpose of harmonisation, Eurostat recommends the definition of 'population on 1 January' to refer to the 'usually resident population' and defines this as persons who either 'have lived in their place of usual residence<sup>251</sup> for a continuous period of at least 12 months before the reference time; or those who arrived in their place of usual residence during the 12 months before the reference time with the intention of staying there for at least one year'<sup>252</sup>.

Eurostat migration and citizenship data provide data on *inflows and outflows* by citizenship or country of birth or previous/next country of residence<sup>253</sup>. Due to legal deadlines and including the time needed for Eurostat to validate and process the data migration statistics are published more than one year after the reference period/date<sup>254</sup>. Data on inflows and outflows equally refers to persons moving their place of usual residence to another country with the intention of staying at least for one year.

According to Regulation (EC) No 862/2007, there is no obligation for Member States to breakdown the numbers of EU foreigners by citizenship. Still in 2018, only Cyprus and Malta, and Spain for some countries of citizenship, did not report breakdowns by EU citizenship. However, when selecting a specific age group (in the case of this report, 20 to 64 years), the number of Member States detailing the nationality of mobile EU citizens decreases to 21<sup>255</sup>.

Further reported variables are age group and sex. No information is available concerning the duration of residence, employment status, or education level.

Migration statistics are mostly based on administrative registers which includes coverage errors, mainly due to the non-propensity to register or deregister. The practical necessity to be registered for further administrative services (e.g. to open a bank account, to rent a flat) make data on arrivals more complete than data on departures<sup>256</sup>. Data providers use the following strategies to increase the reliability of these statistics: exchange of data with other National Statistical Institutes; estimation techniques; usage of additional administrative sources.

<sup>249</sup> Regulation (EC) No 862/2007 .

<sup>250</sup> This is collected in data sets [Migr\_pop1ctz], [Migr\_pop2ctz], [Migr\_pop3ctb], [Migr\_pop4ctb], [Migr\_pop5ctz] and [Migr\_pop6ctb]. In the codes 'CTZ' refers to country of citizenship, and 'CTB' country of birth. Throughout this report, country of citizenship is used.

<sup>251</sup> Usual residence means the place where a person normally spends the daily period of rest, regardless of temporary absences for purposes of recreation, holidays, visits to friends and relatives, business, medical treatment or religious pilgrimage; cf. Eurostat (2019).

<sup>252</sup> Ibid.

<sup>253</sup> Eurostat data sets [Migr\_imm], [Migr\_emi] and respective subsets.

<sup>254</sup> As of November 2022, the latest data on 'stock' refers to the situation on 1st January 2021 and the latest data on 'in- and outflows' refers to flows that occurred during 2020.

<sup>255</sup> Eurostat (2022g).

<sup>256</sup> Fajth, et al. (2018), 'Monitoring Migration within the EU with Existing Data', *REMINDER Project*, Maastricht, p. 13.

The fact that under-coverage is less likely for arriving movers, but that many movers may not deregister, explains why data on stocks from population statistics are usually higher than those estimated by the EU-LFS.

Although both citizenship and previous/next country of residence are collected for inflow/outflow data, the two cannot be combined. This implies for instance that the estimates on inflows to Member States either have to be based on previous country residence being another Member State (and thus include third-country nationals) or have to be based on citizenship of another Member States (and thus include EU citizens immigrating from third countries).

## Annex C: Data annex

## C.1: The mobile working age population in 2016-2021

**Table 52: Population on 1 January of EU movers in EU and EFTA countries  
(1 000s), 2016-2021**

MS	2016	2017	2018	2019	2020	2021	2021/2020 change (%)
<b>EU-27</b>	<b>11 847</b>	<b>12 424</b>	<b>12 878</b>	<b>12 949</b>	<b>9 942</b>	<b>10 023</b>	<b>+1</b>
AT	465	493	520	546	563	588	+5
BE	601	609	617	630	630	642	+2
BG	9	9	9	9	7	8	+8
CY	81	83	87	93	85	75	-11
CZ	166	176	184	193	195	200	+2
DE	2 935	3 047	3 200	3 321	3 290	3 330	+1
DK	152	163	171	180	168	171	+2
EE	12	13	16	17	17	16	-4
EL	156	154	158	157	128	119	-7
ES	1 402	1 393	1 385	1 406	1 280	1 285	0
FI	72	75	75	76	73	74	+2
FR	954	964	960	969	911	898	-1
HR	8	9	10	10	11	12	+11
HU	66	61	61	58	61	58	-6
IE	321	331	336	346	275	279	+2
IT	1 176	1 187	1 201	1 147	1 125	1 073	-5
LT	5	5	5	5	6	5	-16
LU	160	166	170	172	169	170	+1
LV	4	4	5	5	5	5	-5
MT	17	23	30	36	27	35	+30
NL	362	385	414	447	449	474	+6
PL	19	22	25	26	27	61	+125
PT	75	84	97	113	111	117	+6
RO	41	45	47	49	49	49	0
SE	216	221	227	231	218	213	-2
SI	14	15	16	17	17	17	-3
SK	41	43	45	46	46	47	+2

MS	2016	2017	2018	2019	2020	2021	2021/2020 change (%)
<b>EFTA</b>	<b>1 264</b>	<b>1 289</b>	<b>1 307</b>	<b>1 327</b>	<b>1 312</b>	<b>1 335</b>	<b>+2</b>
<b>CH</b>	980	997	1 007	1 018	1 004	1 023	+2
<b>IS</b>	17	21	27	32	34	35	+3
<b>NO</b>	267	270	273	277	274	277	+1

Note: Numbers on stocks of EU-27 movers are estimated for: Cyprus, France, Croatia, Greece, Malta, Poland in 2020. Estimation based on equivalent shares of EU-27 movers from EU-28 movers in EU-LFS data.

Source: Eurostat [migr\_pop1ctz], Milieu calculations

Table 53: Inflows, outflows, and net mobility of Member States' own citizens (1 000s), 2016-2020

Country	Inflows					Outflows					Net flows				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
<b>EU/EFTA</b>	<b>627</b>	<b>677</b>	<b>699</b>	<b>742</b>	<b>611</b>	<b>948</b>	<b>925</b>	<b>857</b>	<b>847</b>	<b>686</b>	<b>-452</b>	<b>-378</b>	<b>-290</b>	<b>-243</b>	<b>-167</b>
<b>EU-27</b>	<b>605</b>	<b>655</b>	<b>678</b>	<b>721</b>	<b>589</b>	<b>918</b>	<b>895</b>	<b>827</b>	<b>818</b>	<b>662</b>	<b>-443</b>	<b>-368</b>	<b>-281</b>	<b>-235</b>	<b>-165</b>
AT	7	7	7	7	7	11	11	10	11	9	-4	-4	-4	-4	-2
BE	12	12	12	12	12	23	23	24	23	18	-11	-10	-12	-11	-6
BG	6	9	11	16	18	21	22	24	30	3	-14	-13	-14	-14	15
CY	3	4	4	4	2										
CZ	4	4	4	4	3	6	5	5	5	3	-2	-1	-1	-1	0
DE	75	88	108	115	108	175	163	161	165	139	-101	-75	-52	-50	-31
DK	14	14	13	13	13	11	11	10	10	9	3	3	3	3	5
EE	6	7	7	6	5	8	7	5	5	5	-2	0	1	1	-1
EL	22	23	23	24	15										
ES	38	48	52	53	34	65	62	57	56	47	-27	-14	-5	-3	-14
FI	5	5	6	6	7	8	8	9	8	7	-3	-3	-3	-2	0
FR	95	87	89	89	56										
HR	6	6	6	7	6	26	35	27	24	15	-20	-29	-21	-17	-9
HU	26	29	30	30	29	28	26	22	21	18	-2	3	8	9	10
IE	21	19	23	16	24	23	24	20	21	17	-2	-4	4	-5	7

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Country	Inflows					Outflows					Net flows				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
IT	25	28	31	46	37	86	86	89	94	91	-61	-58	-57	-48	-54
LT	12	9	14	18	18	37	37	23	19	12	-24	-29	-8	-1	7
LU	1	1	1	1	1	2	2	2	2	2	-1	-1	-1	-1	-1
LV	3	4	3	3	3	13	12	9	8	6	-10	-8	-6	-4	-3
MT	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0
NL	27	28	29	30	29	40	37	35	33	26	-13	-9	-6	-3	3
PL	69	70	54	50	34	141	127	106	102	85	-73	-58	-52	-52	-51
PT	11	16	16	20	18										
RO	100	124	118	136	92	169	173	163	159	129	-69	-49	-45	-23	-37
SE	13	12	11	10	10	16	15	16	15	15	-3	-3	-5	-5	-5
SI	2	2	3	2	6	7	7	5	5	4	-5	-5	-2	-2	2
SK	1	1	1	1	1	3	3	2	3	2	-2	-2	-1	-2	-1
EFTA	<b>21</b>	<b>21</b>	<b>21</b>	<b>21</b>	<b>22</b>	<b>30</b>	<b>30</b>	<b>31</b>	<b>30</b>	<b>24</b>	<b>-9</b>	<b>-9</b>	<b>-9</b>	<b>-8</b>	<b>-2</b>
CH	16	16	16	16	17	22	23	23	23	19	-6	-7	-7	-6	-1
IS	1	2	1	1	1	2	2	2	1	1	0	0	0	0	0
NO	3	3	4	3	4	6	6	6	5	4	-2	-2	-2	-2	-1

Note: Outflow data not available for Cyprus, France, Greece, and Portugal. For 2016-2019, 'EU movers' and 'Third-country nationals (TCN)' refer to citizens from (non-)EU-28 countries. From 2020 onwards, the reference group is (non-)EU-27 countries. Estimated values for outflows in Estonia in 2020. EFTA movers have been omitted due to small size and/or data unavailability.

