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Published in:
Tijdschrift voor Economische en Sociale Geografie

DOI:
10.1111/tesg.12390

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2020

Link to publication in University of Groningen/UMCG research database

Citation for published version (APA):
de Jong, P., Adsera, A., & de Valk, H. A. G. (2020). The Role of Welfare in Locational Choices: Modelling IntraEuropean Migration Decisions Across the LifeCourse. *Tijdschrift voor Economische en Sociale Geografie*, *111*(2), 163-181. https://doi.org/10.1111/tesg.12390

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THE ROLE OF WELFARE IN LOCATIONAL CHOICES: MODELLING INTRA-EUROPEAN MIGRATION DECISIONS ACROSS THE LIFE-COURSE

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Received: June 2018; accepted September 2019

ABSTRACT

In this study, we add to the literature by investigating the role of welfare states in intra-European migration decisions between 25 countries (2003-2008). Distinguishing between three welfare programmes (unemployment, family and old-age benefits) we tested whether social expenditure on each of these arrangements particularly influenced locational choices of individuals within the age groups covered by the respective welfare policy. Findings from a conditional logit model showed a positive impact of spending on family benefits on the locational choices of young adults moving together with children, and of spending on old-age benefits on the locational choices of individuals close to or above retirement age. In contrast, a negative impact of unemployment spending was found on locational choices in general, and those of working-age adults in particular. Our results highlight the importance of further disentangling the often-used general welfare spending measure when studying the link between welfare and migration.

Key words: welfare state; locational choices; intra-European; migration; life course; conditional logit model

INTRODUCTION

Although international migration is not a new phenomenon and has been taking place at different times and places all over the world (Battistella 2002), it is currently one of the key drivers of population change in Europe (Hierro *et al.* 2012). The heated debate surrounding (economic) consequences of international migration, in a context of increasing globalisation, recent EU enlargements and diversity of EU member states' regulations over immigration issues, has added interest to the subject (Kahanec & Zimmermann 2010). Even more so as the shifting nature of migration, which nowadays includes substantial numbers of intra-European movers and in which many countries are both origin and destination of migrants, is related to different drivers and consequences of these moves (Ludwig & Johnson 2017). The literature increasingly mentions the welfare state as a determinant of migrants' locational choices (Ramos & Suriñach 2017). With the freedom of movement and related migrant's rights currently figuring high on the political agenda throughout Europe, investigating a potential link between migration and the welfare state seems highly relevant.

Central to the literature on the role of the welfare state in migration decisions is the

Tijdschrift voor Economische en Sociale Geografie – 2020, DOI:10.1111/tesg.12390, Vol. 111, No. 2, pp. 163–181.
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'welfare magnet hypothesis': the expectation that migrants are attracted by generous welfare state arrangements (Borjas 1999). Geographical relocation would thus come with specific economic benefits for the individual. So far, the few studies that tested the welfare magnet hypothesis in Europe mainly looked at the correlation between the number of migrants moving to a country and the amount of money spent on the welfare state by the government in that country. Results of these studies have been fairly mixed. Some researchers found a positive association between welfare spending and immigration rates, albeit the economic impact was often moderate (Warin & Svaton 2008; De Giorgi & Pellizzari 2009), whereas others found no evidence that countries with higher social expenditure attracted more migrants (Giulietti *et al.* 2013; Skupnik 2014; Ponce 2018).

Inconsistent findings of previous studies may follow from two defining properties of the existing approach. First, most previous research did not distinguish between migration *towards* Europe and mobility *within* Europe. This is problematic because different migration policies regulate these two forms of migration, and in turn shape migrants' opportunities to access welfare state arrangements. In this study we therefore specifically study intra-European migration. Within the European Union, mobility of EU citizens (as well as that of third country nationals who are long-term residents) is facilitated (EMN 2004). Meanwhile, large differences can be observed between European countries in the total amount of money spent on welfare, as well as the welfare domains they prioritise. By focusing on the role of the welfare state in locational choices of intra-European migrants, we have a natural laboratory to disentangle the true effect of welfare rather than capturing migration (entry) policies (Razin & Wahba 2011).

Second, the welfare magnet hypothesis originally not only addressed selection across alternative destinations, but also within immigration flows (Skupnik 2014). It has been suggested that destinations with more generous welfare states particularly attract migrants benefiting from welfare state arrangements and discourage those who would be net contributors. Some scholars therefore reasoned that generous welfare states will particularly attract migrants with lower levels of education, as they would be most likely to benefit from a generous welfare state (e.g. Brücker *et al.* 2002). Despite this acknowledgment of individual differences in balancing the potential welfare benefit when migrating, so far, the role of the individual life stage has been largely overlooked. This is unfortunate, as the relationship between welfare and the individual changes over the life course. People are generally net receivers of welfare while they are in state-financed education, net contributors while they are working, and once again net receivers when they are retired or require expensive medical services (Legrain 2008). Furthermore, in European welfare states, access to specific welfare state arrangements is partly tied to life course characteristics. We therefore contribute to the literature by investigating the role of welfare generosity in locational choices of migrants in different stages of their lives.

In this study, we reason that if generous welfare state arrangements especially attract migrants who are most likely to access them after arrival, the impact of government spending in different welfare domains should affect migration decisions differently across the life course. To test this hypothesis, we use bilateral migration flow data from the Integrated Modelling of European Migration (IMEM) database, available for the years 2003–2008. We enriched the migration data with country level indicators retrieved from databases of the Centre d'Etudes Prospectives et d'Informations Internationales (CEPII), Migration Modelling for Statistical Analyses (MIMOSA), Organisation for Economic Co-operation and Development (OECD) and the World Bank. Locational choices of individuals who migrated between 25 selected European countries are modelled for the period 2003–2008 using a conditional logit model. Innovatively, we analyse migrants in five age categories representing different life phases. By distinguishing between family, unemployment and old-age benefits, we test whether social expenditure on each of these welfare programmes influenced locational choices of intra-European migrants, and whether this influence is stronger for migrants in the age groups eligible to receive them.

