

Zwysen, Wouter; Akgüç, Mehtap

Working Paper

Analysing the flows and labour market outcomes of short-term mobile workers in the EU

Working Paper, No. 2023.07

Provided in Cooperation with:

European Trade Union Institute (ETUI), Brussels

Suggested Citation: Zwysen, Wouter; Akgüç, Mehtap (2023) : Analysing the flows and labour market outcomes of short-term mobile workers in the EU, Working Paper, No. 2023.07, European Trade Union Institute (ETUI), Brussels

This Version is available at:

<https://hdl.handle.net/10419/299861>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Analysing the flows and labour market outcomes of short-term mobile workers in the EU

Wouter Zwysen and Mehtap Akgüç

Working Paper 2023.07

etui.

Analysing the flows and labour market outcomes of short-term mobile workers in the EU

Wouter Zwysen and Mehtap Akgüç

Working Paper 2023.07
european trade union institute

Wouter Zwysen and **Mehtap Akgüç** are senior researchers at the European Trade Union Institute (ETUI) in Brussels, Belgium. Contact: wzwysen@etui.org; makguc@etui.org

Brussels, 2023
© Publisher: ETUI aisbl, Brussels
All rights reserved
Print: ETUI Printshop, Brussels

D/2023/10.574/24
ISSN 1994-4446 (print version)
ISSN 1994-4454 (electronic version)



The ETUI is co-funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the ETUI. Neither the European Union nor the ETUI can be held responsible for them.

Contents

Abstract.....	4
1. Introduction.....	5
2. Mobility within the EU and labour market outcomes	6
3. Data and methods.....	9
3.1 What is a short-term mobile worker?.....	9
3.2 Flows of movers by country of origin to receiving country.....	10
3.3 Postings.....	10
3.4 Explaining the flows	11
3.5 Labour market outcomes	12
4. Empirical methods.....	14
5. Findings.....	16
5.1 Describing the flows.....	16
5.2 Where do people move from and to?	19
5.3 Labour market outcomes	23
6. Concluding remarks and discussion.....	27
References.....	29
Appendix.....	32

Abstract

While labour flows within the EU are substantial and growing, relatively little is known about what drives them or what conditions mobile workers face. This working paper describes the flows of working-age movers between EU Member States, addressing the question of who decides to move and whether these moves follow similar push and pull factors to migration more generally. Besides investigating why EU citizens move between countries, we also describe their initial labour market outcomes at the destination, which is important in considering the benefit of such moves. Our analyses indicate substantial variation in labour market outcomes. As with other migration, mobility within Europe is usually associated with relatively worse labour market opportunities in the labour market compared to the majority. There is strong variation between movers depending on region within the EU, however. This paper also compares the situation of recent movers to those who stay in their countries of origin, finding large differences between countries in the selection of movers.

Keywords: intra-EU flows, short-term mobility, labour market integration, migration

1. Introduction

The Covid-19 crisis has put into focus how important temporary intra-EU mobility flows are to some sectors, such as agriculture, meat processing, road freight transport and construction. Anecdotal evidence shows that these flows are large and that the working conditions of these workers are often abysmal (Rasnača 2020; Heindlmaier and Kobler 2022). However, knowledge of these flows and outcomes is rather scarce as few data are available and not all mobility is well captured.

As there is significant variation in the motivations for and types of mobility within the EU, and as such reasons play an important role when looking at labour market outcomes (Polavieja et al. 2018; Zwysen 2018), it is useful to consider both the extent to which these flows reflect labour market related reasons and the variation in labour market outcomes for new arrivals at the destination. In particular, the key research questions addressed in this paper regard the economic drivers of flows within the EU and the extent to which mobile workers integrate in the labour market in the short run.

Against this backdrop, this paper sets out (1) to map intra-EU mobility flows and indicate the role played by economic conditions and especially the prevalence of short-term work as determinants of moves; and (2) to describe the variation in labour market outcomes for recent intra-EU movers. In this latter analysis we pay particular attention to the selection of movers and the extent to which moving contributes to better labour market positions. While EU mobile workers are generally believed to be more privileged compared to migrants in general, initial results indicate that short-term mobile workers face high risks of working on temporary – and especially very short-term – contracts and in low-skill occupations. Last but not least, the paper also provides a brief labour market analysis comparing movers to non-movers in sending regions in the EU and shows that, in relative terms, movers are often better paid (after moving) than non-movers who stay in sending regions.

The remainder of the paper is organised as follows: we first describe the composition of mobility within the EU (Section 2), then detail the data sources in this paper and the main variables of interest used from various datasets (Section 3). Section 4 explains the methods of empirical analyses. Section 5 presents the key findings on flows and labour market outcomes and finally Section 6 concludes.

2. Mobility within the EU and labour market outcomes

Intra-EU mobility is a key element of the EU single market and comes in different varieties which are not all easily captured. The most straightforward are the movers who live, and generally work, in a different country from that of their origin within the EU. There are substantial differences here depending on the duration of the move, whether it is temporary for the short-term – officially defined as being between three months and a year (Green et al. 2009) – or longer term; or whether it is more settled or cyclical. In 2020 there were estimated to be 10 million EU movers of working age and 650 000 to 850 000 intra-EU seasonal workers (De Wispelaere 2022). However, these numbers are not that straightforward to measure. One issue in this vein is the lack of comparable data on short-term mobility.

Second, there are those who work in a different country than where the employer is based (e.g. De Wispelaere 2022) such as posted workers. On average, posted workers make up around 1 per cent of total employment in the EU but, for some sectors, this share can be much larger (De Wispelaere 2022). Posting is on the rise and is the topic of much debate within the EU, notably on whether the economic dynamics of providing services across borders have not taken too much precedence over the social dimension of the European Single Market (Lens et al. 2022). It is important to note that the motivations of employers for postings vary widely. In an interesting study based on interviews with Belgian employers, Lens et al. (2022) identify the key main reasons for postings with cost cutting the dominant, but not the only, motive as employers also rely on postings to tackle specific shortages or as part of the professional development of specialists. Besides postings, there are also large moves within Europe for shorter-term professional reasons, such as business trips, which are not considered here further (De Wispelaere 2022).

Finally, there is a sizeable number of frontier or cross-border workers, estimated at 1.7 million in 2022 (European Commission 2023). This includes workers who live in one country and work in another, commuting between these countries on a regular basis (Martiniello and Rath 2012; Dustmann et al. 2017).¹

Not all of these workers are captured in general statistics on the labour market including, for instance, the EU Labour Force Survey (EU LFS). This is particularly

1. Despite their significant size, we do not consider cross-border workers in detail in this paper, for they might not be considered truly as short-term intra-EU movers (which is the focus here) and rather as stocks of longer-term mobile workers.

problematic in the short term, implying that it is difficult to document the labour market outcomes of EU mobile workers in this timeframe.

In migration studies, intra-EU mobile workers are sometimes assumed to be the ‘ideal type’ of migrant,² having outcomes very similar to those of the majority in the host countries as they face no restrictions to their entry or right to work. Indeed, there is a clear beneficial effect found for citizens who acquire ‘European citizenship’ through accession (Guetto and Azzolini 2015; Kosyakova and Brücker 2021), which highlights the advantage of EU movers over third country migrants. However, mobile workers from within the EU also tend to see their skills devalued and often work on occupations below the expected level, indicating some disadvantage (Demireva 2011; Akgüç and Ferrer 2015; Zwysen and Demireva 2018, 2020). Movers from central and eastern Europe in particular tend to face a discounting of their qualifications and significant migrant penalties – gaps in outcomes relative to otherwise similar majority workers – on the labour market (Galgóczy and Leschke 2014; Zwysen and Demireva 2018). Importantly, mobile workers’ outcomes are likely to depend on the national context and the type of sector they work in. Several studies have documented the importance of the economic context and the amount of variation between countries/regions (e.g. Fellini and Guetto 2018; Kogan 2006, 2016; Zwysen 2018). While there is sometimes an expectation of more circular migration – with repeated flows back and forth from and to the sending country – the main patterns from the newer EU Member States seem to be either relatively short stays of up to five years or long-term migration (Strockmeijer et al. 2019). This makes it all the more important to study the initial labour market outcomes which, for a large part, affect overall trajectories and catch-up (if ever) patterns on the labour market.

Generally, the main reason for moving is an important determinant of labour market outcomes in the host country as it affects the choices and investments made. This varies on whether the aim is long-term settlement, short-term employment in order to make money and return to the country of origin or other, non-economic motivations (Zwysen 2018; Akgüç and Welter-Médée 2021). There are substantial differences between movers in the extent to which they are positively or negatively selected compared to the majority in their country. This matters in the European context where there are clear differences between movers from different countries in their motivations, duration of stay, opportunities, levels of skills (including unobserved ones) and qualifications that lead some groups to do better than others not only in the host country but also when compared to their compatriots (Polavieja 2015; Polavieja et al. 2018; Engbersen et al. 2013; Mooyaart and de Valk 2020). For instance, Windzio et al. (2021) show that traditional economic and socio-cultural factors (e.g. sharing a border, knowledge of the language) also play a role in intra-EU mobility, with mobile workers mainly moving from less to more prosperous countries.