Source: Eurostat international migration statistics (Migr\_imm1ctz, Migr\_emi1ctz), Milieu calculations.

Table 54: Inflows, outflows, and net mobility of citizens of other Member States (1 000s), 2016-2020

Country	Inflows					Outflows					Net flows				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
<b>EU/EFTA</b>	<b>945</b>	<b>954</b>	<b>946</b>	<b>953</b>	<b>804</b>	<b>476</b>	<b>531</b>	<b>519</b>	<b>586</b>	<b>470</b>	<b>388</b>	<b>346</b>	<b>348</b>	<b>291</b>	<b>282</b>
<b>EU-27</b>	<b>851</b>	<b>862</b>	<b>853</b>	<b>860</b>	<b>722</b>	<b>409</b>	<b>464</b>	<b>451</b>	<b>523</b>	<b>413</b>	<b>361</b>	<b>321</b>	<b>324</b>	<b>262</b>	<b>257</b>
<b>AT</b>	52	51	52	54	51	26	26	26	28	27	26	26	26	26	24
<b>BE</b>	46	47	50	54	45	30	31	29	31	26	16	16	21	23	19
<b>BG</b>	1	1	1	1	1	1	1	0	0	0	0	0	1	1	1
<b>CY</b>	6	7	7	6	7										
<b>CZ</b>	24	14	15	28	15	5	3	2	29	8	19	11	12	-1	7
<b>DE</b>	321	318	300	279	243	135	164	168	199	160	186	154	132	80	84
<b>DK</b>	21	22	21	19	18	18	20	21	25	19	3	1	0	-5	-1
<b>EE</b>	3	4	4	3	3	2	2	2	4	4	1	2	2	0	-1
<b>EL</b>	12	13	12	10	5										
<b>ES</b>	86	104	108	113	63	87	105	81	74	52	-1	-1	28	39	10
<b>FI</b>	6	5	6	5	5	3	3	4	3	3	3	2	2	2	2
<b>FR</b>	58	52	53	50	34										
<b>HR</b>	2	2	2	2	3	0	1	1	1	1	1	1	1	1	2
<b>HU</b>	8	9	9	9	13	6	5	13	13	8	3	4	-4	-4	4
<b>IE</b>	22	21	23	21	15	15	14	12	13	11	7	6	11	9	4

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Country	Inflows					Outflows					Net flows				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
IT	51	49	45	46	34	16	15	16	22	13	35	34	29	24	21
LT	1	1	1	1	1	0	0	0	0	0	1	1	1	1	1
LU	13	13	13	14	12	7	7	7	8	8	6	6	6	5	4
LV	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0
MT	7	10	10	8	5	3	2	3	2	2	5	8	7	6	3
NL	53	60	66	75	63	29	30	33	35	34	24	30	33	40	29
PL	17	17	14	19	57	13	17	13	15	20	4	0	1	4	37
PT	5	6	6	10	6										
RO	5	8	7	8	5	0	5	5	8	5	4	3	3	0	0
SE	25	25	23	21	16	10	10	11	12	11	15	15	13	9	4
SI	3	3	3	3	2	2	2	2	2	2	1	1	1	1	0
SK	3	2	2	2	2	0	0	0	0	0	3	2	2	2	2
<b>EFTA</b>	<b>95</b>	<b>92</b>	<b>93</b>	<b>93</b>	<b>82</b>	<b>67</b>	<b>68</b>	<b>69</b>	<b>64</b>	<b>57</b>	<b>27</b>	<b>25</b>	<b>24</b>	<b>29</b>	<b>25</b>
CH	72	68	68	69	64	50	52	56	54	45	21	15	12	15	19
IS	5	8	8	6	4	1	1	2	2	4	4	7	6	4	1
NO	18	17	18	18	13	16	14	12	7	8	2	3	6	10	6

Note: Outflow data not available for Cyprus, France, Greece, and Portugal. For 2016-2019, 'EU movers' and 'Third-country nationals (TCN)' refer to citizens from (non-)EU-28 countries. From 2020 onwards, the reference group is (non-)EU-27 countries. Estimated values for outflows in Estonia and Malta in 2020.

Source: Eurostat international migration statistics (Migr\_imm1ctz, Migr\_emi1ctz), Milieu calculations.

Table 55: Inflows, outflows, and net mobility of third-country nationals (1 000s), 2016-2020

Country	Inflows					Outflows					Net flows				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
<b>EU/EFTA</b>	<b>1 247</b>	<b>1 259</b>	<b>1 426</b>	<b>1 606</b>	<b>1 195</b>	<b>399</b>	<b>429</b>	<b>402</b>	<b>462</b>	<b>467</b>	<b>683</b>	<b>661</b>	<b>838</b>	<b>933</b>	<b>553</b>
<b>EU</b>	<b>1 196</b>	<b>1 213</b>	<b>1 381</b>	<b>1 560</b>	<b>1 156</b>	<b>371</b>	<b>403</b>	<b>376</b>	<b>436</b>	<b>441</b>	<b>660</b>	<b>641</b>	<b>819</b>	<b>913</b>	<b>540</b>
<b>AT</b>	34	25	22	23	22	14	15	16	15	13	20	10	6	8	9
<b>BE</b>	33	34	40	44	33	19	15	15	26	15	13	19	25	18	18
<b>BG</b>	8	8	9	10	9	3	3	1	1	2	5	5	8	8	7
<b>CY</b>	6	7	10	12	11										
<b>CZ</b>	21	25	37	59	34	21	15	16	32	20	0	10	22	26	14
<b>DE</b>	325	273	270	283	208	109	121	106	104	98	216	152	164	179	111
<b>DK</b>	20	18	16	15	13	15	16	19	21	17	5	1	-3	-6	-4
<b>EE</b>	4	4	5	5	6	2	2	1	2	2	2	2	3	4	4
<b>EL</b>	41	38	43	50	35										
<b>ES</b>	169	232	310	385	249	98	112	96	99	88	72	120	214	286	160
<b>FI</b>	14	12	11	13	13	2	2	2	2	3	11	10	9	11	10
<b>FR</b>	113	117	122	124	103										
<b>HR</b>	3	5	14	24	20	1	1	2	6	12	3	4	12	18	8
<b>HU</b>	10	21	33	39	22	3	6	7	10	34	7	15	26	28	-12
<b>IE</b>	21	17	25	24	20	10	9	7	11	15	11	8	18	13	4

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Country	Inflows					Outflows					Net flows				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
IT	148	175	166	148	110	16	15	14	24	16	132	160	152	124	94
LT	4	9	11	18	21	4	2	3	4	7	1	7	8	14	13
LU	4	5	5	6	5	2	2	2	2	2	2	3	4	4	3
LV	2	4	5	5	3	3	2	3	4	3	-1	1	2	1	0
MT	5	7	12	15	7	3	3	4	4	4	2	5	9	11	3
NL	55	48	50	58	46	16	16	17	17	23	39	31	33	41	23
PL	68	47	65	77	67	18	20	21	21	28	49	27	44	56	39
PT	5	6	11	26	26										
RO	8	13	17	26	21	0	12	11	14	20	8	1	6	12	1
SE	65	53	53	50	33	9	9	9	9	10	56	45	44	42	24
SI	8	10	17	21	17	4	4	4	5	8	4	5	13	15	9
SK	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
<b>EFTA</b>	<b>51</b>	<b>46</b>	<b>45</b>	<b>46</b>	<b>39</b>	<b>28</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>23</b>	<b>20</b>	<b>19</b>	<b>20</b>	<b>13</b>
CH	29	28	29	29	27	21	21	23	22	21	7	7	6	7	6
IS	1	1	1	1	1	0	0	0	0	0	1	1	1	1	1
NO	21	17	14	15	10	6	5	3	4	4	15	12	11	11	6

Note: Outflow data not available for Cyprus, France, Greece, and Portugal. For 2016-2019, 'EU movers' and 'Third-country nationals (TCN)' refer to citizens from (non-)EU-28 countries. From 2020 onwards, the reference group is (non-)EU-27 countries. Estimated values for outflows in Estonia and Malta in 2020.

Source: Eurostat international migration statistics (Migr\_imm1ctz, Migr\_emi1ctz), Milieu calculations.