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THEORY

The welfare magnet hypothesis in the context of Europe – In 1999, Borjas published his seminal study in which he hypothesised that immigrants to the United States would cluster in those states where welfare benefits were the highest. His argument was that, since immigrants already accepted the costs of migration, it would cost them little extra to choose the 'right', namely, the most generous state. In his study, Borjas focused on a specific welfare programme: Aid for Families with Dependent Children (AFDC). This way, his work contributed to a longer research tradition studying the impact of welfare benefits on interstate mobility in the US (McKinnish 2007). A popular approach in this literature has been to look at the migration behaviour of single mothers, and compare it to the migration behaviour of a group that is less likely to receive this type of welfare, such as married mothers, women without children, or men. Borjas found that the demographic group most closely linked with the AFDC programme, namely female-headed households with children under 18 years of age, clustered in states with higher AFDC benefits. As this clustering was more pronounced for recent immigrants, Borjas concluded that the theoretical framework was confirmed: immigrants who had just arrived in the US were more sensitive to interstate differences in welfare benefits than natives. The expectation that welfare state arrangements might influence migration decisions became known in the literature as the 'welfare magnet hypothesis'.

Interestingly, the welfare magnet hypothesis has not been put to a test much outside the American context until quite recently. Pedersen and colleagues (2008) presented one of the first studies analysing international migration flows into a broader set of OECD countries. They found that welfare generosity – measured as social expenditure in percentage of GDP – did not exert a significant role in attracting migrants from 129 countries of origin between 1990 and 2000. The authors argued that this finding might be the result of restrictive migration policies that were in place in many OECD countries. Other scholars specifically looked at migration into the EU. De Giorgi and Pellizzari (2009) investigated immigration of individuals in the working ages from outside the EU into the EU 15 between 1994 and 2001.[1] Their analysis showed that the generosity of welfare did influence migration decisions, albeit the effect was very small. Warin and Svaton (2008) tested the effect of social expenditure on migration flows into the EU 15 over the period 1995–2004. The authors concluded that the labour market outlook in the host country was comparatively more important than welfare provisions. However, as long as its effect was not offset by a high unemployment rate in the host country, the level of social expenditure was found to have a positive impact on migrants' locational choices. Giulietti and colleagues (2013) in their analyses distinguished between EU and non-EU migrants. Their findings indicated that, between 1993 and 2008, EU migrants did not react to the level of spending on unemployment benefits in 19 European host countries. Skupnik (2014) looked at the determinants of changes in the stocks of EU migrants in the EU 15 over the years 2004–2011, and concluded that welfare state variables did not affect migration flows when controlling for temporary political restrictions to the freedom of movement. Most recently, Ponce (2018) investigated the relation between total government spending and migration towards Nordic universalist welfare states over the years 1995–2010. His empirical findings showed a negative impact of total government spending on the size of migration flows, which turned positive after controlling for living costs in the destination country. The author concluded that instead of a magnet of generous welfare provisions, high costs of living seemed to discourage migration towards these regions.

As this brief overview illustrates, studies on the relationship between the welfare state and migration for the European context are limited in number, and their empirical findings are mixed. However, because several studies did not distinguish between migration towards Europe and mobility within Europe, different migration policies regulating these two types of movement likely distort the results (Razin & Wahba 2011). Furthermore, these studies generally did not focus on the migration behaviour of a specific welfare-prone group, but rather compared the total number of migrants

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moving to various destinations. In this study we address these gaps in the literature. First, we investigate bilateral migration flows between European countries, thus focusing exclusively on mobility within Europe. As part of the abolishment of borders between European countries, EU citizens as well as non-EU citizens with a valid residence permit from one of the Schengen countries can move freely within the Schengen area (EPRS 2015). Our study context in this way simulates full freedom of movement and locational choices being not affected by migration restrictions set by law. Second, we test whether the influence of welfare programmes on locational choices is stronger for those migrants most likely to access them. Many European welfare state arrangements are targeted at individuals in specific phases of their lives (e.g. family allowances, unemployment benefits, pension systems). This may lead to differential effects of destination countries' welfare generosity for migration decisions of people in different life stages. Yet whether this is indeed the case is so far unknown. Our contribution to the literature is thus, that we investigate the role of welfare state arrangements in intra-European migration decisions by life stage.

Hypotheses – The welfare state literature posits that European countries have different spending priorities when it comes to welfare state arrangements across the life cycle (Kuitto 2011). For example, a country could have a generous pension system, while at the same time providing little support in the case of unemployment. We therefore distinguish three welfare policy areas for which individuals become eligible at various stages of their lives: family benefits, unemployment benefits and old-age benefits (OECD 2016). Family benefits refer to financial support that is exclusively for families and children. This includes child-related cash transfers such as child allowances, but also tax benefits and public spending on services for families with children like childcare and early education facilities. Unemployment benefits are defined as cash benefits for people to compensate for unemployment. Old-age benefits include old-age and survivors pensions, as well as services for the elderly such as day care and rehabilitation services, home-help services and other benefits in kind. We expect social expenditure on each of these arrangements to have a positive influence on the locational choices of individuals within the age groups covered by the respective benefits:

> **H1a:** Higher spending on family benefits has a positive impact on the locational choices of young adults moving together with children.
>
> **H1b:** Higher spending on unemployment benefits has a positive impact on the locational choices of individuals in the working ages.
>
> **H1c:** Higher spending on old-age benefits has a positive impact on the locational choices of individuals close to or above retirement age.