2. Within European policy debates there is an insistence that mobility within the EU is not migration, speaking instead of ‘mobile EU citizens’ (Ruhs 2019: 166).

Our paper shares some of these findings, but it also adds further analysis on the different drivers of mobility pertinent to short-term mobility and compares the labour market outcomes of movers to those of workers in the host countries as well as those in the sending ones.

3. Data and methods

3.1 What is a short-term mobile worker?

As discussed above there are different types of short-term mobility proposed and used by different papers in the literature including frontier workers (Martiniello and Rath 2012; Dustmann et al. 2017), posted workers (e.g. De Wispelaere 2022) and movers from one country to another either in the long term or for shorter or seasonal durations.

However, there are a number of issues in measuring such workers from the above types of short-term mobility using conventional data sources (Fries-Tersch et al. 2020; Fenwick 2021). For instance, the majority of available data runs into problems of undercounting, accuracy, coverage or duration, which results in the situation where short-term migrants are often not captured in those data. While using social security data would be helpful due to its ‘universal’ coverage prospect, it also runs into issues as it may fail to capture some groups of workers that do not register in social security files, for example, as is often the case for seasonal or informal workers.

Given such data issues this paper proceeds in two steps. The first step concerns the extent to which labour market related factors serve as push or pull factors for mobility flows within the EU and, therefore, which types of movers are attracted. It uses cross-nationally harmonised and comparable data to study the extent and drivers of intra-EU mobility flows, focusing on all moves among working-age people and specifically on posted workers. The extent to which flows of postings between countries are driven by economic or institutional factors can shed some light on the flows of short-term mobility more widely as these are likely to be influenced by similar push and pull factors. Most postings last between three and 12 months and they may often not even involve a change of address – which makes it unlikely that these workers are covered by surveys in the host country (Fries-Tersch et al. 2020).

Second, we make use of the EU LFS, a large cross-nationally harmonised dataset, to study the labour market outcomes of people who have moved within the last year, thereby capturing the early outcomes of long-term movers as well as those of short-term mobile workers.

3.2 Flows of movers by country of origin to receiving country

The main data to study flows between EU Member States is taken from Eurostat, which provides information on flows of immigration to EU countries by country of birth and citizenship (MIGR_IMM3CTB and MIGR_IMM3CTZ). In 2007 Eurostat streamlined the collection of data on migration across EU Member States to capture migrant flows (Mooyaart et al. 2021), but the data collection cuts it off at staying or intending to stay at least 12 months – which is the cut-off for an EU mover rather than a short-term mover. This means that seasonal mobility stays very much under the radar (Fries-Tersch et al. 2021). The latter group is, however, rather relevant as large flows of workers move for temporary work and with seasonal contracts. These individuals also often work in precarious conditions (Rasnača 2020). Besides this variation in duration (either in terms of intention or actually staying), there is also variation in whether all flows are captured (undercounting), whether there are systematic differences in coverage and the accuracy of the data which is linked to its source (registers, surveys, etc.).

Where Eurostat data is not available, data from the OECD database on migrant flows for these countries was used (these have different minimum timings, ranging from three months to 12 months). The Eurostat and OECD data have a joint correlation of 0.81. OECD data are used for 38 per cent of migrant flows between 2010 and 2020. In both datasets, preference is given to flows that identify migrants based on country of birth and, where this is missing, citizenship was used instead.

This is a crucial source of information to map the flows of EU citizens across countries, but two main issues arise. First, the data concern working-age individuals but they do not speak to whether the decision to move was driven by work.³ Second, these will not capture seasonal or shorter-term migrants as they generally consider flows with the intention of staying at least a year.

3.3 Postings

As a second source of data on flows we use the issuing by Member States of Portable Document A1,⁴ which are statements on the applicable social security legislation. This is required for postings and comes under three main types: employees who are posted to another Member State on behalf of their employer (Article 12(1)); the self-employed who pursue a similar activity in another Member State (Article 12(2)); and persons who are employed or self-employed in two or more Member

3. According to data from the EU Labour Force Survey for 23 EU Member States, 35 per cent of EU migrants aged 18-64 in 2021 moved initially for reasons of employment, with a further 44 per cent moving for family reasons, 3.7 per cent for study or training, 0.1 per cent to retire and 17 per cent for other reasons. Of course, mobile citizens may have multiple motivations.

4. Information on postings can also be found through prior declarations in receiving countries (De Wispelaere et al. 2022b). While there is overlap with the A1 Document, this is not complete and we opt to use the Portable Document A1 here.

States (Article 13) (De Wispelaere 2022).⁵ In theory, this should be issued prior to posting but there is quite some deviation from this. The posted self-employed may not do this, for instance (De Wispelaere et al. 2022a). In this paper we make use of the Article 12 postings, which are clearly between two Member States, in order to identify the flows between pairs of countries (European Commission 2023).

Postings are one of the key ways through which EU citizens move from one Member State to another, specifically for short-term labour. It captures non-resident foreign workers whose employment relationship is with a non-resident entity (De Wispelaere 2022). However, there is variation in how diligently Member States gather and report data on these postings. On top of this, it is not always clear how many postings one person carries out (e.g. there could be more postings than the number of posted workers, as postings could be repeated), so that it does not necessarily provide information on the size of worker flows. Finally, postings do not capture those intra-EU workers who work for an organisation or company that is based in the country of residence.

3.4 Explaining the flows

The first aim of this paper is to ascertain the role played by certain labour market and economic characteristics in shaping the flows of movers within Europe. Most of the variables used in the following labour market analyses are identified as being among the common push or pull factors of migration (e.g. Bonin et al. 2009; Zimmermann 1996).

To this aim, several indicators are obtained from EU LFS micro-data between 2010 and 2020: the share of low and high-skill respondents; the share of low and high-skill occupations in which people work; and the share of workers working in seasonal-sensitive sectors (specifically agriculture, construction, and accommodation and food services). The latter sectors are susceptible to include a significant proportion of foreign-born workers. Other relevant information is obtained from Eurostat at country-level, such as the population of each country, GDP per capita (which also reflects differences in overall living standards and wages), the employment rate and the shares of value added in specific sectors that may be prone to seasonal or migrant labour (e.g. agriculture, food manufacture and construction). All these variables are merged to the data on flows or the EU LFS flow dataset by country (receiving/sending) and year. Beyond labour market characteristics, the social protection afforded to workers is also likely to matter. To capture these, we include data on social expenditure: that is, the share of GDP (obtained through Eurostat [tps00098]); union density at national level (obtained through the OECD ICTWSS AIAS database); and the Kaitz Index⁶ (the share of minimum wage to average wage obtained through Eurostat). Finally, the ILO

-
- 5. There is some difference between the issuing of Portable Document A1 and workers covered by the Posting of Workers Directive with the latter, for instance, not covering the self-employed (De Wispelaere et al. 2022b).
 - 6. Showing the share of the minimum wage to the average wage.

Employment Protection Legislation (EPLEX) Index is included to capture the strictness of employment protection legislation.

Importantly, these variables may have different roles for each of the flows. First, postings reflect workers' motivations but also those of employers (Lens et al. 2022). Second, there may be very different motivations between short-term mobility, such as postings, which can be about gaining economic opportunities while remaining within the home country for family, linguistic or cultural reasons, and longer term moves which are more likely to be guided by the quality of living and non-economic considerations (see e.g. Mussche et al. 2018).

3.5 Labour market outcomes

The second part of this paper seeks to explain the labour market outcomes of short-term mobile workers. To analyse these, we use EU LFS micro-data from 2010 to 2020 to identify respondents who live in a certain country Y at time t and report having lived in a different EU Member State X in the year prior to the survey [t-1]. This captures all types of mobility, including return migration.⁷ The EU LFS is a large survey carried out in the language of the country of residence and does not specifically focus on migrants. This results in large cross-country differences in the extent to which recent movers are captured. For this reason the data does not lend itself to looking at flows. However, where short-term movers are captured, it is possible to compare them to the majority (or the reference group) in the host country. This data does allow for a capturing of the labour market outcomes of movers who have been in the country for less than a year, which will encompass short-term movers (Fries-Tersch et al. 2020). Our analysis includes both employees and self-employed workers.

The labour market outcomes we explore are whether movers are employed rather than unemployed according to ILO definitions; and occupational status measured using the ISEI scale linked to occupation (Ganzeboom and Treiman 1996). To capture income, we rely on the EU LFS measure of labour income measured as country-specific deciles. This indicates the relative income position within a country but it is not suitable to compare how income changes for movers compared to stayers. To this end, we link data from the EU Survey on Income and Living Conditions (EU SILC) by country, year and decile of income.⁸ We use the EU SILC to estimate the deciles of monthly pay – estimated by dividing annual gross labour income by the months worked in the year – per country and year and adjust this

7. To limit this issue of return migration we make use of information on country of birth and citizenship being in a new (EU13) or old (EU15) Member State, while we recategorised as non-migrants those moving to a country where they were not born or where they do not have citizenship to one where they do. This still leaves out those moving within blocks of countries.