Table 56: Cross-border workers by country of residence and country of work, 2021

		Country of work																					
		EU-27	AT	BE	CZ	DE	DK	ES	FI	FR	HU	IE	IT	LU	NL	PT	SE	SI	SK	EFTA	CH	NO	
Country of residence	EU-27	1 289	143	101	26	378	30	28		53			45	212	122		(17)			424	369	(39)	
	AT	37				27														9	9		
	BE	121				12				13				48	43								
	BG	27				14																	
	CZ	64	12			45				(1)					(1)				(3)				
	DE	159	(20)											51	43					53	52		
	DK	4															(3)						
	EE	15							9								(2)			(1)		(1)	
	EL	(2)																					
	ES	31		6		7				(5)		(2)			(2)	(4)				(4)	(3)		
	FI	(3)																					
	FR	242		57		54								111						210	210		
	HR	28	(4)			12							(3)						(5)	(2)	(1)		
	HU	69	46			18														(4)			

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		Country of work																					
		EU-27	AT	BE	CZ	DE	DK	ES	FI	FR	HU	IE	IT	LU	NL	PT	SE	SI	SK	EFTA	CH	NO	
	IT	30		(2)		5		4		6					(2)	(2)				77	76		
	LT	5				(2)														(2)		(2)	
	LU	8		(1)		3				1													
	LV	11				(3)										(3)				4		4	
	NL	29		13		14																	
	PL	176	14		(11)	111									(18)					(16)		(15)	
	PT	17						(6)		(7)													
	RO	113	(8)	(9)		45		(7)					31										
	SE	20					14														12		12
	SI	22	15			(2)							(2)										
	SK	41	20		13							(8)											
	CH	10				7																	

Note: Cross-border workers are defined as those workers who live in one EU or EFTA country but are employed in another. Differentiation is not made in this table of workers citizenship. Numbers in brackets indicate low reliability. To conserve space, only country-combinations with available data are displayed. As individual countries' values may be below publication thresholds, they do not necessarily add up to displayed EU aggregates. As the only EFTA country with available data for country of residence is Switzerland, no EFTA aggregate is provided for this indicator.

Source: EU-LFS 2021, custom extraction by Milieu.

**Table 57: Returning nationals per country (1 000s), 2016-2021**

Country	2016	2017	2018	2019	2020	2020/2019 change (%)
<b>EU-27</b>	<b>605</b>	<b>655</b>	<b>678</b>	<b>721</b>	<b>589</b>	<b>-18</b>
AT	7	7	7	7	7	2
BE	12	12	12	12	12	-1
BG	6	9	11	16	18	12
CY	3	4	4	4	2	-42
CZ	4	4	4	4	3	-19
DE	75	88	108	115	108	-6
DK	14	14	13	13	13	2
EE	6	7	7	6	5	-20
EL	22	23	23	24	15	-40
ES	38	48	52	53	34	-36
FI	5	5	6	6	7	15
FR	95	87	89	89	56	-37
HR	6	6	6	7	6	-15
HU	26	29	30	30	29	-4
IE	21	19	23	16	24	49
IT	25	28	31	46	37	-19
LT	12	9	14	18	18	3
LU	1	1	1	1	1	-3
LV	3	4	3	3	3	-8
MT	1	1	1	1	1	-24
NL	27	28	29	30	29	-4
PL	69	70	54	50	34	-31
PT	11	16	16	20	18	-8
RO	100	124	118	136	92	-32
SE	13	12	11	10	10	-3
SI	2	2	3	2	6	149
SK	1	1	1	1	1	-17
<b>EFTA</b>	<b>21</b>	<b>21</b>	<b>21</b>	<b>21</b>	<b>22</b>	<b>5</b>
CH	16	16	16	16	17	6

Country	2016	2017	2018	2019	2020	2020/2019 change (%)
IS	1	2	1	1	1	8
NO	3	3	4	3	4	3

Source: Eurostat international migration statistics [migr\_imm1ctz], Milieu calculations. Returnees are identified as nationals among inflows to each country in the reference year.

## C.2: The labour market performance of mobile workers

Table 58: Activity rate by nationality group and country of residence (%), 2016-2020

Country	2016			2017			2018			2019			2020			2021		
	Nat.	EU	TCN															
<b>EU-27</b>	77	81	68	78	81	68	78	81	70	79	82	70	78	80	69	79	81	70
<b>AT</b>	80	83	65	81	83	67	81	82	70	81	82	70	81	83	68	81	83	72
<b>BE</b>	74	76	58	74	77	57	75	77	57	75	77	55	75	78	50	76	80	55
<b>BG</b>	73			76			76			78			77			77		
<b>CY</b>	79	87	(71)	80	(85)	(71)	82	(84)	(69)	82	(86)	(72)	81	86	74	82	(85)	79
<b>CZ</b>	80	(89)	(81)	81	(89)	(82)	82	(88)	(84)	82	(88)	(86)	82	(87)	(85)	82	(87)	(84)
<b>DE</b>	84	82	60	84	82	61	84	83	63	85	84	65	84	82	65	84	83	64
<b>DK</b>	81	(88)	67	82	(86)	66	82	85	67	83	(86)	(65)	83	(87)	69	83	(90)	(72)
<b>EE</b>	83		78	84		(77)	84		79	84		(79)	84		(80)	85		(78)
<b>EL</b>	73	77	80	73	77	78	73	73	78	74	68	78	73	74	76	73	73	74
<b>ES</b>	79	84	80	79	84	80	79	83	78	79	85	77	78	81	75	79	81	78
<b>FI</b>	80	(91)	61	81	(92)	(64)	82	(88)	(66)	83		(63)	83	(94)	(68)	83	(95)	70

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Country	2016			2017			2018			2019			2020			2021		
	Nat.	EU	TCN															
FR	78	78	62	79	77	63	79	80	64	79	79	63	78	79	64	80	81	66
HR	70			71		(32)	71			71			72			74		
HU	75			76		(70)	77	(83)	(55)	78		(82)	78		(84)	82		(76)
IE	78	83	69	78	85	71	78	86	73	78	86	73	77	82	(72)	79	(85)	75
IT	69	77	73	70	77	73	70	77	74	70	77	74	69	72	69	69	74	71
LT	82			82			83			84			84			84		89
LU	72	80	(70)	72	81	72	72	82	68	73	82	(72)	74	82	75	75	(84)	(81)
LV	83		68	83		69	84		73	84		(73)	85		76	82		(70)
MT	73		(75)	74	(91)	(80)	77	(93)	(82)	78	(90)	(82)	79	(96)	83	79	(93)	83
NL	82	82	60	82	82	58	83	80	62	83	82	65	84	82	62	85	84	64
PL	74		(77)	75		(77)	75		(81)	75		(88)	76		(85)	78		
PT	80		85	80		86	81		84	81		85	80		84	81		(84)
RO	70			72			73			74			74			71		
SE	87	84	74	88	88	75	88	(87)	73	88	(85)	74	88	89	75	88	(92)	77
SI	76	(86)	(81)	79	(87)	(81)	80		(79)	80		(78)	79	(92)	(81)	80		(79)

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Country	2016			2017			2018			2019			2020			2021		
	Nat.	EU	TCN	Nat.	EU	TCN	Nat.	EU	TCN	Nat.	EU	TCN	Nat.	EU	TCN	Nat.	EU	TCN
SK	77			77			77			78			78			80		
EFTA	85	89	74	85	89	73	85	89	74	85	90	75	85	89	74	85	88	75
CH	87	89	75	87	89	74	87	90	76	87	90	76	87	90	76	87	89	74
IS	91			89			89			88			87			86	96	
NO	82	91	72	82	90	(73)	82	91	70	82		(69)	82	(88)	(72)	83	(89)	(79)

Note: 'Nat.' denotes nationals; 'EU' denotes EU movers; 'TCN' denotes third-country nationals. Unreliable estimates are highlighted in brackets.

Source: EU-LFS 2021, custom extraction by Milieu.

**Table 59: Employment rate by nationality group and country of residence (%), 2016-2020**

Country	2016			2017			2018			2019			2020			2021		
	Nat.	EU	TCN															
EU-27	71	72	55	72	73	56	73	74	58	74	75	60	73	72	57	74	74	59
AT	77	76	55	77	77	57	78	77	61	78	77	61	77	76	57	77	75	61
BE	69	69	43	70	69	44	71	71	45	72	72	45	71	72	40	72	74	44
BG	68			71			72			75			73			73		
CY	69	75	(64)	71	(76)	(64)	75	(77)	(66)	76	(81)	(70)	75	78	68	76	(78)	71
CZ	77	(86)	(80)	78	(88)	(79)	80	(87)	(83)	80	(86)	(84)	80	(86)	(83)	80	(86)	(82)