On the other hand, individuals who are not eligible to welfare in a certain domain have less to gain from higher social expenditure in that domain. For them, higher social expenditure may even be associated with higher taxes (Geis *et al.* 2013; Razin & Wahba 2015), or fewer resources devoted to other welfare areas in the destination country (Kuitto 2011). Therefore, we expect no or even a negative effect of higher social expenditure for the age groups that cannot enjoy the associated benefits:

> **H2:** Higher spending on welfare state arrangements that cannot be accessed by individuals, either due to their life stage or other eligibility criteria, has no or a negative impact on their locational choices.

In this sense, *H1c* may be somewhat ambiguous, as old-age benefits like pensions are typically built up over the individual's working life. Individuals who migrate at older ages may therefore not be eligible for this type of benefit in the destination country, or at least partially receive their old-age benefits from the origin country. As such, the weakest effects are expected for this age group.

Other drivers of migration – Besides the welfare state, the extensive migration literature reports other economic, geographical, social/historical and demographic factors that are important for migration decisions (Ramos & Suriñach 2017). Such drivers of migration are taken into account in our study. Income prospects are generally considered as a key driver of migration decisions (e.g. Kennan

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& Walker 2011). Unemployment rates form another important economic factor, as the expected income after migration not only depends on the average wage in the destination country, but also on the likelihood of being employed (e.g. Docquier *et al.* 2014). Factors that lower the costs of migration, such as geographical and cultural closeness, are also expected to influence locational choices (e.g. Beine *et al.* 2011). In addition, the size of the general population in the destination country is sometimes considered, as a larger population may offer more connections, more opportunities, and more widely available information that may serve to reduce the migration costs (e.g. Davies *et al.* 2001). Migration theories further recognise previous migration flows to the destination country as an important factor in migration decision-making. Already settled migrants may function as 'bridgeheads', reducing the risks and costs of subsequent migration and settlement by providing information and support (e.g. Massey 1998). Finally, migration policies likely affect the migration decision, as they can constrain people's individual choices (e.g. Mayda 2010). As we focus on intra-European migration, freedom of movement is ensured between the countries in our sample through regulations of the European Union or Schengen area. However, some countries in our sample only joined the EU in 2004, resulting in a changed policy context within the period under study. In addition, the 2003 Accession Treaty allowed EU member states to restrict access to the labour market in the host country for migrants from eight of the 10 countries that joined the EU in 2004 (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia, referred to as the EU 8) during a seven-year transitional period (European Commission 2011).[2] Due to these so-called 'transitional arrangements', these migrants initially needed a special work permit. Between 2004 and 2011, EU member states opened their labour markets to these workers at different stages. Such transitional restrictions may have directed migration flows towards the countries that immediately allowed free access to the labour market and are therefore included in our study.

DATA AND METHODS

Analytical approach – According to more economic (rational choice) theories, migrants are expected to select the destination country with the highest returns after accounting for migration costs. As such, locational choices can be seen as the outcome of a comparison of a set of countries (i.e. the 'choice set') on a number of relevant attributes. Some attributes will make an individual more likely to select a country as his or her destination, whereas the opposite may be the case for other attributes. Discrete choice analysis aims to estimate these impacts on the probability that an individual will select a particular location from the observed choices and characteristics of the countries in the choice set (Hoffman & Duncan 1988; McFadden 2002). This way, the focus of the approach differs from gravity models, which instead aim to explain the size of migration flows towards a destination (Anas 1983; Mishra *et al.* 2013; Ramos & Suriñach 2017; De Mello-Sampayo 2017). In this study we use a conditional logit model to investigate the impact of social expenditure on locational choices of intra-European migrants. Conditional logit models have been used to analyse micro-level migration data (e.g. De Giorgi & Pellizzari 2009), yet can also be used for country-to-country migration flows (Davies *et al.* 2001; Cushing & Poot 2004). Using this type of data, the size of the flows represents the number of individual moves. Characteristics of the countries in the choice set are subsequently used to explain the observed moves, whereby the estimated coefficients provide information about the relative value that individuals place on the various characteristics.

Identification strategy – In our statistical model, an individual originating from country i faces a choice among D alternative European destination countries. For the purpose of this study, we assume that the decision to migrate has already been taken, and the only choice to be made concerns the country of destination.[3] The utility of choosing area d for this individual is:

$$U_{id} = \beta' X_{id} + \varepsilon_{id}, \quad (1)$$

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where X_{id} is a vector of alternative-specific attributes that will affect individuals' location choices and ε_{id} is the error term. Each parameter in vector β corresponds to an alternative-specific characteristic, for which the impact on location choices is held constant across alternatives. The individual migrant chooses destination d if the utility U_{id} is the highest among all D choices. The statistical model for the probability of moving from area i to area d can be represented as:

$$P\left(\frac{\mathrm{d}}{\mathrm{i}}\right) = P\left(U_{id}\right) = \max\left(U_{i1,}U_{i2},\ldots\ldots U_{iD}\right). \quad (2)$$

Assuming that the random utility components are independent and identically distributed according to a Weibull distribution (McFadden 1973), the probability of an individual migrant from country i choosing destination d can be rewritten as:

$$P(\mathrm{d/i}) = \frac{e^{\beta' x_{id}}}{\sum_{j=1}^{D} e^{\beta' x_{ij}}} = P\left(m_{id}=1\right) \quad \text{if } \mathrm{i} \neq \mathrm{j}. \quad (3)$$

Note that our conditional logit model requires estimation using $N \times D$ observations, where N is the total number of individuals moving from all origins and D the number of alternatives. With 25 origin countries and 24 potential destination choices (excluding the current country of residence), the log-likelihood function is:

$$lnL = \sum_{i=1}^{25}\sum_{j=1}^{25} N_{ij} lnP\left(m_{ij}=1\right), \quad \text{if } \mathrm{i} \neq \mathrm{j} \quad (4)$$

where N_{ij} is the number of people moving from country i to country j and $P(mij = 1)$ is given by (3).