8. Data from EU SILC was not available for the United Kingdom in 2019 and 2020, nor for Germany and Italy in 2020. The deciles in the last available year (2018 for the UK; 2019 for Germany and Italy) were used instead.

income to real terms (purchasing power parity⁹) to account for differences in the cost of living. This income measure then indicates the approximate income, as the average of a decile, that someone earns and allows for a comparison of movers to stayers in different countries.

9. Beyond purchasing power, the exchange rate may also matter when considering savings and transfers. This would be especially important for cross-border commuters.

4. Empirical methods

The first part of the analyses describes the flows – in terms of number of people or number of postings – that move between EU Member States. For mobility flows in general, this refers to the flows of people who are born in, or are a citizen of, one EU Member State and who move to another in a given year. For postings, we look at the number of postings provided by an employer in one Member State (sending) to another (receiving).

To analyse the extent to which these flows are shaped by social or economic conditions in the sending and receiving country, we estimate a Poisson regression model of the number of moves between two EU Member States in a given year. This analysis then captures whether these flows are relatively larger or smaller under certain conditions measured by the covariates described earlier.

We estimate two main models. The first focuses on the characteristics of both sending and receiving countries to investigate the push and pull factors. Here, we control for the fixed characteristics of the sending and receiving countries, such as whether they share a border or a language group and the year, as well as the (log of) GDP per capita, (log of) population, employment rate and the share of low educated (lower secondary education or less) and high educated (tertiary education) people in the workforce. We further include separately the share of low-skill jobs, the share of less educated or highly educated people, the seasonal workforce, seasonal value added and institutional factors. In the second model, these analyses are repeated using not just the value for the sending and receiving countries but the difference between sending to receiving countries in order to capture whether the relative difference between both countries matters. This analysis is carried out within pairs of sending and receiving countries over time and captures how the flows between any two countries varies with changes in their relative characteristics, thereby modelling out any time-invariant factors that can affect the level of flows, such as linguistic or cultural ties. Table A1 in the Appendix shows the averages of these variables per country over the period of study.

The second part of the analysis that this paper sets out to explore are the labour market outcomes of different types of intra-EU mobile workers. We describe labour market outcomes ranging from employment, type of contract and occupational status to imputed income, the latter being the corresponding wage by decile as estimated from the EU-SILC data and adjusted for purchasing power. We estimate two gaps: one for mobile workers compared to those EU workers who work and live in their country of residence (destination country); and one

for mobile workers compared to EU workers who work in the same country from where the mobile worker had come (sending country).

To analyse gaps within the host countries, we conduct an analysis that compares mobile workers from all EU sending countries A to the majority in their receiving country B (equation 1), which includes country fixed effects for country of residence B and estimates the penalty for mobile workers through the coefficient β_1 on a dummy variable identifying individuals i who moved from another EU Member State A at t-1 to country B, while also including control variables X: gender, interacted with age squared, marital status, having children under five years old, having children aged five to 14; as well as highest qualification obtained (at most lower secondary, upper secondary or post-secondary non-tertiary, and tertiary) and urban residence status of the dwelling (big city, rural, town). This analysis then essentially compares how EU working-age movers compare to the majority in the country where they currently live.

Equation 1:

$$\text{Receiving: } Outc_{i,t} = \alpha + \beta_2 * mover_{i,A[t-1]B[t]} + country_B + \gamma * X_{i,t} + \varepsilon_{i,t} \mid Country_t = B$$

We also analyse how the labour market outcomes of movers differ from those of similar people in the sending country as an indication of their selection and the outcomes that were most likely to occur if they were not to have moved. To this aim (equation 2) we compare movers from sending country A [at t-1] to receiving country B [at t] to the majority in country A by including fixed effects for country of origin. The difference in outcomes compared to non-movers, i.e. those who stayed in sending country A, is then captured by β_2 .

Equation 2:

$$\text{Sending: } Outc_{i,t} = \alpha + \beta_1 * mover_{i,A[t-1]B[t]} + country_A + \gamma * X_{i,t} + \varepsilon_{i,t} \mid Country_{t-1} = A$$

All models are weighted using EU LFS probability weights and estimated using linear probability models. Table A2 in the Appendix shows the descriptive statistics for key variables in the EU LFS data.

5. Findings

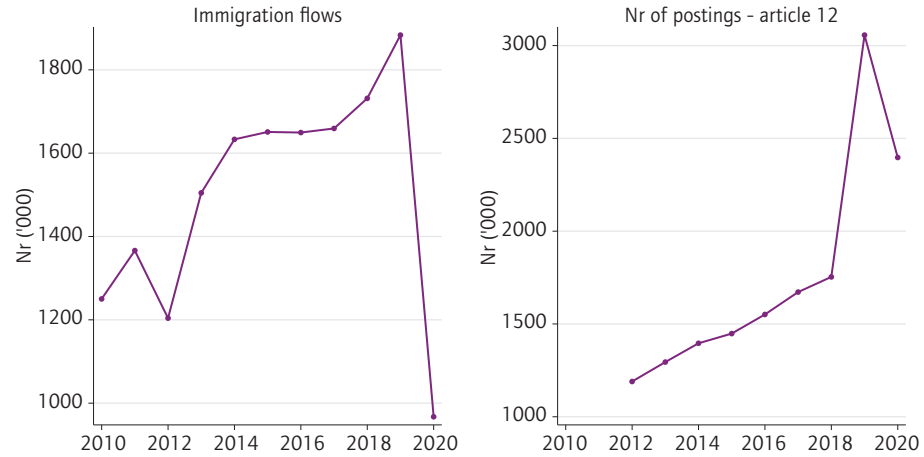
5.1 Describing the flows

Figure 1 shows intra-EU flows as reported through Eurostat. Intra-EU flows grew until around 2015 and then plateaued at close to two million per year up to 2019. Following the Covid-19 pandemic in 2020 there was a sharp decline, which is likely to reflect the closing of borders and lockdowns. The right panel shows similar flows for postings from 2012 to 2020. The number of postings increased steadily from about one million to around three million in 2019 and then declined. The sharp rise from 2018 to 2019 reflects almost completely a change in Germany, where the number of documents under Article 12 increased from 409 000 to 1.7 million through stricter recording and digital application processes (De Wispelaere et al. 2022a: 27). However, there was a drop of around 500 000 postings in 2020 compared to 2019.

In this paper we stick to flows prior to 2020 as the data is more consistent for flows between countries up to that point. In 2020 as a result of the Covid-19 pandemic, mobility within the EU and European Free Trade Association (EFTA) countries¹⁰ declined substantially, with a greater proportion of the remaining mobility being returnees (European Commission 2022). The numbers presented below are an under-estimation as they include only data where the precise flows – meaning both country of origin and the country to which someone moves – are known. In 2021, the total number of postings was estimated to be around 3.6 million in the EU and EFTA including all different types; that is, under Article 12 as well as 13. The number of Portable Document A1s issued under Article 12 dropped the most under the influence of the Covid-19 pandemic, but is still above the 2018 level so the rise is likely to continue. Importantly as well is that the vast majority of Portable Documents A1s issued in 2021 were issued by Germany (997 000) and Poland (677 000), who together accounted for 47 per cent of overall postings (De Wispelaere et al. 2022a).

10. EFTA countries include Iceland, Lichtenstein, Norway and Switzerland.

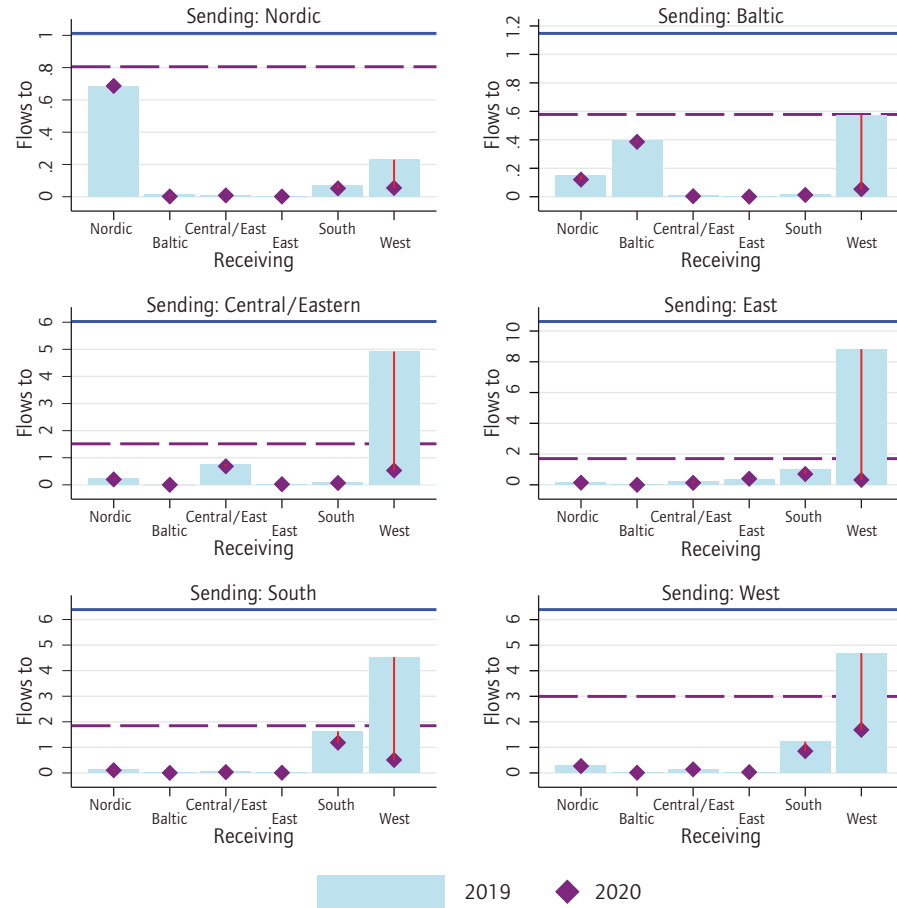
Figure 1 Flows of intra-EU movers and postings across Europe



Source: Eurostat and OECD migration flow data; posting.stat data (De Wispelaere et al. 2022a).