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Country	2016			2017			2018			2019			2020			2021		
	Nat.	EU	TCN															
DE	81	78	53	82	78	54	82	79	56	83	80	59	82	78	57	82	78	57
DK	77	(80)	58	78	(80)	58	79	76	59	80	(81)	(61)	79	(84)	62	80	(87)	(66)
EE	78		69	79		(74)	80		71	81		(75)	79		(74)	81		(71)
EL	56	58	57	58	59	57	60	55	57	62	52	58	62	56	54	63	56	57
ES	64	65	57	66	67	60	68	69	60	69	72	60	67	65	55	69	66	59
FI	74	(91)	50	75	(92)	(55)	77	(88)	(57)	78		(55)	77	(94)	(58)	78	(87)	60
FR	71	70	47	72	71	48	73	73	51	73	73	52	73	73	52	74	74	55
HR	62			64		(32)	65			67			67			68		
HU	72			73		(70)	75	(83)	(55)	75		(82)	75		(84)	79		(76)
IE	72	77	62	73	79	65	74	81	68	75	86	73	74	82	(70)	75	(81)	75
IT	61	67	62	62	67	63	63	67	64	63	66	64	63	62	60	63	64	61
LT	75			76			78			78			77			78		89
LU	69	75	(61)	69	77	62	69	78	59	71	78	(66)	71	76	65	72	(81)	(76)
LV	75		60	76		62	79		70	79		(73)	78		(69)	77		(70)
MT	70		(75)	72	(91)	(76)	75	(93)	(79)	76	(90)	(77)	76	(94)	78	77	(92)	78

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Country	2016			2017			2018			2019			2020			2021		
	Nat.	EU	TCN															
NL	78	76	51	79	78	51	80	78	56	81	80	59	81	80	55	83	80	56
PL	69		(77)	71		(77)	72		(81)	73		(88)	74		(85)	75		
PT	71		75	73		81	76		79	76		78	75		75	76		(76)
RO	66			69			70			71			71			67		
SE	83	79	53	84	81	54	85	(84)	53	85	(83)	56	83	83	52	83	(89)	54
SI	70	(86)	(70)	73	(87)	(74)	76		(74)	77		(74)	76	(92)	(77)	76		(74)
SK	70			71			72			73			73			75		
EFTA	82	84	64	82	83	63	83	84	64	83	86	66	82	84	65	82	83	65
CH	84	83	65	84	84	64	84	85	65	84	86	66	84	85	67	84	83	64
IS	88			87			87			86			83			82	90	
NO	79	85	61	79	(90)	(64)	80	89	62	80		(69)	80	(83)	(65)	81	(89)	(70)

Note: 'Nat.' denotes nationals; 'EU' denotes EU movers; 'TCN' denotes third-country nationals. Unreliable estimates are highlighted in brackets.

Source: EU-LFS 2021, custom extraction by Milieu.

Table 60: Unemployment rate by nationality group and country of residence (%), 2016-2020

Country	2016			2017			2018			2019			2020			2021		
	Nat.	EU	TCN	Nat.	EU	TCN	Nat.	EU	TCN	Nat.	EU	TCN	Nat.	EU	TCN	Nat.	EU	TCN
<b>EU-27</b>	8	11	19	8	9	18	7	9	16	6	8	15	6	9	17	6	9	16
<b>AT</b>	5	8	15	4	7	15	4	6	13	3	6	12	4	8	15	5	9	15
<b>BE</b>	7	9	26	6	10	23	5	8	21	5	7	18	5	7	19	5	7	21
<b>BG</b>	8			6			5			4			5			5		
<b>CY</b>	13	14	(10)	11	(10)	(10)	8	(9)	(5)	7	(6)	(4)	7	9	8	7	(8)	10
<b>CZ</b>	4	(3)	(2)	3	(1)	(3)	2	(1)	(1)	2	(2)	(2)	3	(1)	(2)	3	(1)	(3)
<b>DE</b>	4	5	12	3	5	11	3	5	10	3	4	10	3	5	13	3	5	10
<b>DK</b>	5	(9)	14	5	(8)	13	4	10	11	4	(6)	(6)	5	(4)	11	4	(3)	(8)
<b>EE</b>	6		11	5		(4)	4		9	4		(6)	6		(8)	5		(9)
<b>EL</b>	23	25	29	21	23	28	19	24	26	17	24	27	16	24	29	14	23	23
<b>ES</b>	18	23	28	16	20	25	14	17	23	13	15	22	14	20	27	13	18	24
<b>FI</b>	8		18	8		13	6		14	6		(13)	7		(14)	7	(8)	15
<b>FR</b>	9	11	24	8	9	23	8	8	21	8	8	18	7	7	18	7	8	16
<b>HR</b>	12			11			8			6			7			7		

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Country	2016			2017			2018			2019			2020			2021		
	Nat.	EU	TCN	Nat.	EU	TCN	Nat.	EU	TCN	Nat.	EU	TCN	Nat.	EU	TCN	Nat.	EU	TCN
HU	5			4			4			3			4			4		
IE	8	8	10	6	6	8	5	6	7	4			5		(3)	5	(5)	
IT	11	14	16	11	13	15	10	13	14	9	14	13	9	13	13	9	13	14
LT	8			7			6			6			9			7		
LU	4	7	(14)	3	5	13	3	5	13	3	6	(8)	4	7	13	3	(3)	(6)
LV	9		12	8		11	7		5	6			8		(10)	7		
MT	4			3		(5)	3		(3)	3		(6)	3	(3)	6	3	(1)	5
NL	5	7	14	4	4	12	3	3	10	3	3	9	3	3	10	3	5	11
PL	6			5			4			3			3			3		
PT	11		12	9		6	7		6	6		7	7		11	6		(10)
RO	6			5			4			4			5			5		
SE	5	6	29	5	8	28	4	(3)	28	4	(3)	25	6	7	31	6	(3)	30
SI	8		(13)	6		(9)	5		7	4		(5)	5		(6)	4		(6)
SK	9			8			6			6			7			6		
EFTA	4	6	14	3	6	14	3	6	14	3	5	12	3	6	12	3	6	13

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Country	2016			2017			2018			2019			2020			2021		
	Nat.	EU	TCN	Nat.	EU	TCN	Nat.	EU	TCN	Nat.	EU	TCN	Nat.	EU	TCN	Nat.	EU	TCN
<b>CH</b>	3	6	14	3	6	13	3	6	14	3	5	12	4	6	12	4	6	14
<b>IS</b>	2			2			2			3			4			5	6	
<b>NO</b>	4	6	16	3		(12)	2	3	11	2			3	(6)	(11)	3		(11)

Note: 'Nat.' denotes nationals; 'EU' denotes EU movers; 'TCN' denotes third-country nationals. Unreliable estimates are highlighted in brackets.

Source: EU-LFS 2021, custom extraction by Milieu.

**Table 61: Employment rate of male and female EU movers, 2016-2021**

Country	Male			Female		
	2016	2021	Diff (pps)	2016	2021	Diff (pps)
<b>EU-27</b>	80	82	2	65	67	1
<b>AT</b>	81	81	0	72	70	-2
<b>BE</b>	74	81	7	64	67	3
<b>CY</b>	(81)	86	5	68	70	2
<b>CZ</b>	(96)	(95)	-1	(74)	74	0
<b>DE</b>	86	85	-1	68	71	3
<b>DK</b>	(86)	(90)	5	(74)	83	9
<b>EL</b>	(77)	(74)	-3	47	47	-1
<b>ES</b>	72	74	2	59	58	-1
<b>FI</b>				(82)	(73)	-9
<b>FR</b>	73	79	6	68	70	2
<b>IE</b>	(85)	(89)	4	69	(74)	5
<b>IT</b>	76	79	3	60	55	-5
<b>LU</b>	80	83	3	69	(79)	10
<b>MT</b>		(97)			(85)	
<b>NL</b>	83	87	4	72	74	3
<b>SE</b>	(83)			(75)	(79)	4
<b>SI</b>				(76)		
<b>EFTA</b>	87	86	-1	79	78	-1
<b>CH</b>	87	87	0	78	78	0
<b>IS</b>					80	
<b>NO</b>	(88)	(93)	5	(81)	83	2

Note: Unreliable estimates are highlighted in brackets. Countries without values for either year are omitted.

Source: EU-LFS 2021, custom extraction by Milieu.

**Table 62: Share of EU movers by educational attainment, 2021**

Country	Low (ISCED 0-2)			Medium (ISCED 3-4)			High (ISCED 5-8)		
	2016	2021	Diff (pps)	2016	2021	Diff (pps)	2016	2021	Diff (pps)
<b>EU-27</b>	29	28	-1	43	40	-3	28	32	+4
<b>AT</b>	10	13	+3	52	46	-6	38	41	+2
<b>BE</b>	28	20	-8	34	31	-3	38	50	+11
<b>CY</b>	18	15	-3	55	49	-7	26	36	+10
<b>CZ</b>	6	8	+2	57	51	-6	37	41	+4
<b>DE</b>	31	34	+2	45	40	-5	24	27	+3
<b>DK</b>		11	+11	32	34	+1	68	55	-12
<b>EL</b>	30	26	-4	52	48	-4	18	26	+8
<b>ES</b>	30	26	-3	39	38	-1	31	35	+4
<b>FI</b>	28	25	-3	52	46	-6	20	29	+9
<b>FR</b>	41	36	-5	27	33	+5	32	31	-1
<b>HU</b>				73	45	-28	(27)	55	+28
<b>IE</b>	5	0	-5	46	46	0	49	54	+5
<b>IT</b>	33	34	+1	56	54	-2	11	12	+1
<b>LU</b>	24	23	-1	26	18	-8	51	59	+8
<b>MT</b>	32	13	-19	29	34	+5	39	53	+14
<b>NL</b>	19	27	+8	48	26	-22	33	48	+14
<b>PT</b>				43	34	-9	57	66	+9
<b>SE</b>	20	11	-9	25	21	-4	55	68	+13
<b>SI</b>				(73)	(56)	-17	(27)	(44)	+17
<b>EFTA</b>	21	19	-2	34	32	-2	45	48	+4
<b>CH</b>	22	21	-2	33	31	-2	45	48	+4
<b>NO</b>	14	11	-4	40	38	-2	45	51	+6

Note: 'Low' educational attainment refers to ISCED levels 0-2 (early childhood, primary and lower secondary education); 'medium' refers to ISCED levels 3-4 (upper secondary and post-secondary non-tertiary education); and 'high' refers to ISCED levels 5-8 (short-cycle tertiary education and tertiary education at Bachelor, Master's or Doctoral level). Only countries where comparison was possible between at least two categories are included in the table. Unreliable estimates are highlighted in brackets.