The identification of a conditional logit model comes from comparing the same individual faced with different alternatives, in this case the countries in the choice set. This has two important implications. First, only independent variables describing the attributes of the destination countries (including those origin-destination specific) can directly enter the model.[4] Characteristics of the origin country, year of migration, and individual characteristics (like age) on the other hand do not vary across alternatives, and therefore fall out of the probability function described in Equation (3). Second, a conditional logit model needs interaction terms to investigate whether the impact of some of the alternative-specific characteristics varies with individual characteristics (Christiadi & Cushing 2007). To test our hypotheses, we therefore estimate interaction effects between the dummy variables indicating the age group of individuals and the social expenditure measures. Comparing the estimated interaction coefficients allows us to see whether the effects of spending on particular welfare state arrangements on the locational choices of migrants differ between age groups.

Data – In our analyses, we use bilateral migration flow data from the Integrated Modelling of European Migration database (IMEM). This database contains the posterior distribution of the harmonised migration flows between 31 EU and European Free Trade Association (EFTA) countries and the rest of the world (the latter discarded here) between 2002 and 2008. The posterior distribution has been created by combining available data on migration, covariate information and expert knowledge within a statistical model.[5] To our knowledge, IMEM is the only database providing complete information on bilateral migration flows covering all European countries together with information on the age of these migrants. The age composition is an important feature of the data, since we aim to investigate whether different effects can be observed for migrants in different age groups, representing different life stages. The IMEM data do not allow further disentangling individuals by nationality or country of birth, and thus cover intra-European moves of both European and non-European citizens. For intra-European mobility as studied here, non-EU citizens with permanent residence enjoy similar rights as those with EU citizenship. However, it is possible that the impact of the welfare state on locational choices of people

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relocating within Europe differs between those with a European and non-European origin. Although we have no theoretical reasons to expect large differences, we cannot estimate them with the data but will reflect on this further in the discussion section.

In the analyses, 25 European countries are included: 22 of the 27 countries that were members of the European Union in 2008 (Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, the Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden and the United Kingdom), and three non-EU countries within the Schengen area (Iceland, Norway and Switzerland). Bilateral migration flows between these 25 countries are analysed for all years between 2003 and 2008. For the purpose of this study we supplemented the migration data with country level indicators found to be relevant by previous migration research, which were retrieved from databases of the CEPII, MIMOSA, OECD and the World Bank. All variables are time-varying and when indicated lagged by one year. As a result of missing data on at least one of the indicators, the following countries (although members of the European Union or Schengen area) could not be included in our final analyses: Bulgaria, Cyprus, Liechtenstein, Lithuania, Malta and Romania. As migration flows from and towards Cyprus, Liechtenstein and Lithuania are comparatively very small, including them likely would not have affected our main results. Bulgaria and Romania on the other hand are characterised by considerable intra-European migration since their EU accession in 2007. The data we have at hand do not cover the period following this accession (but only up to 2008), so even if the data would be at hand, we could not have studied these countries properly. Having said that, it would have been interesting to study these countries. In the discussion section we reflect on the extent to which our data are generalisable to other periods and countries.

Variables – Within the IMEM migration data we distinguish between individuals moving in five age categories representing different stages of the life course: (i) children under 15 years of age, who likely migrated with their family; (ii) adolescents and young adults aged 15–25, who are either studying or early in their careers; (iii) migrants aged 25–40, who are the most likely to have or start a young family; (iv) migrants aged 40–60, for whom work and family life have likely stabilised; and (v) migrants above 60 years of age, who are close to or above the legal retirement age. Although migrants in the first age category are too young to make their own locational choices, we include them in the analyses as a separate category to observe the choices of their caretakers. Although we recognise that this in a way results in a double representation of the choices of caretakers in the model, we deem this is the most accurate way to grasp the impact of moving together with children on locational choices in this type of macro-level data.

Like most scholars investigating the relation between the welfare state and migration across Europe, we rely on government spending on social provisions to measure welfare state generosity, due to the availability, (relative) comparability and variation of these data across countries and time. However, we supplement the aggregated measure of social expenditure with measures of expenditure in three policy areas: family, unemployment and old age. Data on social expenditure for each of the years under study are obtained from the OECD database (2016) and expressed as a percentage of the gross domestic product (GDP). Although the OECD database also includes information on expenditure in additional areas (e.g. 'incapacity related' and 'housing'), we choose these three domains because of their clear link to specific phases of the life course. To account for issues of reverse causality we use lagged terms, capturing social expenditure one year before migration.