Figure 2 zooms into the recent years around the pandemic and clarifies which flows increased or declined within the EU from 2019 to 2020, aggregating the flows to geographical regions in either direction (sending/receiving). Flows from central and eastern European countries declined substantially: while those countries made up close to 20 per cent of the flows in 2019, this declined to around four per cent; and for eastern European countries, which made up around a third of all flows in 2019, this dropped to seven per cent. Flows from southern European countries also more than halved, as did those from western countries. The biggest drop was in flows to wealthier western European countries, which has traditionally been among the top destination countries for mobile citizens.

Figure 2 Intra-EU mobility flows decline during the Covid-19 pandemic

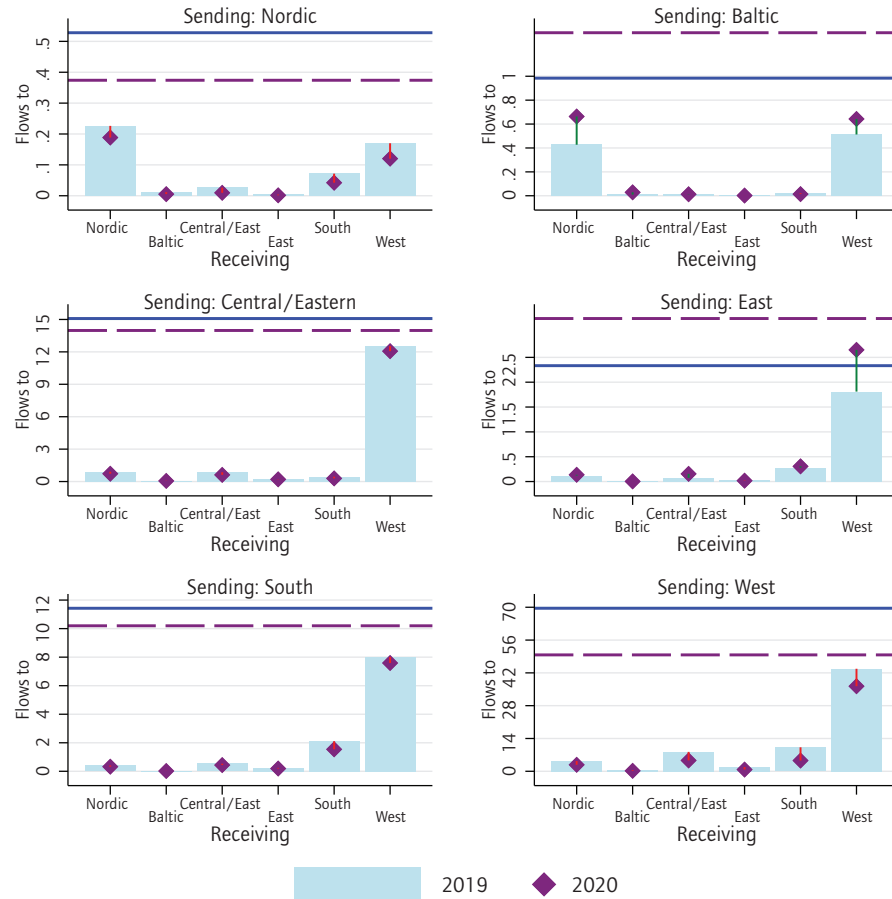


Note: Change in the number of EU residents moving within the EU from 2019 to 2020, expressed as a percentage of all movers in 2019. Countries are grouped as Nordic (NO, DK, FI, SE); Baltic (EE, LV, LT); Central/East (HU, CZ, PL, SK, SI); East (RO, BG, HR); South (IT, ES, PT, CY, MT, GR); and West (BE, NL, LU, FR, DE, UK, IE, AT, CH).

Source: Eurostat and OECD migration flow data (2019–2020).

Figure 3 shows that, in contrast to overall mobility, postings remained relatively stable even during the pandemic. While flows declined somewhat overall, there was no such drop in the flows from central and eastern European countries. Importantly however, western European countries seem by far the largest receiving countries for postings and these did reduce, from around 70 per cent of the 2019 level to 50 per cent in 2020. This is mainly driven by Germany.

Figure 3 Intra-EU posting flows more robust during the pandemic



Note: Change in the number of EU residents moving within the EU from 2019 to 2020, expressed as a percentage of all movers in 2019. Countries are grouped as Nordic (NO, DK, FI, SE); Baltic (EE, LV, LT); Central/East (HU, CZ, PL, SK, SI); East (RO, BG, HR); South (IT, ES, PT, CY, MT, GR); and West (BE, NL, LU, FR, DE, UK, IE, AT, CH).

Source: posting.stat data (De Wispelaere et al. 2022a).

5.2 Where do people move from and to?

This section sheds light on these flows by linking them to the characteristics of the sending countries (country of origin in the case of postings; birth or citizenship in the case of overall flows) and the receiving ones (where one moves to), which could then be interpreted as pull and push factors of mobility. Figure 4 shows the results from separate models per characteristic on the size of mobility flows from sending to receiving countries over time, controlling for the time-invariant characteristics of sending and receiving country.

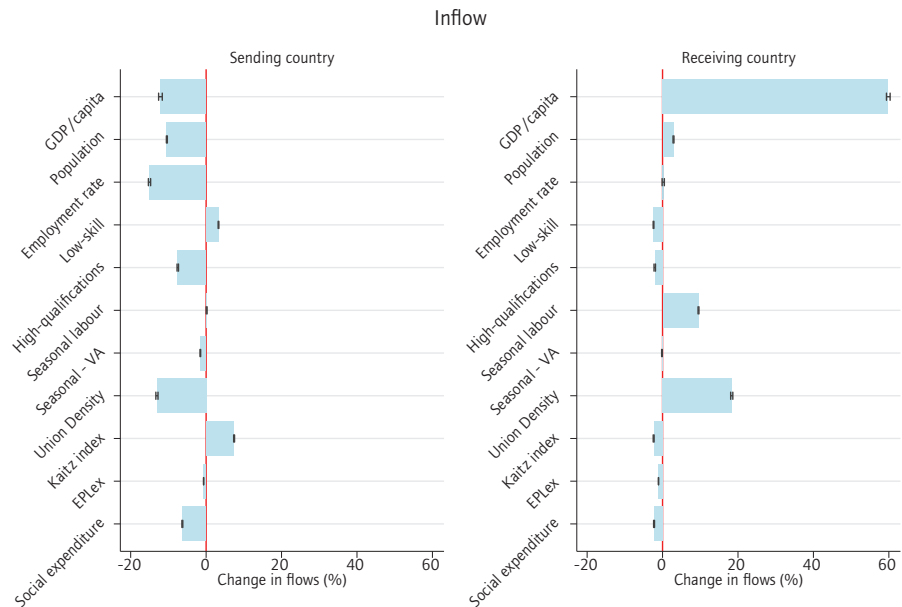
While most of the findings are in line with what has been highlighted as the determinants of migration in the literature in general, we also find some interesting results; for example, pertaining to the relatively lower importance of some variables related to social and welfare states as pull factors of mobility.

In addition, our findings also highlight some determinants of mobility that are seasonally sensitive and thus more relevant for shorter-term mobility flows (e.g. the share of agriculture or accommodation sectors in the receiving economy).

When looking at the characteristics of the country of origin of movers (the left panel of Figure 4), fewer people leave countries that are more populous, wealthier, have a higher employment rate, more highly educated workers and higher union density and where a higher share of GDP is spent on social programmes and protection. On the other hand, outflows tend to be higher from countries where the minimum wage is relatively higher compared to the median (Kaitz Index) and where there are more low-skill jobs.

As regards receiving country (the right panel of Figure 4), wealth, measured as GDP per capita, is associated with higher flows, meaning that higher income levels at the destination appears to be a pull factor of mobility. People are also more likely to move to more populous countries and those with a higher share of workers in seasonally sensitive sectors – for example agriculture, construction and accommodation. Countries with higher union density also tend to be more popular destinations. This points to differences in overall income and GDP levels as a major driver of flows within the EU, but also possibly to the quality of jobs and the demand for seasonal work which points to economic motivations.