Source: EU-LFS 2021, custom extraction by Milieu.

## C.3: Cross-border workers in the EU and EFTA

Table 63: Cross-border workers by EU and EFTA countries of origin, 2016-2021

Main countries of origin	1 000s						% of total workforce					
	2016	2017	2018	2019	2020	2021	2016	2017	2018	2019	2020	2021
<b>AT</b>	43	43	38	41	45	46	1.1	1.1	1.0	1.0	1.1	1.2
<b>BE</b>	100	113	108	107	106	119	2.3	2.5	2.4	2.3	2.3	2.6
<b>BG</b>	26	31	40	44	33	27	0.9	1.0	1.3	1.4	1.1	0.9
<b>CH</b>	10	8	9	10	9	10	0.2	0.2	0.2	0.2	0.2	0.2
<b>CZ</b>	48	57	59	62	65	64	1.0	1.1	1.2	1.2	1.3	1.3
<b>DE</b>	228	233	229	223	160	213	0.6	0.6	0.6	0.6	0.4	0.6
<b>DK</b>	4	7	6	10	6	3	0.2	0.3	0.3	0.4	0.2	0.1
<b>EE</b>	17	14	14	12	15	14	3.3	2.6	2.5	2.3	2.8	2.6
<b>ES</b>	25	29	27	31	32	33	0.1	0.2	0.2	0.2	0.2	0.2
<b>FR</b>	391	396	371	386	401	424	1.6	1.6	1.5	1.5	1.6	1.7
<b>HR</b>	29	32	35	34	35	30	1.9	2.0	2.2	2.1	2.2	1.8
<b>HU</b>	99	91	92	99	87	72	2.3	2.1	2.1	2.3	2.0	1.6
<b>IT</b>	94	87	85	92	94	104	0.5	0.4	0.4	0.4	0.5	0.5
<b>LT</b>	4	6	6	4	4	6	0.3	0.5	0.5	0.3	0.3	0.5
<b>LU</b>	4	4	5	6	7	8	0.9	0.9	1.2	1.2	1.6	1.6

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Main countries of origin	1 000s						% of total workforce					
	2016	2017	2018	2019	2020	2021	2016	2017	2018	2019	2020	2021
LV	6	9	7	11	10	13	0.8	1.2	0.9	1.5	1.4	1.8
NL	34	36	38	35	31	29	0.4	0.5	0.5	0.4	0.4	0.4
PL	165	191	196	208	206	190	1.0	1.2	1.2	1.3	1.3	1,2
PT	14	17	18	18	14	14	0.3	0.4	0.4	0.4	0.3	0.3
RO	111	112	113	128	113	113	1.4	1.4	1.4	1.5	1.4	1.5
SE	33	32	30	28	27	29	0.7	0.7	0.6	0.6	0.6	0.7
SI	14	15	20	21	23	20	1.6	1.7	2.2	2.3	2.5	2.3
SK	148	140	130	121	113	41	6.0	5.6	5.2	4.8	4.6	1.7

Note: EU and EFTA citizenship included. No data for Finland and Norway. Low reliability data for Denmark in 2021.

Source: EU-LFS 2021, custom extraction by Milieu.

**Table 64: Cross-border workers by EU and EFTA countries of destination, 2016-2021**

Main countries of destination	1 000s						% of total workforce					
	2016	2017	2018	2019	2020	2021	2016	2017	2018	2019	2020	2021
AT	160	167	166	173	163	143	4.1	4.2	4.2	4.3	4.1	3.6
BE	69	66	82	86	49	85	1.6	1.5	1.8	1.9	1.1	1.8
CH	371	369	335	366	321	345	8.7	8.6	7.8	8.4	7.5	8.0
CZ	52	51	46	49	30	19	1.0	1.0	0.9	1.0	0.6	0.4
DE	362	382	407	403	374	378	1.0	1.0	1.1	1.1	1.0	1.0

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Main countries of destination	1 000s						% of total workforce					
	2016	2017	2018	2019	2020	2021	2016	2017	2018	2019	2020	2021
<b>DK</b>	18	20	21	30		24	0.7	0.8	0.9	1.2		1.0
<b>ES</b>	29	29	31	34		20	0.2	0.2	0.2	0.2		0.1
<b>FI</b>	15	14	11	11			0.7	0.6	0.5	0.5		
<b>FR</b>	55	61	60	61	34	27	0.2	0.2	0.2	0.2	0.1	0.1
<b>IT</b>	74	69	64	66	38	45	0.4	0.3	0.3	0.3	0.2	0.2
<b>LU</b>	176	185	181	190	174	212	42.5	42.9	41.5	42.1	39.8	43.6
<b>NL</b>	110	117	109	114	53	122	1.5	1.5	1.4	1.5	0.7	1.5
<b>NO</b>	35	45	38	40	43	34	1.4	1.9	1.6	1.6	1.8	1.4
<b>SE</b>	14	16	13	13		13	0.3	0.3	0.3	0.3		0.3

Note: EU and EFTA citizenship included. No data for Bulgaria, Estonia, Croatia, Hungary, Lithuania, Latvia, Poland, Portugal, Romania, Slovenia, and Slovakia. Empty cells mean missing data.

Source: EU-LFS 2021, custom extraction by Milieu.

**Table 65: Cross-border workers by occupation in employment in the EU and EFTA, 2016-2021**

	2016	2017	2018	2019	2020	2021	Trend
<b>1 000s</b>							
Clerical support	84	98	93	102	76	81	
Craft and related trades	419	418	406	431	358	381	
Elementary occupations	148	157	165	180	162	148	
Managers	89	84	75	71	70	80	
Plant and machine operators and assemblers	185	197	202	207	189	174	
Professionals	237	261	260	268	239	288	
Service and sales	214	198	192	188	148	133	
Skilled agricultural, forestry and fishery	26	39	43	42	0	27	
Technicians and associate professionals	251	263	262	263	232	257	
<b>%</b>							
Clerical support	5	6	5	6	5	5	
Craft and related trades	25	24	24	25	24	24	
Elementary occupations	9	9	10	10	11	9	
Managers	5	5	4	4	5	5	
Plant and machine operators and assemblers	11	11	12	12	13	11	
Professionals	14	15	15	15	16	18	
Service and sales	13	12	11	11	10	8	
Skilled agricultural, forestry and fishery	2	2	3	2	0	2	
Technicians and associate professionals	15	15	15	15	16	16	

Note. EU and EFTA citizenship included. Armed forces occupations omitted as numbers are very low.

Source: EU-LFS 2021, custom extraction by Milieu

**Table 66: Workers by economic sector of employment in the EU and EFTA, 2016-2021**

	2016	2017	2018	2019	2020	2021	Trend
<b>Cross-border workers (%)</b>							
Agriculture	3	4	4	4	4	4	
Manufacturing	24	24	24	24	30	26	
Construction	21	20	21	20	26	20	
Wholesale and retail trade	10	9	9	9	10	9	
Transportation and storage	8	8	9	9	10	9	
Accommodation and food service	5	5	5	5	6	5	
Information and communication	2	3	3	3	3	3	
Financial and insurance	2	2	2	2	2	3	
Professional, scientific and technical	4	4	4	4	3	4	
Administrative and support service	3	3	3	3	3	3	
Human health and social work	9	9	8	8	8	10	
<b>EU movers (%)</b>							
Agriculture	4	3	3	3	3	3	
Manufacturing	15	15	16	16	17	17	
Construction	12	12	12	12	11	10	
Wholesale and retail trade	11	11	11	11	11	12	
Transportation and storage	6	6	6	7	6	7	
Accommodation and food service	11	10	10	10	9	8	
Information and communication	3	3	3	3	4	4	
Financial and insurance	1	1	2	2	2	2	
Professional, scientific and technical	4	5	4	5	5	5	
Administrative and support service	7	7	7	7	7	7	
Human health and social work	8	8	8	9	9	9	
<b>Nationals (%)</b>							
Agriculture	5	4	4	4	4	4	
Manufacturing	17	17	17	17	17	17	
Construction	7	7	7	7	6	7	
Wholesale and retail trade	14	14	14	14	14	14	
Transportation and storage	5	5	5	5	5	5	
Accommodation and food service	4	4	4	4	4	3	
Information and communication	3	3	3	3	4	4	
Financial and insurance	3	3	3	3	3	3	
Professional, scientific and technical	6	6	6	6	6	6	
Administrative and support service	4	4	4	4	4	4	
Human health and social work	11	11	11	11	11	12	

Note. EU and EFTA citizenship included. Percentages indicate the share of workers in that occupation and year. Empty cells mean missing data. The population of nationals and EU movers refers to employed individuals.