In the literature, GDP per capita in each destination is usually treated as an adequate measure of income prospects of potential migrants (e.g. Beine *et al.* 2016). In our study, annual information on GDP per capita (in thousands of US dollars) from the World Bank (2017) is included. The unemployment rate in our study captures the percentage of the total labour force in the country of destination that was unemployed in the year prior

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to migration according to figures of the World Bank (2017). The distance indicator reflects the absolute distance between the capital cities of two countries in hundreds of kilometres. The common border variable indicates whether two countries had shared borders (1) or not (0). Both variables are retrieved from the GeoDist database of CEPII (Mayer & Zignago 2011). The language variable indicates the closeness of two different native languages along a continuous index ranging from 0 to 1, where higher values represented greater closeness. The variable is obtained from the Language database of CEPII, and considers whether countries share a common official language, a common native language and the linguistic proximity of two languages (Melitz & Toubal 2014). Population size in millions is included as a proxy for the number of locations and for network and creative opportunities available at the destination country (World Bank 2017). Due to missing values for several origin–destination country pairs we could not include information on the size of the specific migrant groups in each of the destination countries. Instead, we use the percentage of EU born migrants within the population of the destination country lagged one year as a proxy of the migrant network, retrieved from the MIMOSA database (MIMOSA 2008). We further include the lagged percentage of all migrants in the total population living in the destination country. The dummy variable on restrictions indicates for each year between 2003 and 2008 separately whether migrants from a specific origin country had legal access to the labour market of a destination country (0), or that restrictions applied to these migrants over that whole year (1). Such restrictions followed from either the origin or the destination country not being a member of the EU yet, or from the transitional arrangements introduced in some EU member states to temporarily protect their labour markets against large influxes of migrants shortly after the EU enlargement.[6] Finally, in order to study any other unobserved characteristics of the destination country, destination country fixed effects (FE) are included in some of our models.

RESULTS

Descriptive statistics – Figure 1 describes for each of the 25 countries in the sample the total number of immigrants coming from the remaining 24 countries by year. Between 2003 and 2008, the number of immigrants was highest for the UK, Germany and France. Although the numbers clearly differed between the countries in our sample, bilateral flows always exceeded zero with one exception: the bilateral migration flows between Slovenia and Estonia in 2003.

Table 1 displays the descriptive statistics of the country level variables for the years between 2003 and 2008 grouped together. As becomes clear from these figures, old-age benefits made up the largest share within all social expenditure, whereas social expenditure on family or unemployment benefits represented much smaller shares of the GDP. Figure 2 portrays the distribution of the levels of social expenditure by country and year. Over the period under study, variation occurred between countries in both the total level of government spending on welfare as a share of the GDP, and spending on the different welfare domains. Of the three welfare domains, differences between European countries were the largest for old-age programmes.

Conditional logit models – Migration researchers often have little information about the representativeness of their parameter estimates over time (Davies *et al.* 2001). To investigate the stability of our parameter estimates, we started by estimating the model for the six consecutive years (2003–2008) separately. This way, all parameters were free to vary across time. Results appeared relatively stable over time and no substantive differences were observed in the effects of our main variables of interest. Therefore, we present results of a pooled model that covers all years under study (full details of all models available upon request from the first author).

Table 2 presents the parameter estimates of the first six conditional logit models. In the first model (column (1)) we included economic, geographical, social/historical and

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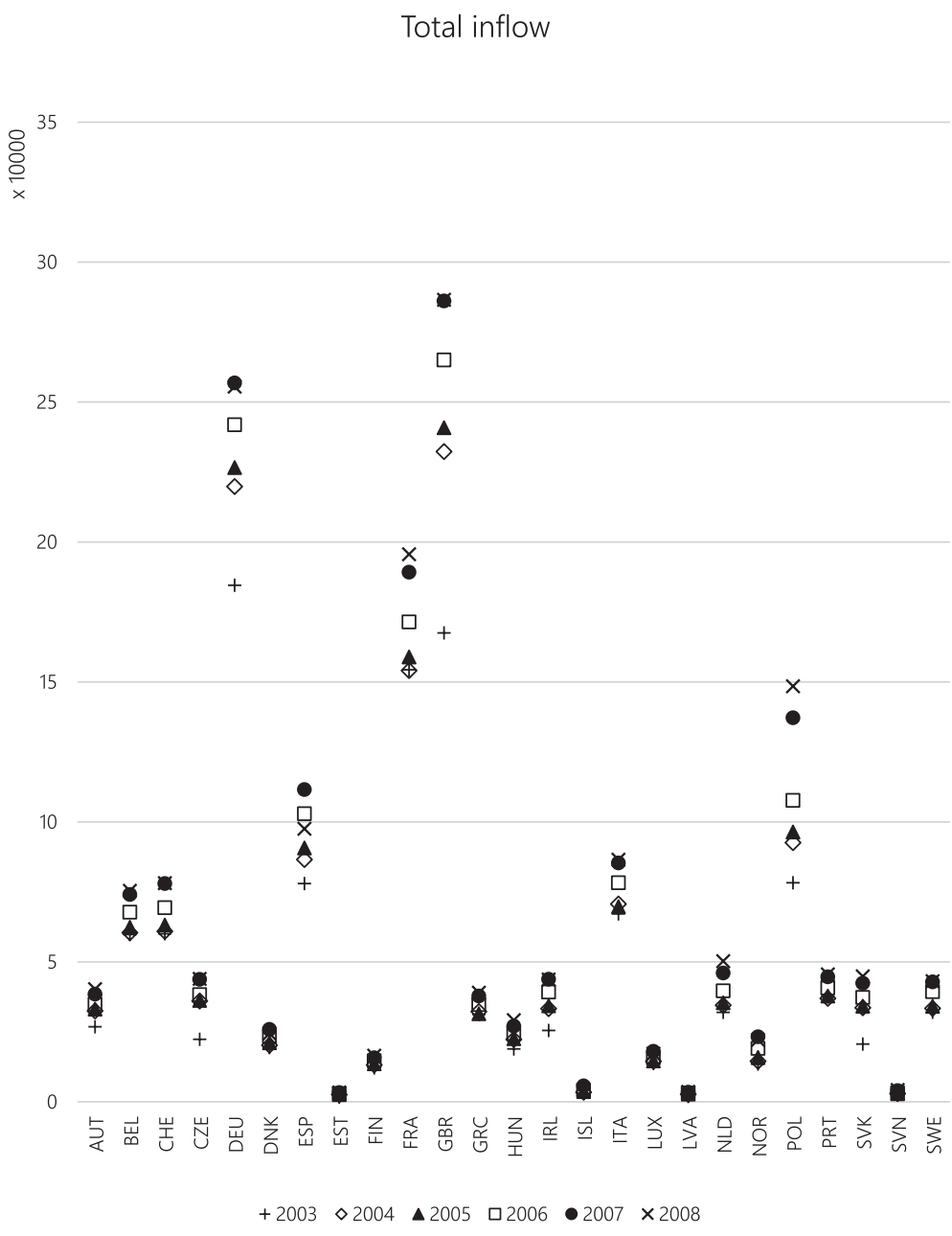