Figure 4 Estimated push and pull factors of mobility flows

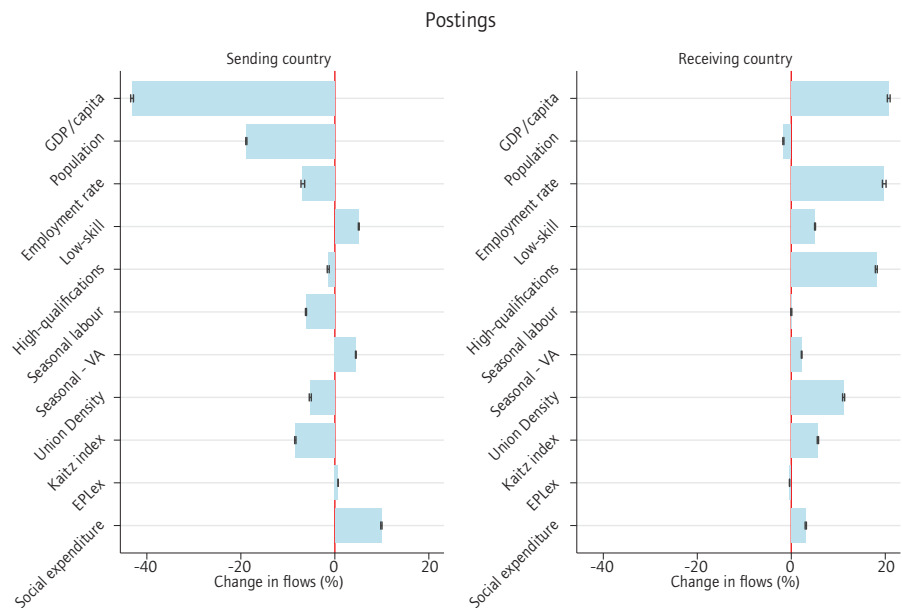


Note: Estimated change in flows (%) for a change from 25th to 75th percentile of the contextual factor, controlling for shared border, shared language group, GDP, population, employment rate and share of low and high-educated people in sending and receiving country, as well as fixed effects for year, sending and receiving country. *: effect capped at 150%.

Source: Eurostat (2010-2020), augmented with external data.

Figure 5 shows similar analyses for the number of postings from one country to another. As the left panel displays, postings tend to go from countries with lower GDP, a lower population and lower employment rates. The number of postings is also associated with a higher share of low-skill workers in the sending country. Posting flows tend to be higher from countries with more social spending – noting that posted workers remain within the social security system of the sending country – and are generally smaller in countries with higher union density or higher minimum wages relative to the average. The countries where postings are carried out (the right panel of Figure 5) are, on the other hand, generally wealthier, with a higher employment rate, a more highly educated workforce and a greater rate of seasonal jobs in terms of value added, as well as relatively high union density, higher relative minimum wages, and higher social expenditure. Importantly, as posted workers themselves generally do not receive welfare benefits in the receiving country, higher institutional protections and welfare can serve as a reason for employers to use postings to cut costs (Lens et al. 2022).

Figure 5 Estimated drivers of postings – sending and receiving country



Note: Estimated change in flows (%) for a change from 25th to 75th percentile of the contextual factor, controlling for shared border, shared language group, GDP, population, employment rate and share of low and high-educated people in sending and receiving country, as well as fixed effects for year, sending and receiving country. *: effect capped at 150%.

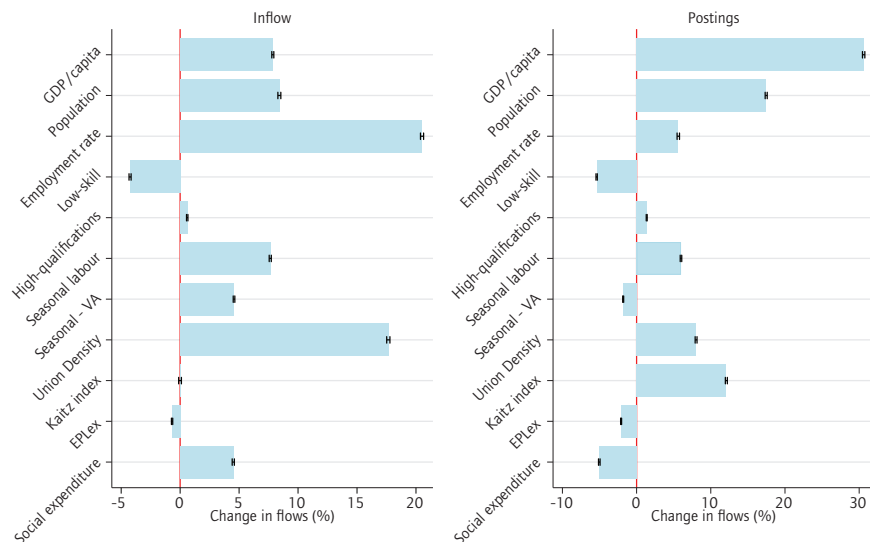
Source: posting.stat (2012–2020) (De Wispelaere et al. 2022a), augmented with external data.

Rather than look from the perspective of the country of birth or sending country, or from that of receiving country, to grasp what drives mobility, it is also possible to look at the relationship between a pair of countries directly. The question is then to what extent differences in economic and labour market characteristics between two specific countries affect the amount of either overall mobility or postings under Article 12 between those two countries. Figure 6 shows estimates

of the flows within pairs of countries in a Poisson regression framework. This allows for an analysis of how a change in one of the factors we look at here – e.g. GDP, population, employment structure and social protection – between two countries can affect the flows between them, while keeping constant all the other characteristics they share, such as cultural or linguistic affinity, a border or historical ties, as long as they remain constant over time.

First, both overall mobility and postings follow a similar logic in terms of labour market characteristics. This points to mobility flows containing an important economic aspect as well. These flows tend to go from poorer to wealthier countries, from smaller to richer ones and from those with lower employment rates to those with higher ones. Flows also go towards countries with relatively fewer low-skill workers and more high-educated workers. This indicates that more high-skill workforces as well as better economic conditions are attractive to movers. Additionally, there is a greater flow towards countries where seasonal work is generally more important within the economy. As expected, characteristics of social security and welfare do differ between overall moves and postings. General mobility is in the direction of countries with generally higher union density and higher social expenditure relative to GDP, indicating that stronger welfare benefits may be an attractive factor. Similarly, postings tend to be higher from countries with relatively lower minimum wages and lower union density towards countries with relatively higher minimum wages and union density which also reflects a greater incentive to cut costs through postings.

Figure 6 Within-pair flows of intra-EU mobility



Note: Estimated change in flows (%) for a change from 25th to 75th percentile of difference in the contextual factor, controlling for differences in GDP, population, employment rate and share of low and high-educated people in sending and receiving countries, as well as fixed effects for year, sending and receiving country.

*: effect capped at 150%.

Source: Eurostat and OECD data for flows; posting.stat data for postings.

This section indicates that mobility flows within Europe do tend to follow some of the same economic considerations as postings and the provision of services. Generally, the flows present a flow of labour away from poorer countries with fewer labour market opportunities and towards wealthier countries with a higher demand for labour, particularly also where there are higher demands for work in agriculture, construction and transport.

5.3 Labour market outcomes

The previous section indicated that economic and employment reasons play some role in attracting movers. The next question is how these mobile workers fare in the labour market. To answer this, we analyse outcomes in the EU LFS for recently arrived residents who lived in another EU Member State in the previous year.

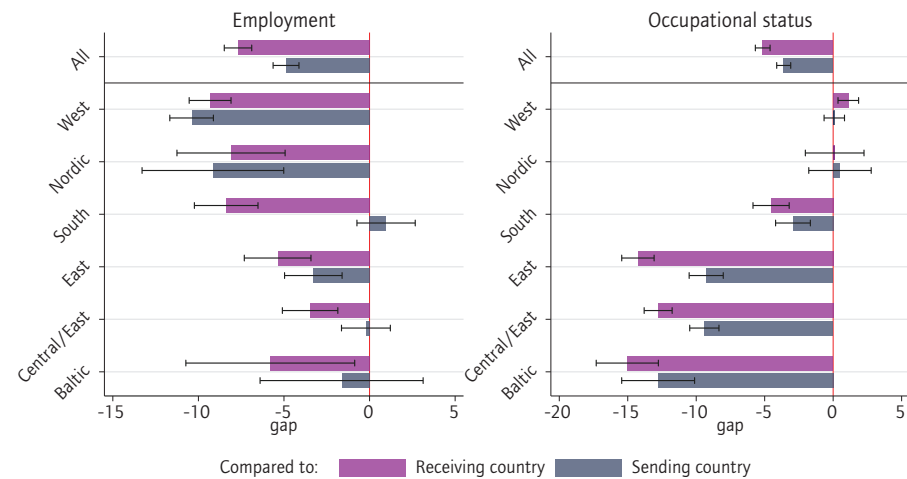
Figure 7 shows how recently arrived intra-EU mobile citizens differ from similar people in sending or receiving countries in their: (1) probability of being employed rather than unemployed (the left panel); and (2) occupational status (the right panel). Results are displayed for the whole sample as well as by geographical region. In general, intra-EU movers are between five and 10 percentage points less likely to be employed than those who did not move; and work in lower status jobs. There is substantial variation between regions of origin, however. Those moving from western European and Nordic countries face large employment gaps (both compared to individuals in their sending regions and those in the receiving regions) but, when employed, they tend to work in jobs which are better than those residing in the receiving country. This indicates that they have more choice and a safety net to hold out for better status jobs. Movers from central and eastern, eastern, or Baltic countries have relatively low employment gaps, at around five percentage points lower than those in their receiving countries, but they also work in much lower status jobs. Importantly, when compared to those who stayed in the sending country, the employment gaps are substantially smaller and they almost even disappear for Baltic or central and eastern European movers. Those moving from southern Europe have much lower employment probabilities than the majority in their receiving countries, but not at all when compared to stayers in the country of origin. This can indicate the importance of considering origin, since the previous analysis on flows points to movers going from countries with fewer labour market opportunities to those with more.