Source: EU-LFS 2021, custom extraction by Milieu

**Table 67: Cross-border workers by EU and EFTA countries of origin / destination and gender, 2021**

Country of origin / destination	1 000s				%			
	Outgoing		Incoming		Outgoing		Incoming	
	Female	Male	Female	Male	Female	Male	Female	Male
AT	18	28	41	102	39	61	29	71
BE	44	76	25	61	37	63	29	71
BG	7	20			27	73		
CH	5	5	119	226	49	51	35	65
CZ	11	52			18	82		
DE	74	139	90	289	35	65	24	76
EE	2	12			13	87		
ES	12	21			36	64		
FR	153	271			36	64		
HR	4	25			15	85		
HU	16	56			22	78		
IT	36	68	14	31	35	65	31	69
LT	2	5			25	75		
LU	4	4	80	132	50	50	38	62

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Country of origin / destination	1 000s				%			
	Outgoing		Incoming		Outgoing		Incoming	
	Female	Male	Female	Male	Female	Male	Female	Male
NL	10	19	38	84	33	67	31	69
PL	40	151			21	79		
RO	22	91			20	80		
SE	4	25			14	86		
SI	5	15			24	76		
SK	15	26			36	64		

Note. EU and EFTA citizenship included. No data for: Denmark, Greece, Finland, Latvia, Norway, Portugal. Low reliability for Bulgaria, Switzerland, Estonia, Croatia, Lithuania, Sweden and Slovenia female outgoing. Empty cells mean missing data.

Source: EU-LFS 2021, custom extraction by Milieu

**Table 68: Cross-border workers by EU and EFTA countries of origin / destination and age group, 2021**

Country of origin / destination	1 000s						%			
	Outgoing			Incoming			Outgoing		Incoming	
	20 - 34	35 - 49	50 - 64	20 - 34	35 - 49	50 - 64	20-34	50-64	20-34	50-64
AT	3	12	8	38	61	33	14	34	28	25
BE	36	48	35	15	25	21	30	30	25	34
BG	7	8	5				36	23		
CH		3	2	93	147	92		33	28	28
CZ	17	29	16				27	26		

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Country of origin / destination	1 000s						%			
	Outgoing			Incoming			Outgoing		Incoming	
	20 - 34	35 - 49	50 - 64	20 - 34	35 - 49	50 - 64	20-34	50-64	20-34	50-64
DE	31	74	36	99	143	98	22	25	29	29
EE	3	5	3				31	23		
ES	13	8	9				45	29		
FR	112	179	116				28	28		
HR	8	13	7				28	25		
HU	23	28	17				34	25		
IT	31	45	26	12	13		30	25		
LT	2	1	1				39	33		
LU				58	81	41			32	23
LV	4	4					45			
NL	7	8	11	18	34	15	26	43	27	22
PL	57	81	37				33	21		
PT		5	7					55		
RO	53	43	12				49	11		
SE	5	5					48			
SI	4	10	5				21	25		
SK	9	18	7				26	21		

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Note. EU and EFTA citizenship included. No data for: Greece, Denmark, Finland, Norway. Low reliability for Austria for 20-34 outgoing; Bulgaria, Croatia, Slovenia and Slovakia for 20-34 and 50-64 outgoing; Switzerland, Lithuania, Portugal and Sweden for all outgoing. Empty cells mean missing data.

Source: EU-LFS 2021, custom extraction by Milieu

**Table 69: Cross-border workers by EU and EFTA country of origin / destination and educational attainment, 2021**

Country of origin / destination	1 000s						%					
	Outgoing			Incoming			Outgoing			Incoming		
	High	Medium	Low									
AT	47	43		51	224		52	48		19	81	
BE	150	75	16	66	91	30	62	31	7	35	49	16
BG		29	22					56	44			
CH	15	5		308	307	83	75	25		44	44	12
CZ	12	108	8				9	84	7			
DE	198	198	19	158	508	89	48	48	4	21	67	12
EE	6	16	6				23	56	21			
ES	43	11	14				64	16	20			
FR	403	371	84	36	31	14	47	43	10	44	38	17
HR	6	48	5				10	82	8			
HU	14	114	15				10	80	11			
IT	54	97	60				26	46	28			
LT	2	9					22	78				
LU	12	1		215	163	35	91	9		52	40	8

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Country of origin / destination	1 000s						%					
	Outgoing			Incoming			Outgoing			Incoming		
	High	Medium	Low									
<b>NL</b>	31	14	10	103	110	17	57	25	18	45	48	7
<b>PL</b>	45	305	30				12	80	8			
<b>RO</b>		182	40					82	18			
<b>SE</b>	34	26					56	44				
<b>SI</b>	10	29	4				24	67	9			
<b>SK</b>	14	66					18	82				

Note. EU and EFTA citizenship included. No data for: Denmark, Greece, Finland, Latvia, Norway, Portugal. Low reliability for Switzerland for medium outgoing; Croatia for low and high outgoing; Lithuania for high outgoing; Slovenia low outgoing. Empty cells mean missing data.

Source: EU-LFS 2021, custom extraction by Milieu

## C.4: Occupational mobility among movers

**Table 70: EU movers in EU-27, occupation (ISCO 08, 1D) distribution by share (%), 2016-2021**

ISCO 08, 1D	Occupation Title	2016	2017	2018	2019	2020	2021
1	Managers	4	4	4	5	4	4
2	Professionals	15	15	15	15	18	18
3	Technicians and Associate Professionals	11	11	11	11	12	11
4	Clerical Support Workers	7	7	7	7	7	8
5	Service and Sales Workers	18	17	17	17	16	16
6	Skilled Agricultural, Forestry and Fishery Workers	1	1	2	2	1	1
7	Craft and Related Trades Workers	16	16	16	16	15	15
8	Plant and Machine Operators, and Assemblers	8	9	9	9	9	9
9	Elementary Occupations	21	20	20	19	18	18

Source: EU-LFS 2021, custom extraction by Milieu

**Table 71: Nationals in EU-27, occupation (ISCO 08, 1D) distribution by share (%), 2016-2021**

ISCO 08, 1D	Occupation Title	2016	2017	2018	2019	2020	2021
1	Managers	5	5	5	5	5	5
2	Professionals	19	19	20	20	22	22
3	Technicians and Associate Professionals	18	18	18	18	17	17
4	Clerical Support Workers	10	10	10	10	10	11
5	Service and Sales Workers	16	16	16	16	16	15
6	Skilled Agricultural, Forestry and Fishery Workers	4	4	4	3	4	3
7	Craft and Related Trades Workers	12	12	12	12	12	12
8	Plant and Machine Operators, and Assemblers	8	8	8	8	8	8
9	Elementary Occupations	8	8	8	7	7	7

Source: EU-LFS 2021, custom extraction by Milieu

**Table 72: EU and EFTA movers in EU-27, education distribution by major occupation (ISCO 08, 1D) in absolute terms (1 000s), 2016-2021**

Occupation Title	Education	2016	2017	2018	2019	2020	2021
Managers	Low	29	19	26	31	N/A	17
	Medium	72	76	86	90	37	55
	High	150	158	156	182	169	183
Professionals	Low	N/A	N/A	N/A	N/A	N/A	N/A
	Medium	104	112	117	108	26	137
	High	756	796	858	917	972	101
Technicians and Associate Professionals	Low	57	65	72	80	43	61
	Medium	275	282	300	314	282	297
	High	302	312	338	366	340	354
Clerical Support Workers	Low	41	52	66	66	34	71
	Medium	198	215	213	226	208	220

Occupation Title	Education	2016	2017	2018	2019	2020	2021
	High	138	148	165	155	131	187
<b>Service and Sales Workers</b>	Low	280	290	294	295	255	251
	Medium	574	575	599	602	528	535
	High	174	188	203	231	199	220
<b>Skilled Agricultural, Forestry and Fishery Workers</b>	Low	35	42	44	47	35	36
	Medium	41	37	42	42	37	44
	High	12	11	12	13	N/A	13
<b>Craft and Related Trades Workers</b>	Low	314	327	356	339	272	317
	Medium	536	543	577	586	511	510
	High	91	104	108	116	73	107
<b>Plant and Machine Operators, and Assemblers</b>	Low	158	166	190	196	166	223
	Medium	259	299	301	327	297	282
	High	36	51	64	67	73	61
<b>Elementary Occupations</b>	Low	514	521	539	568	499	511
	Medium	543	557	576	592	464	499
	High	123	122	124	116	95	92

Note: 'Low' educational attainment refers to ISCED levels 0-2 (early childhood, primary and lower secondary education); 'medium' refers to ISCED levels 3-4 (upper secondary and post-secondary non-tertiary education); and 'high' refers to ISCED levels 5-8 (short-cycle tertiary education and tertiary education at Bachelor, Master's or Doctoral level).