Figure 1. *Immigration from the 25 countries in the study by country of destination and year (absolute numbers).*

demographic drivers of migration. In line with what we expected, GDP per capita in the destination country had a positive and significant effect, indicating it acted as a pull factor. Furthermore, the effect of the unemployment rate in the destination country one year before migration was negative and significant, indicating a preference of migrants for countries where the unemployment rate was lower. The results show that intra-European migrants were less likely to choose countries with a larger share of migrants in the population, yet controlling

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Table 1. *Descriptive statistics country-level variables 2003-2008.*

	Mean	Std. Dev.	Min	Max
GDP per capita (t-1)[a]	32.21	19.24	4.03	102.52
Unemployment Rate (t-1)	7.36	3.67	2.25	19.90
Population Size[b]	18.86	23.33	0.29	82.53
Distance[c]	1.06	0.64	0.06	2.89
Common Border	0.28	0.45	0.00	1.00
Language Similarity	0.32	0.21	0.09	0.88
Migrant Population (t-1)[d]	10.51	6.71	1.75	34.27
EU Migrant Population (t-1)[d]	4.37	5.38	0.61	27.84
Spending Total (t-1)[e]	20.84	4.25	11.05	28.69
Spending Family (t-1)[e]	2.21	0.82	0.91	3.79
Spending Unemployment (t-1)[e]	0.89	0.70	0.00	3.23
Spending Old-Age (t-1)[e]	7.23	2.23	2.21	11.51

Notes: [a]In thousands of US dollars.
[b]*In millions.*
[c]*In thousands of kilometers.*
[d]*As a percentage of the destination country's population.*
[e]*As a percentage of GDP.*

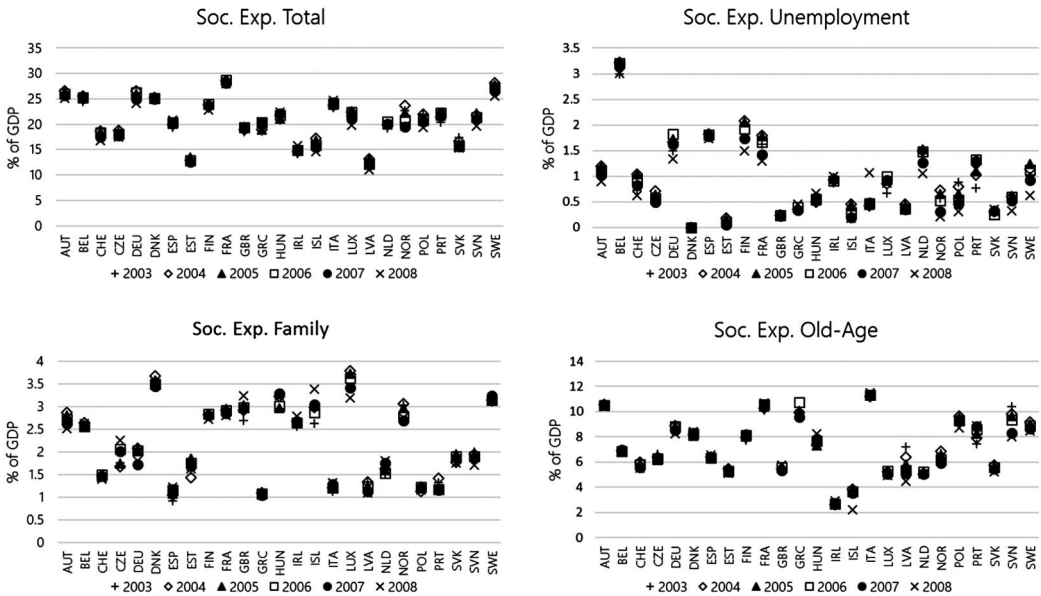

Figure 2. *Variance in total social expenditure and social expenditure on unemployment, family and old-age benefits: distribution by country and year.*

for migrant stock they were more likely to choose countries with larger shares of EU migrants. This is possibly the result of a migrant network effect via which origin and destination are connected. As expected, the probability of choosing a certain destination increased when the country was closer to the origin country, when it concerned a neighbouring country and when its language was more similar to that of the origin country. Furthermore, migrants were more likely to select a destination country with a larger (total) population.