One aspect that these patterns are likely to be capturing is a difference in motivation between movers: whereas a higher share of movers from central and eastern, eastern or Baltic countries come mainly for jobs or to look for work, there are likely to be different motivations (potentially non-economic, e.g. family reasons) among those moving from western or Nordic countries. This is also indicated by a comparison of differences with the receiving country (which reflects the employment penalty of moving) and differences with the majority in the sending country in terms of better status jobs (which, at least partly, reflects selection and unobserved characteristics of the mover). For instance, movers from western and Nordic Member States have lower employment opportunities than those of people in their country of origin with similar observed characteristics which is likely to

reflect that they differ in either their main motivation or unobserved skills which reduces their employment opportunities. Since these are more or less the same as the actual gaps compared to the majority, we expect that the gaps which do exist mainly reflect differences in unobserved factors. On the other hand, movers from the south, central and eastern Europe and the Baltics face substantially higher employment gaps than the gaps compared to similar people in their country of origin, which indicates a stronger disadvantage based on the mobility itself. Similarly, these groups – particularly eastern and central and eastern movers – also work in jobs with much lower occupational status than they would be expected to hold compared to the majority of individuals in sending countries. A similar situation, yet to a lesser extent, holds true for movers from southern Europe, while there is no such difference for western and Nordic movers.

This finding can, first, indicate negative selection where those that move had fewer opportunities in the sending country for reasons not observed here. Second, and crucially, this is also driven by large differences in income levels between countries where even a relatively lower wage in a much wealthier country may result in a higher absolute income than could otherwise have been obtained had they stayed in the origin country.

Figure 7 Labour market outcomes of recent EU movers compared to those in the same receiving or sending country

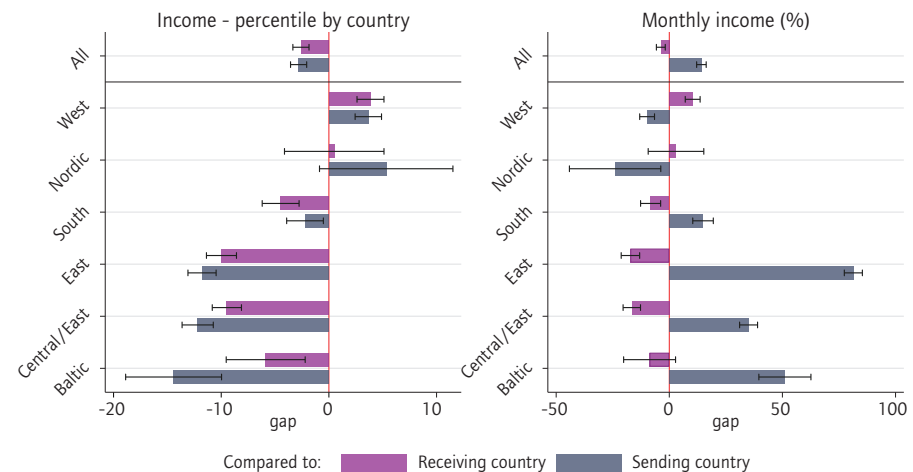


Note: Estimated difference between mobile workers and the majority in the receiving country or of a mobile worker elsewhere compared with the majority in the sending country. Estimated from logistic regression (employment) and shown as marginal effect in probabilities, or coefficient from linear regression (occupational status), controlling for gender, age squared, marital status, child under five and child aged five to 14, all interacted with gender, highest qualification and urbanity of residence. Weighted. Countries are grouped as Nordic (NO, DK, FI, SE); Baltic (EE, LV, LT); Central/East (HU, CZ, PL, SK, SI); East (RO, BG, HR); South (IT, ES, PT, CY, MT, GR); and West (BE, NL, LU, FR, DE, UK, IE, AT, CH).
Source: EU LFS 2010-2020.

Figure 8 shows how the predicted wages of movers differ from those in the receiving and the sending country. This matters as movers tend to move to wealthier countries where the wages are much higher which means that, even when doing lower status jobs, the wage may be relatively high compared to the situation had they not moved. Indeed, the left panel shows that movers tend to lie on the lower parts of the wage distribution within the receiving country as well as when compared to stayers. This means they would, for instance, have an income corresponding to the third decile of wages in their own country whereas stayers with similar characteristics would be earning closer to the fourth. However, as the countries to which movers go tend to pay much higher wages, in terms of actual income they might still be better off given the absolute wage differentials between sending and receiving countries. Indeed, the right panel shows that, while almost all movers, with the exception of those from Nordic or western European countries, earn less than the majority with similar characteristics in their receiving countries, they generally have higher and sometimes even much higher incomes than would be expected in the sending country. For movers from eastern European countries, this even entails almost a doubling of wages compared to those staying while it is a 50 per cent increase from those from Baltic or central and eastern European countries.

This points to the continued importance of large wage differentials between European countries in attracting movers. The question is whether this has changed over time as income gaps narrow between European countries (Zwysen 2022).

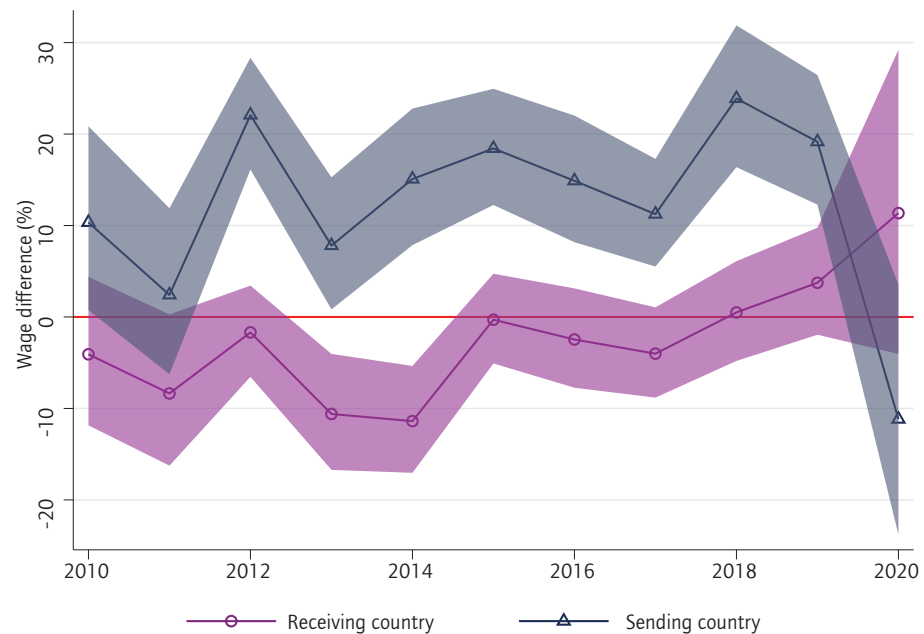
Figure 8 Intra-EU mobility is associated with higher earnings



Note: Estimated difference between mobile worker and the majority in the receiving country or of a mobile worker elsewhere compared with the majority in the sending country in the percentile of income and the log of imputed monthly earnings, in real terms and adjusted for the cost of living (ppp). Estimated from linear regression, controlling for gender, age squared, marital status, child under five and child aged five to 14, all interacted with gender, highest qualification and urbanity of residence. Weighted.
Source: EU LFS; and EU-SILC for deciles of monthly earnings.

Figure 9 shows the evolution of these income gaps – the difference in income between movers compared to the reference group in the receiving country (the majority) as well as compared to those staying in the sending countries, interpolated from the income deciles from the EU LFS by country – for all intra-EU mobile workers over time. It shows that earnings gaps between movers and the majority in the receiving country declined from 2014 to 2015 and have stayed similar since then; while the gaps between movers and stayers in the sending country have remained relatively stable although there is some indication that they declined in 2020. This sharp decline in 2020 is likely to reflect the impact of the pandemic when a greater share of overall mobility within Europe was taken by returnees (European Commission 2023).

Figure 9 Income gaps over time for mobile workers



Note: Estimated difference between mobile worker and the majority in the receiving country or of a mobile worker elsewhere compared with the majority in the sending country over time in log of imputed monthly earnings, in real terms and adjusted for the cost of living (ppp). Estimated from linear regression interacting mobility with year and controlling for gender, age squared, marital status, child under five and child aged five to 14, all interacted with gender, highest qualification and urbanity of residence. Weighted. Source: EU LFS; and EU-SILC for deciles of monthly earnings.