Source: EU-LFS 2021, custom extraction by Milieu

**Table 73: Percentage point difference between EU & EFTA movers and nationals, by education share across major occupations, 2016-2021**

Occupation Title	Education	2016	2017	2018	2019	2020	2021
<b>Managers</b>	Low	4	0	3	4	-7	0
	Medium	-5	-3	-1	-2	-13	-11
	High	1	3	-2	-2	19	11
<b>Professionals</b>	Low	-1	-1	-1	-1	-1	-1
	Medium	-2	-1	-2	-3	-11	-1
	High	3	2	3	4	12	2
<b>Technicians and Associate Professionals</b>	Low	3	4	5	5	1	3
	Medium	-11	-11	-11	-11	-9	-9
	High	7	6	6	5	8	6
<b>Clerical Support Workers</b>	Low	1	3	6	6	0	6
	Medium	-11	-11	-15	-12	-6	-15
	High	10	8	9	5	5	9
<b>Service and Sales Workers</b>	Low	7	8	8	8	8	7
	Medium	-10	-11	-11	-13	-13	-13
	High	3	3	3	5	5	6
<b>Skilled Agricultural, Forestry and Fishery Workers</b>	Low	4	11	11	12	15	10
	Medium	-9	-15	-14	-15	-5	-12
	High	5	4	3	3	-10	2
<b>Craft and Related Trades Workers</b>	Low	10	10	11	10	10	12
	Medium	-12	-14	-14	-13	-10	-15
	High	2	3	3	3	0	2
<b>Plant and Machine Operators, and Assemblers</b>	Low	6	4	6	6	4	13
	Medium	-9	-9	-12	-11	-12	-17
	High	3	5	6	6	8	4
<b>Elementary Occupations</b>	Low	-3	-3	-2	-1	3	3
	Medium	-4	-4	-4	-3	-7	-6
	High	6	5	5	4	4	3

Note: 'low' educational attainment refers to ISCED levels 0-2 (early childhood, primary and lower secondary education); 'medium' refers to ISCED levels 3-4 (upper secondary and post-secondary non-tertiary education); and 'high' refers to ISCED levels 5-8 (short-cycle tertiary education and tertiary education at Bachelor, Master's or Doctoral level).

Source: EU-LFS 2021, custom extraction by Milieu

**Table 74: EU and EFTA movers with a high level (ISCED 5-8) of education, by sub-major occupation (Top 10), 2021**

ISCO 08, 2D	Sub-major occupation title	High ISCED movers (%)
21	Science and Engineering Professionals	90
26	Legal, Social and Cultural Professionals	90
23	Teaching Professionals	87
24	Business and Administration Professionals	86
33	Business and Administration Associate Professionals	60
31	Science and Engineering Associate Professionals	43
32	Health Associate Professionals	34
43	Numerical and Material Recording Clerks	28
52	Sales Workers	24
51	Personal Service Workers	21

Note: 'High' educational attainment refers to ISCED levels 5-8 (short-cycle tertiary education and tertiary education at Bachelor, Master's or Doctoral level).

Source: EU-LFS 2021, custom extraction by Milieu

**Table 75: EU and EFTA movers with a low level (ISCED 0-2) of education, by sub-major occupation (Top 10), 2021**

ISCO 08, 2D	Sub-major occupation title	Low ISCED movers (%)
91	Cleaners and Helpers	46
93	Labourers in Mining, Construction, Manufacturing and Transport	42
71	Building and Related Trades Workers (excluding Electricians)	42
81	Stationary Plant and Machine Operators	39
83	Drivers and Mobile Plant Operators	39
72	Metal, Machinery and Related Trades Workers	29
51	Personal Service Workers	27
53	Personal Care Workers	26
52	Sales Workers	24
43	Numerical and Material Recording Clerks	22

Note: 'Low' educational attainment refers to ISCED levels 0-2 (early childhood, primary and lower secondary education).

Source: EU-LFS 2021, custom extraction by Milieu

## Annex D: Profiles of macro-regions

### Upper-Rhine and Alpine regions

Macro-regions profiles, 2021

The **Upper-Rhine region** includes bordering regions between Switzerland (Northwestern), France (Alsace) and Germany (Baden-Wuerttemberg).

The **Alpine region** includes bordering regions of Italy (Piedmont, Lombardy, Valle d'Aosta and Liguria), France (Franche-Comté, Rhône-Alpes, and Provence-Alpes-Côte d'Azur) and Switzerland (Lemanic region, Espace Mittelland and Ticino).



#### Upper-Rhine region

**8 million people** live within the region; 60 % in German regions. Population density is higher than national averages in all regions.

**20 % of people is above 65 years**, while 15 % is below 15. Alsace has the highest share of young (17 %) while German regions of older people (21 %).

**39 000 € is the average GDP per capita**; highest in Northwestern Switzerland (52 000 €) and lowest in Alsace (28 500 €).

**Services make up 67 % of the economy**; industries 29 %. Share of industries highest in German regions (34 %) and lowest in Northwestern Switzerland (19 %).

**Unemployment is highest in Alsace (6 %)**, relative to German regions (3 %) and Northwestern Switzerland (4 %).

**Around 52 400 people commute for work** to another border region.

The main flows are between Freiburg and Alsace to Northwestern Switzerland.

#### Alpine region

**32 million people** live within the region; Lombardy accounts for 30 %. All regions have medium to high population density.

**23 % of people is above 65 years**, while 14 % is below 15. French regions have the highest share of young (17 %) while Italian regions of older people (23-29 %).

**35 000 € is the average GDP per capita**; highest in Swiss regions (47 000 €) relative to French (28 000 €) and Italian (33 000 €) regions.

**Services make up 71 % of the economy**; industries 22 %. Share of industries highest in Italian regions (27 %). In Ticino, tourism weights more relative to the other Swiss regions (19 % vs. 17.5 %).

**6 % of people are unemployed**; Espace Mittelland has the lowest rate (3 %), the rest of the regions are above 5 %.

**Around 199 000 people commute for work** to another border region.

The main flow is between Rhône-Alpes and Lemanic region (102 000 of workers)

**Switzerland enjoys high levels of wages and economic development.** The economic disparities within the macro-region increase the relative attractiveness of regions with stronger economies and act as pull factors for cross-border commuters, resulting mainly in one-way flows.

Note. Figures may slightly differ from the ones published by Conférence Franco-Germano-Suisse du Rhin Supérieur or similar institutions on the number of cross-border workers in the Upper-Rhine, due to the use of different datasets. As discussed elsewhere in this report, EU-LFS data presents certain limitations when analysing very specific populations. GDP data from 2020 (2018 for Swiss regions). GDP in euros PPS per capita. Classification of population density according to Eurostat: low (predominantly rural) if the share of the population living in rural areas is higher than 50%; medium (intermediate) if the share is between 20 and 50%; high (predominantly urban) if the share is below 20%.

Source: Data on population and economy: Eurostat regional statistics in 2021. Data on cross-border workers: EU-LFS 2021, custom extraction by Milieu. Qualitative inputs from Conférence Franco-Germano-Suisse du Rhin Supérieur (2022a).

## Greater Region

### Macro-region profile, 2021

The **Greater Region** is a macro-area comprising border regions between Belgium (provinces of Liège and Luxembourg), Grand Duchy of Luxembourg, France (Lorraine) and Germany (Saarland and Trier).



The region is characterised by high levels of **institutional cooperation** across stakeholders of bordering regions. This facilitates cross-border movements of workers and supports them when needed (e.g. during COVID-19 pandemic).



#### Population

**6 million people live within the region**; Lorraine accounts for the largest share (39 %). The most densely populated is Saarland, the rest has low to medium population density.

**20 % of people is above 65 years**, while 15 % is below 15. German regions have the highest share of older people (24 % and 22 % for Saarland and Trier), while Belgian regions of younger people (18 %). Saarland is expected to shrink 21 % by 2050 and Rhineland-Pfalz 6 %. Luxembourg is expected to grow 23 % by 2050.

#### Economy

**34 000 € is the average GDP per capita**; highest in Luxembourg (79 000 €), followed by German regions (29 000 €). French and Belgian regions are below 25 000 €.

**Services make up 74 % of the economy**; industries 21 %. Industries play an especially important role in German regions (27-28 % of the economies).

**5 % of people are unemployed**; Liège province and Lorraine have the highest rates (8 %) and German regions the lowest (below 3 %\*).

#### Commuters

**Around 249 000 people commute** for work to another border region.

Lorraine is the main region of origin; almost 50 % of all frontier workers within the region come from there. Luxembourg is the main destination; around 50 % of all flows are towards this region.

**The labour market in Luxembourg** is relatively more dynamic compared to the rest of the regions as it is composed mainly by service-related activities, including those requiring high skills (e.g. professional, scientific, technical and financial activities). The growth of the economy in Luxembourg has been strong; the number of workers in the country grew a staggering 78 % between 2000 and 2019. The high levels of economic development often entail high salaries, thus attracting a significant number of frontier workers from neighbouring regions.