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Table 2. *Conditional logit models (2003–2008): estimated coefficients.*

	(1)	(2)	(3)	(4)	(5)	(6)
GDP p.c. (t-1)	0.00337***	0.00837***	0.000980***	0.00143***	–0.000305	0.000366*
	(0.0000406)	(0.0000419)	(–0.00018)	(0.000178)	(0.000180)	(0.000182)
Unemp. (t-1)	–0.0173***	–0.00838***	–0.0354***	–0.0344***	–0.0309***	–0.0332***
	(0.000151)	(0.000149)	(–0.00034)	(0.000310)	(0.000329)	(0.000356)
Pop. Size	0.0304***	0.0330***	0.0152***	–0.0176***	0.0155***	0.0222***
	(0.0000140)	(0.0000151)	(–0.00132)	(0.00133)	(0.00126)	(0.00134)
Distance	–0.776***	–0.796***	–0.795***	–0.794***	–0.795***	–0.795***
	(0.000901)	(0.000893)	(–0.00098)	(0.000975)	(0.000975)	(0.000975)
Com. Border	0.458***	0.535***	0.698***	0.698***	0.698***	0.698***
	(0.000979)	(0.000996)	(–0.00113)	(0.00113)	(0.00113)	(0.00113)
Lang. Sim.	0.574***	0.411***	0.372***	0.376***	0.372***	0.372***
	(0.00231)	(0.00238)	(–0.00262)	(0.00262)	(0.00262)	(0.00262)
% Mig. (t-1)	–0.0477***	–0.0440***	–0.0250***	–0.0237***	–0.0132***	–0.0238***
	(0.000137)	(0.000129)	(–0.00196)	(0.00195)	(0.00199)	(0.00196)
% EU Mig. (t-1)	0.0283***	0.0170***	0.0378***	0.0304***	0.0318***	0.0391***
	(0.000187)	(0.000184)	(–0.00312)	(0.00312)	(0.00313)	(0.00313)
Restrictions	0.126***	0.142***	0.313***	0.323***	0.313***	0.313***
	(0.00118)	(0.00118)	(–0.00136)	(0.00137)	(0.00136)	(0.00136)
Soc. Exp. Total (t-1)		–0.0488***	0.00898***			
		(0.000113)	(0.00083)			
Soc. Exp. Family (t-1)				0.307***		
				(0.00380)		
Soc. Exp. Unemp. (t-1)					–0.0840***	
					(0.00313)	
Soc. Exp. Old Age (t-1)						–0.00874***
						(0.00208)
Destination FE	NO	NO	YES	YES	YES	YES
pseudo R^2	0.1827	0.1861	0.2201	0.2202	0.2201	0.2201

Notes: Standard errors in parentheses, $*p < 0.05$, $**p < 0.01$, $***p < 0.001$. Each column is a separate model with interactions of specific spending measures and age groups. All controls in Table 2 included. The total migration flow size is 211,168,704.

Over the years under study, the variable capturing labour market restrictions yielded a positive effect, indicating that migrants more often chose a country where they needed a special work permit to enter the labour market. To explain this rather unexpected and counterintuitive result, we looked back at the year-specific analyses. These findings show that prior to 2006 migrants were less likely to move to countries where they had limited access to the labour market. During this phase, only three member states (Ireland, UK and Sweden) opened their labour markets for EU 8 workers. From 2006 onwards, EU 8 migrants gradually gained free access to the labour markets in eight more member states (Greece, Spain, Portugal, Finland, Italy, the Netherlands, Luxembourg and France). With the restrictions being abolished in most countries during this latter phase of our observation period (2006–2008) our variable seems to capture increased migration flows from the new member states into the EU 15 in anticipation of unrestricted labour market access over the following years.

We subsequently included the variable capturing total social expenditure in the destination country a year before migration (column

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(2), Table 2). The coefficient was significant and negative, indicating that migrants were less likely to move to countries that spent a larger share within the GDP on the welfare state. The negative impact of total government spending on locational choices is in contrast with the welfare magnet hypothesis. As the pull effect of GDP per capita on locational choices increased when taking social expenditure into account, higher tax rates (Ruyssen *et al.* 2014) or costs of living (Ponce 2018) in (rich) countries with generous welfare systems may explain this finding. Alternately, our findings could be explained from countries with a more generous welfare state – for example the Scandinavian countries – often having a more regulated labour market, which makes it more difficult for migrants to enter. To capture these potential institutional differences and any other unobserved characteristics at the country level, destination country fixed effects (FE) were included in the model (column (3)). Social expenditure in this model was positively associated with locational choices. The negative coefficient of social expenditure (column (2)) thus appears to be due to omitted country-level characteristics that affected the level of expenditure.

In the next three models (Table 2, columns (4)–(6)) we included more specific measures of social expenditure devoted to family, unemployment and old-age programmes. Spending on family programmes was positively associated with locational choices of intra-European migrants, whereas smaller and negative impacts were found for spending on unemployment benefits and old-age. When including social expenditure on family benefits, the positive impact of population size on locational choices turned negative (column (4)). Furthermore, when including social expenditure on unemployment benefits in the model, the positive impact of GDP per capita on locational choices became negative (column (5)). These changes indicate that social expenditure data are associated with other characteristics of the country, such as the demographic composition of the population and its economic situation. In the discussion section we further elaborate on the implications of this for our findings.

To test whether the effect of welfare differed across life stages, in a next step (Table 3) we included interaction terms for each of the welfare generosity measures with the five age categories. Table 3 only presents the estimated coefficients of the social expenditure measures for the different age groups, which are our key variables of interest. Other effects were similar to the ones reported in Table 2 (with the destination country FE). Chi-square tests showed that the coefficients of the interaction terms differ significantly between age groups for each type of welfare spending.