6. Concluding remarks and discussion

While the Covid-19 pandemic led to a drop in intra-EU mobility, it is generally going up over time. There are different forms of mobility such as cross-border work and posted workers as well as more traditional migration. Despite its unique regulation as part of the freedom of movement within the EU offered to EU citizens, these intra-EU flows rather follow a traditional economic rationale, yet with large variations between regions: flows go more towards wealthier countries with higher demands for labour; and to those countries that offer better protection for workers. In the current context of labour shortages, this also means that shortages in the less wealthy Member States are exacerbated as workers move elsewhere for better conditions (McGrath 2021). This can be detrimental to the sending countries in the long term (e.g. concerns over ‘brain drain’) and merits further research.

Intra-EU mobility is sometimes disregarded in migration studies as these movers are considered, in some way, very privileged migrants. However, they also face difficulties in the labour market with lower employment probabilities and generally lower quality jobs. Importantly, there is a large regional variation here where mobile workers from central, eastern and Baltic EU Member States tend to work in much lower status jobs than would be expected given their qualifications. However, the large income differentials between European countries might still make this a rational choice for movers as a worker from a poorer Member State will generally still earn much more in absolute terms working at a lower quality job in a richer Member State than she or he could expect to earn when staying on in their sending country.

Even in the absence of important legal hurdles, these mobile workers tend to work below their level of skills and qualifications and for lower pay than would be expected in the receiving country. This matters as it opens the door to exploitation and to downwards pressure on the jobs and conditions of workers in the receiving country. This may be particularly important in sectors that make heavy use of posted workers, subcontracted workers and seasonal workers.

While this analysis aims to shed some light on the structure behind mobility flows within the EU and the labour market outcomes of mobile workers, it also highlights the gaps in our current knowledge and data. Too little is known about short-term moves and mobility across borders, while seasonal labour flows in particular are often missed despite their important impact on labour markets, especially in receiving countries. Despite the analysis conducted here, this paper highlights the need for better data collection and retention as this group of still

vulnerable mobile workers has not been well captured in most existing statistics so far. It is also important to regulate temporary work, posting work and seasonal labour and to make sure that people who use their right to free movement do not face exploitation or undervaluation of their skills and competences.

References

- Akgüç M. and Ferrer A.M. (2015) Educational attainment and labor market performance: an analysis of immigrants in France, Discussion Paper 8925, IZA Institute of Labor Economics.
- Akgüç M. and Welter-Médée C. (2021) Linking migration reasons and origins to labour market outcomes: recent evidence from Europe, *Economie et Statistique / Economics and Statistics*, (524–525), 103–118. <https://doi.org/10.24187/ecostat.2021.524d.2048>
- Bonin H. et al. (2009) Geographic mobility in the European Union: optimising its economic and social benefits, Research Report, (19), IZA Institute of Labor Economics.
- De Wispelaere F. (2022) Improving the monitoring of posted workers in the EU: towards an exhaustive approach of employment statistics, *CESifo Forum*, 23 (3), 29–32.
- De Wispelaere F., De Smedt L. and Pacolet J. (2022a) Posted workers in the European Union, HIVA, KU Leuven.
- De Wispelaere F., De Smedt L. and Pacolet J. (2022b) Posting of workers: report on A1 portable documents issued in 2021, Publications Office of the European Union.
- Demireva N. (2011) New migrants in the UK: employment patterns and occupational attainment, *Journal of Ethnic and Migration Studies*, 37 (4), 637–655. <https://doi.org/10.1080/1369183X.2011.545308>
- Dustmann C., Schönberg U. and Stuhler J. (2017) Labor supply shocks, native wages, and the adjustment of local employment, *The Quarterly Journal of Economics*, 132 (1), 435–483. <https://doi.org/10.1093/qje/qjw032>
- Engbersen G. et al. (2013) On the differential attachments of migrants from central and eastern Europe: a typology of labour migration, *Journal of Ethnic and Migration Studies*, 39 (6), 959–981. <https://doi.org/10.1080/1369183X.2013.765663>
- European Commission (2023) Annual report on intra-EU labour mobility 2022, Publications Office of the European Union.
- Fellini I. and Guetto R. (2018) A ‘u-shaped’ pattern of immigrants’ occupational careers? A comparative analysis of Italy, Spain, and France, *International Migration Review*, 53 (1), 26–58. <https://doi.org/10.1177/0197918318767931>
- Fenwick C.E. (2021) The devil is in the detail: measuring intra-EU labour migration, Leiden University. <https://hdl.handle.net/1887/3242844>
- Fries-Tersch E. et al. (2020) 2019 annual report on intra-EU labour mobility, Publications Office of the European Union.
- Fries-Tersch E., Jones M. and Sioland L. (2021) Annual report on intra-EU labour mobility 2020, Publications Office of the European Union.
- Galgóczi B. and Leschke J. (2014) Post-enlargement intra-EU labour mobility under stress test, *Intereconomics*, 49 (3), 152–158.
- Ganzeboom H.B.G. and Treiman D.J. (1996) Internationally comparable measures of occupational status for the 1988 International Standard Classification of Occupations, *Social Science Research*, 25 (3), 201–239. <https://doi.org/10.1006/ssre.1996.0010>
- Green A.E., Baldauf B. and Owen D. (2009) Short-term mobility final report, Institute for Employment Research, University of Warwick.
- Guetto R. and Azzolini D. (2015) An empirical study of status exchange through migrant/native marriages in Italy, *Journal of Ethnic and Migration Studies*, 41 (13), 2149–2172. <https://doi.org/10.1080/1369183X.2015.1037725>

- Heindlmaier A. and Kobler C. (2022) Essential, lonely and exploited: why mobile EU workers' labour rights are not enforced, *Journal of Ethnic and Migration Studies*, (Early view), 1–20. <https://doi.org/10.1080/1369183X.2022.2102971>
- Kogan I. (2006) Labor markets and economic incorporation among recent immigrants in Europe, *Social Forces*, 85 (2), 697–721. <https://doi.org/10.1353/sof.2007.0014>
- Kogan I. (2016) Integration policies and immigrants' labor market outcomes in Europe, *Sociological Science*. <https://doi.org/10.15195/v3.a16>
- Kosyakova Y. and Brücker H. (2021) Does free movement of workers boost immigrant employment? New evidence from Germany, *Migration Studies*, 9 (4), 1734–1762. <https://doi.org/10.1093/migration/mnab047>
- Lens D., Mussche N. and Marx I. (2022) The different faces of international posting: why do companies use posting of workers?, *European Journal of Industrial Relations*, 28 (1), 27–45. <https://doi.org/10.1177/09596801211023262>
- Martiniello M. and Rath J. (2012) An introduction to international migration studies: European perspectives, in Martiniello M. and Rath J. (eds.) *An introduction to international migration studies: European perspectives*, Amsterdam University Press, 15–22.
- McGrath J. (2021) Report on labour shortages and surpluses, European Labor Authority.
- Mooyaart J., Daňko M.J., Costa R. and Boissonneault M. (2021) Quality assessment of European migration data, QuantMig Project Deliverable 6.2, Netherlands Interdisciplinary Demographic Institute (NIDI-KNAW)/University of Groningen.
- Mooyaart J. and de Valk H. (2020) Intra-EU migration 2010–2020, QuantMig Deliverable 4.2, Netherlands Interdisciplinary Demographic Institute (NIDI-KNAW)/University of Groningen.
- Mussche N., Corluy V. and Marx I. (2018) How posting shapes a hybrid single European labour market, *European Journal of Industrial Relations*, 24 (2), 113–127. <https://doi.org/10.1177/0959680117708374>
- Polavieja J.G. (2015) Capturing culture a new method to estimate exogenous cultural effects using migrant populations, *American Sociological Review*, 80 (1), 166–191. <https://doi.org/10.1177/0003122414562600>
- Polavieja J.G., Fernández-Reino M. and Ramos M. (2018) Are migrants selected on motivational orientations? Selectivity patterns amongst international migrants in Europe, *European Sociological Review*, 34 (5), 570–588. <https://doi.org/10.1093/esr/jcy025>
- Rasnača Z. (2020) Essential but unprotected: highly mobile workers in the EU during the Covid-19 pandemic, ETUI Policy Brief 9/2020, ETUI.
- Ruhs M. (2019) 'Migrants', 'mobile citizens' and the borders of exclusion in the European Union, in Bauböck R. (ed.) *Debating European citizenship*, IMISCOE Research Series, Springer International Publishing, 163–168. https://doi.org/10.1007/978-3-319-89905-3_32
- Strockmeijer A., de Beer P. and Dagevos J. (2019) Should I stay or should I go? What we can learn from working patterns of central and eastern European labour migrants about the nature of present-day migration, *Journal of Ethnic and Migration Studies*, 45 (13), 2430–2446. <https://doi.org/10.1080/1369183X.2018.1562326>
- Windzio M., Teney C. and Lenkewitz S. (2021) A network analysis of intra-EU migration flows: how regulatory policies, economic inequalities and the network-topology shape the intra-EU migration space, *Journal of Ethnic and Migration Studies*, 47 (5), 951–969. <https://doi.org/10.1080/1369183X.2019.1643229>
- Zimmermann K.F. (1996) European migration: push and pull, *International Regional Science Review*, 19 (1–2), 95–128. <https://doi.org/10.1177/016001769601900211>