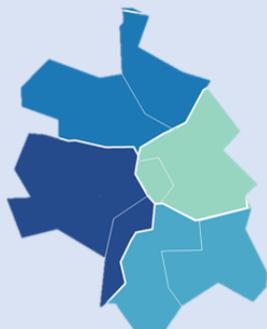
Note: Figures may slightly differ from the ones published by IBA-OIE or similar institutions on the Greater Region socio-economic indicators, due to disparities in geographical scope and the use of different datasets. As discussed elsewhere in this report, EU-LFS data presents certain limitations when analysing very specific populations. GDP data from 2020. GDP in euros PPS per capita. Classification of population density according to Eurostat: low (predominantly rural) if the share of the population living in rural areas is higher than 50%; medium (intermediate) if the share is between 20 and 50%; high (predominantly urban) if the share is below 20%. Unemployment data for German regions from 2018/2019.

Source: Data on population and economy: Eurostat regional statistics in 2021. Data on cross-border workers: EU-LFS 2021, custom extraction by Milieu. Further inputs from IBA-OIE (2020); IBA-OIE (2022).

## Centrope region

### Macro-region profile, 2021

The **Centrope macro-region** includes border regions of Austria (Vienna, Lower Austria, Burgenland), Slovakia (Bratislava and Western Slovakia), Hungary (Central and Western Transdanubia) and Czechia (Southeast and Central Moravia).



Despite initial efforts to engage in cross-border partnerships and common projects, **cross-border cooperation remains limited** and is fading over the years.



#### Population

**11 million people live within the region**; Austrian regions account for the largest share (34 %). Vienna and Bratislava have high levels of population density, the rest of the regions are mostly rural.

**20 % of people is above 65 years**, while 15 % is below 15. Share of older people is highest in Burgenland (23 %), while Czech and Slovak regions have higher shares of younger people (16-17 %).

#### Economy

**29 000 € is the average GDP per capita**; highest in the capitals of Bratislava (48 000 €) and Vienna (44 000 €) and lowest in Western Slovakia (19 000 €), and Czech (24 000 €) and Hungarian (20 500 €) regions.

**Services make up 64 % of the economy**; industries 32 %. Share of industries is highest in Czech and Hungarian regions (41 %). A relatively high share of workers in Burgenland and Lower Austria is employed in agriculture (4.5 % vs. an average of the macro-region of 3 %). Austrian regions have also a higher share of tourism-related services (24 % vs. an average of the macro-region of 22 %).

**4 % of people are unemployed** with Austrian regions having the highest unemployment rate; 10 % in Vienna and 4 % in Burgenland and Lower Austria. Western Slovakia has also a relatively high rate (5 %). The rest of the regions are below 3 %.

#### Commuters

**Around 50 000 people commute** for work to another border region.

The main flows are from Hungarian regions towards Burgenland.

**The macro-region is characterised by strong East-West welfare gaps.** Despite the economic development of Eastern European countries, the Austrian economy and standards of living are still largely greater. For instance, the average living standards in Austria are nearly double those of Hungary. Thus, the possibility to engage in cross-border commuting across the regions represents for workers living in Eastern European countries a strategy to enhance one's economic living standards.

Note. GDP data from 2020. GDP in euros PPS per capita. Classification of population density according to Eurostat: low (predominantly rural) if the share of the population living in rural areas is higher than 50%; medium (intermediate) if the share is between 20 and 50%; high (predominantly urban) if the share is below 20%. Figures on commuters do not include flows between Slovakia and Austria, as the available data does not allow for a delineation of the region of work and residence.

Source: Data on population and economy: Eurostat regional statistics in 2021. Data on cross-border workers: EU-LFS 2021, custom extraction by Milieu. Qualitative inputs from Stadt Wien (2022), Centropemap (2022) and (EURES, 2022).

## Meuse-Rhine Region

Macro-region profile, 2021

The Meuse-Rhine macro-region is where border regions of Germany, Netherlands and Belgium meet. It includes German regions of Dusseldorf and Cologne, Belgian regions of Limburg, Antwerp, East Flanders and Prov. Liège, and Dutch regions of Zeeland and South Netherlands.



Cross-border partnerships are in place in the region to support and facilitate cross-border workers, such as EURES and Scheldemond (between Belgium and the Netherlands).



### Population

**19 million people live within the region;** German regions account for the largest share (50 %). All regions are densely populated, besides Zeeland and Prov. Liège that have low to medium densities.

**21 % of people is above 65 years,** while 15 % is below 15. The age composition of the population is rather similar across regions.

### Economy

**35 000 € is the average GDP per capita;** highest in Antwerp (42 000 €), followed by Dutch North Brabant (40 000 €) and German regions (38 000 €).

**Service sectors make up around 77 %** of the economy; industries 21 %. The sectoral structure of the economies is rather similar across the regions.

**4 % of people are unemployed;** Prov. Liège has the highest rate (8 %), while the rest of the regions are between 3 – 4 %.

### Commuters

**Around 5 000 people commute** for work to another border region.

Several workers move from the Netherlands towards Belgium. However, there are strong flows also in the opposite direction mainly to the Dutch regions of North Brabant and Limburg. Flows between the Netherlands and Germany are instead more limited.

**The regions are characterised by similar socio-economic and demographic characteristics.** Relative to the rest of the macro-regions analysed, where commuting flows happened mainly in a uni-directional way due to high disparities in economic development levels, in the Vaals macro-region flows happen in both directions (especially between Belgium and the Netherlands).

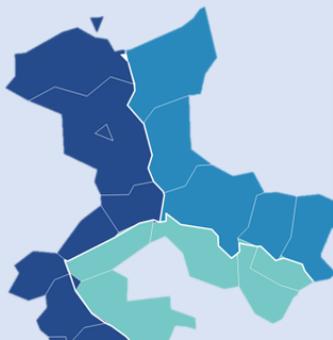
Note. GDP data from 2020. GDP in euros PPS per capita. Classification of population density according to Eurostat: low (predominantly rural) if the share of the population living in rural areas is higher than 50%; medium (intermediate) if the share is between 20 and 50%; high (predominantly urban) if the share is below 20. Total number of commuters does not include flows from Germany and France to the Netherlands, as the available data does not allow for a delineation of the region of work and residence.

Source: Data on population and economy: Eurostat regional statistics in 2021. Data on cross-border workers: EU-LFS 2021, custom extraction by Milieu, and and CBS, 2021.

## Tri-border region

### Macro-region profile, 2021

The **Tri-border macro-region** includes bordering regions between Germany (mainly Bavaria and Saxony), Poland (North- and Southwestern regions and Silesian region) and Czechia (North, Southwest, Central Moravia and Moravian-Silesian regions).



**Institutional cooperation across border regions is rather limited** (e.g. EURES-TriRegio project was terminated). Some initiatives can be found at local level (e.g. between companies or universities).



### Population

**31 million people live within the region;** Polish Silesian region accounts for the largest shares (14 %) followed by Berlin (12 %). Both are densely populated, while the rest has mainly medium levels.

**22 % of people is above 65 years,** while 14 % is below 15. Ageing population is pronounced in all German regions, with Chemnitz being at the top of the list (30 % of the population is above 65). The share of those above 65 is expected to increase 28 % in Bavaria between 2020 and 2040 and 8 % in Saxony between 2020 and 2035.

### Economy

**26 000 € is the average GDP per capita;** highest in German regions (32 000 €), especially Berlin (38 300 €) and Upper Palatinate (37 800 €), relative to Polish (20 000 €) and Czech (22 000 €) regions.

**Service sectors make up 62 %** of the economy; industries 34 %. Czech regions are highly focused on industries (42 %). Niederbayern, Lower Bavaria, Upper Palatinate and Chemnitz have also high shares of industrial activities (37 %) relative to the average of German regions (29 %).

**3 % of people are unemployed;** Berlin and Moravian Silesia in Czechia have the highest rates (5 %). The rest of the regions are between below 4 %.

### Commuters

**Around 29 000 people commute** for work to another border region\*.

Main flows happen between south-west Czechia and Upper Palatinate (6 300) and Lower Bavaria (4 600) in Germany.

**The higher living standards in Germany** act as pull factors for cross-border commuters from neighbouring countries. Those are necessary to ensure the continuity of the highly industrial activities in the regions, especially given the ageing of the German population. Flows of commuters in this macro-region are mainly uni-directional due to higher wages in Germany (e.g. average gross wages in 2020 were 2 700 euros in Sachsen, 1 300 in Czech and 1 100 in Polish border regions). Besides economic and welfare factors, socio-cultural disparities may also play a role, leading to a lack of trust across bordering regions and misunderstandings regarding working conditions across the border.

Note. GDP data from 2020. GDP in euros PPS per capita. Classification of population density according to Eurostat: low (predominantly rural) if the share of the population living in rural areas is higher than 50%; medium (intermediate) if the share is between 20 and 50%; high (predominantly urban) if the share is below 20%. Figure on commuters does not include flows between Poland and Germany, as the available data does not allow for a delineation of the region of work and residence.

Source: Data on population and economy: Eurostat regional statistics in 2021. Data on cross-border workers: EU-LFS 2021, custom extraction by Milieu. Qualitative inputs from EURES - TriRegio (2020).

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