- Zwysen W. (2018) Different patterns of labor market integration by migration motivation in Europe: the role of host country human capital, *International Migration Review*, 53 (1), 59-89. <https://doi.org/10.1177/0197918318767929>
- Zwysen W. (2022) Wage inequality within and between firms: macroeconomic and institutional drivers in Europe, Working Paper 2022-2, ETUI.
- Zwysen W. and Demireva N. (2018) An examination of ethnic hierarchies and returns to human capital in the UK, *Social Inclusion*, 6 (3), 6-33. <https://doi.org/10.17645/si.v6i3.1457>
- Zwysen W. and Demireva N. (2020) Ethnic and migrant penalties in job quality in the UK: the role of residential concentration and occupational clustering, *Journal of Ethnic and Migration Studies*, 46 (1), 200-221. <https://doi.org/10.1080/1369183X.2018.1498777>

Appendix

Table A1a Characteristics of sending and receiving countries, 2010-2020

	Log GDP/capita	Log population	Employment rate	Share low-educated	Share high-educated	Share employed seasonal industries	Share in VA of seasonal industries
AT	10.50	15.97	71.83	0.21	0.24	0.19	14.57
BE	10.45	16.24	63.03	0.30	0.32	0.12	9.94
BG	8.67	15.78	63.76	0.23	0.23	0.20	14.77
CH	11.01	15.93	79.14				9.21
CY	10.03	13.66	66.39	0.26	0.35	0.20	15.37
CZ	9.71	16.17	70.70	0.13	0.19	0.15	12.12
DE	10.44	18.22	74.33	0.19	0.25	0.12	8.52
DK	10.75	15.55	72.76	0.29	0.30	0.12	9.57
EE	9.52	14.10	70.42	0.17	0.33	0.17	13.49
EL	9.74	16.20	52.56				15.90
ES	10.05	17.66	59.26	0.45	0.32	0.19	17.45
FI	10.48	15.51	70.13	0.21	0.35	0.15	12.80
FR	10.36	18.01	64.64	0.28	0.30	0.13	12.23
GR				0.34	0.24	0.25	
HR	9.33	15.25	57.76	0.22	0.19	0.22	17.83
HU	9.35	16.10	63.97	0.23	0.20	0.16	12.70
IE	10.78	15.37	65.02	0.26	0.37	0.17	8.46
IS	10.49	12.73	82.26				19.77
IT	10.18	17.91	57.23	0.44	0.15	0.16	12.28
LI		10.53					8.38
LT	9.38	14.88	67.13	0.14	0.32	0.18	15.95
LU	11.33	13.25	66.46	0.29	0.35	0.11	7.36
LV	9.29	14.50	67.18	0.17	0.28	0.19	14.22
MT	9.88	13.02	66.28	0.51	0.20	0.15	11.08
NL	10.59	16.65	75.60	0.29	0.31	0.12	10.68
NO	11.13	15.46	75.09	0.24	0.35	0.13	10.54
PL	9.32	17.45	63.98	0.16	0.24	0.21	14.78
PT	9.75	16.16	65.83	0.58	0.19	0.20	14.22
RO	8.94	16.80	62.15	0.30	0.14	0.35	19.56
SE	10.65	16.10	75.23	0.23	0.33	0.12	10.58
SI	9.84	14.54	67.28	0.18	0.25	0.17	11.74
SK	9.57	15.51	63.78	0.15	0.19	0.17	12.83
UK	10.35	17.99	72.12	0.25	0.35	0.14	0.71

Table A1b Characteristics of sending and receiving countries

	Employment Protection Legislation Index	Kaitz Index	Union density	Social expenditure (%)
AT	0.49		27.43	29.45
BE	0.39		52.12	29.46
BG	0.37	40.62	15.75	17.09
CH	0.34		16.01	26.32
CY	0.35		45.46	19.65
CZ	0.65	35.51	13.30	19.50
DE	0.50	41.00	17.55	29.80
DK	0.46		67.99	33.13
EE	0.47	37.77	5.41	15.97
EL		48.30		26.24
ES	0.43	38.21	15.39	24.71
FI	0.32		66.04	30.45
FR	0.45	47.95	8.99	33.88
GR	0.48		21.43	
HR		40.11	24.98	21.55
HU	0.45	43.50	10.25	19.45
IE		43.53	29.73	19.20
IS				23.03
IT	0.40		34.32	29.51
LI				
LT		45.25	8.31	16.47
LU	0.46	47.03	33.32	21.32
LV		43.63	12.97	15.44
MT		44.93	48.83	17.30
NL	0.56	43.34	17.76	29.76
NO	0.45		50.03	26.07
PL		45.58	15.88	19.80
PT	0.61	46.53	17.40	25.77
RO	0.45	39.72	22.67	15.35
SE	0.48		61.64	28.77
SI	0.54	50.18	29.25	23.58
SK		39.06	13.34	18.07
UK	0.37	41.60	24.67	27.34

Table A1c Characteristics of sending and receiving countries

	Flows – sending	Posted receiving	Receive cross- border	Flows – receiving	Posted receiving
AT	13247	37800	30	68870	108216
BE	21355	50409	90	49218	121515
BG	94587	8934	30	7783	3768
CH	15354	2327	0	76362	89589
CY	1714	61	0	0	985
CZ	18988	7853	41	17786	25976
DE	70908	398014	152	589042	306245
DK	18232	3561	7	30823	14848
EE	8519	6009	15	4750	2298
EL	0	3558	0	0	8389
ES	65866	68987	33	97762	52159
FI	12361	2353	2	10407	16690
FR	71877	87131	164	55653	178832
GR	35153	0	0	0	0
HR	41745	21290	21	3103	6499
HU	75872	40759	81	23692	13602
IE	12501	2374	8	4208	5256
IS	2487	135	0	4429	732
IT	117244	82310	29	73270	55948
LI	110	90	0	384	1006
LT	35259	16462	3	10366	2666
LU	3890	39710	4	11899	23289
LV	15169	1745	9	1818	1476
MT	469	163	0	0	1633
NL	43706	18084	23	68512	108782
NO	6572	109	0	25229	17666
PL	207438	184663	144	6533	23316
PT	42178	45281	16	13754	16619
RO	288701	34808	95	0	11384
SE	17398	2421	32	28334	33969
SI	6018	81071	0	2643	5590
SK	26786	57580	118	2598	9780
UK	49888	8126	20	151823	46659

Source: Eurostat (2010-2020), posting.stat (2012-2020) (De Wispelaere et al. 2022a), augmented with external data from EU LFS, ILO EPLEX, and OECD statistics.

Table A2 Summary statistics of Labour Force Survey, 2010-2020

	N	Average	Standard deviation	Minimum	Maximum
Employed	6,883,717	0.9174	0.2752	0	1
Income (decile)	4,783,858	5.47	2.85	1	10
Imputed earnings (euros)	4,783,858	2253.48	1655.24	127	9905
Short-term contract	5,376,141	0.0421	0.2008	0	1
Occupational status (ISEI)	5,770,456	44.97	20.79	11	89
Seasonal sector	6,318,299	0.1500	0.3571	0.0000	1
Female	9,668,337	0.4901	0.4999	0	1
Age	9,668,337	37.55	13.87	17	67
Married	9,668,128	0.4372	0.4960	0	1
Child under 5	9,668,337	0.2190	0.4136	0	1
Child aged 5-14	9,668,337	0.2211	0.4150	0	1
Education: low	9,646,268	0.1901	0.3924	0	1
Education: intermediate	9,646,268	0.5328	0.4989	0	1
Education: high	9,646,268	0.2771	0.4476	0	1
Domicile: big city/suburbs	9,668,337	0.4615	0.4985	0	1
Domicile: town	9,668,337	0.3081	0.4617	0	1
Domicile: rural	9,668,337	0.2304	0.4211	0	1
Did not move last year	9,668,337	0.9958	0.0648	0	1
Origin – Nordic	33,777	0.0401	0.1962	0	1
Origin – Baltic	33,777	0.0244	0.1543	0	1
Origin – Central and Eastern Europe	33,777	0.1473	0.3544	0	1
Origin – Eastern	33,777	0.1351	0.3418	0	1
Origin – South	33,777	0.2239	0.4168	0	1
Origin – West	33,777	0.4293	0.4950	0	1
Residence – Nordic	9,668,337	0.0099	0.0988	0	1
Residence – Baltic	9,668,337	0.0099	0.0988	0	1
Residence – Central and Eastern Europe	9,668,337	0.1590	0.3657	0	1
Residence – Eastern	9,668,337	0.0448	0.2069	0	1
Residence – South	9,668,337	0.1563	0.3632	0	1
Residence – West	9,668,337	0.6201	0.4854	0	1

Source: EU LFS.