We expected higher social expenditure on welfare state arrangements to have a positive impact on locational choices for individuals within the age groups covered by the respective programmes. In Table 3 (column (1)) we

Table 3. *Conditional logit models (2003–2008): estimated coefficients of social expenditure variables by age group.*

	(1)	(2)	(3)	(4)
	Soc.Exp. Total (t-1)	Soc.Exp. Fam (t-1)	Soc.Exp. Unemp (t-1)	Soc.Exp. Old (t-1)
Under 15	0.0199***	0.421***	–0.0444***	–0.00562**
	(0.00086)	(0.00398)	(0.00335)	(0.00212)
Age 16–25	0.0172***	0.387***	–0.114***	–0.0158***
	(0.00085)	(0.00391)	(0.00328)	(0.00211)
Age 26–40	–0.00358***	0.361***	–0.139***	–0.0370***
	(0.00083)	(0.00384)	(0.00317)	(0.00209)
Age 41–60	0.0135***	0.106***	–0.0190***	0.0282***
	(0.00085)	(0.00391)	(0.00326)	(0.0021)
Over 60	0.0406***	–0.0188***	0.124***	0.0939***
	(0.00091)	(0.00425)	(0.00364)	(0.00219)
Destination FE	YES	YES	YES	YES
pseudo R^2	0.2204	0.2218	0.2209	0.2209

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see a positive impact of total welfare expenditure on locational choices for all but one age group: adults early in their working lives, who are likely the main net contributors to sustain the welfare state. We subsequently estimated age-specific effects for the different welfare domains (Table 3, columns (2)–(4)). Migrants in the younger age categories more often selected destination countries that spent more on social services for families. This is consistent with *H1a*, as those migrants are the ones most likely to benefit from this type of welfare policy. We also found a positive impact of social expenditure on old-age benefits on locational choices of migrants in the oldest two age categories, which confirms *H1c*. However, in contrast with *H1b*, estimates of the second model indicated that individuals in the early working ages were the least likely to move to countries with higher spending on unemployment benefits. This finding is net of differences in unemployment levels at destination countries, which should automatically inflate the share of that type of expenditure over GDP.

We further expected a non-significant or negative impact of higher social expenditure for individuals who are less likely to access these welfare state arrangements (*H2*). In line with this hypothesis, social expenditure on old-age benefits had a negative impact on locational choices of migrants in the younger age categories. Also confirming *H2*, migrants above 60 years of age were the least likely to move to countries that spent more on family benefits. This could indicate that higher expenditure on family benefits is associated with a higher tax burden for this age group, or less resources devoted to old-age benefits. However, in contrast to *H2*, spending on unemployment benefits had a positive impact on migration behaviour of the oldest migrants.

ROBUSTNESS CHECKS

A conditional logit model assumes independence from irrelevant alternatives (IIA), which implies that the probability ratio of individuals choosing between two alternatives should not depend on the availability or attributes of the other alternatives. Earlier studies reported that findings from conditional logit models are qualitatively very similar to models that relax the IIA assumption (Dahlberg & Eklöf 2003; Train 2003; Christiadi & Cushing 2007), and that the preferred modelling technique thus depends on the research question (see e.g. Train 2003). In our study we aimed to understand individuals' average preferences rather than predicting how the preference for a destination may change depending on the characteristics of other available destination countries. For this purpose, violating the IIA assumption is less of an issue (Train 2003) and a conditional logit model is a useful analytical strategy. Nevertheless, to validate our findings we follow Hausman and McFadden (1984), who note that if IIA is satisfied, the estimated coefficients should be stable across choice sets. To check for potential violations of IIA, we therefore re-estimated our models 25 times, each time dropping one of the destinations. Overall, the coefficients were comparable across these samples, suggesting that the IIA property was not seriously violated in our data. However, when Germany and the UK were dropped, the effect of total spending went in the opposite direction than reported before. On the one hand, this may indicate that the positive impact of total social expenditure on locational choices of intra-European migrants is driven by the largest migration flows in our dataset. At the same time, it seems likely that this simply points to the fact that the expenditure measure captures different domains of spending and other unobserved characteristics, as indicated in our analyses. This could also explain why previous studies using the generic total spending measure reported such mixed results. Applying the same procedure to the models including social expenditure in the distinct welfare domains, the coefficients were robust for family and unemployment benefits. The much weaker effect we found in our main analyses for old-age benefits in six cases turned non-significant or yielded a negative effect for the oldest age group when a country was removed from the sample.

A conditional logit model aims to explain choice behaviour from the characteristics of both the accepted and rejected alternatives in a person's choice set. Yet whether a person

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chooses to move to let's say France or Spain, his/her age, year of migration and origin country remain the same. Because of this, these variables cannot enter the conditional logit model directly. To explore the influence of these additional factors on our results, we estimated logistic regressions which simulated the conditional logit models by including each individual 24 times: once for the destination that was actually selected, and 23 times for the remaining alternatives in the choice set. This way, fixed effects of destination, origin, year and age could be estimated as a robustness check. Findings of these logit models were all consistent with those of the conditional logit models presented in the results section before.

A final robustness check was done to see whether our findings would change when all variables in our models were allowed to vary with age. For this we estimated distinct models for each of the five age categories. Age group-specific effects of total social expenditure, as well as those of social expenditure on family, unemployment and old-age in these models without destination country FE were all comparable to those presented in Table 3.

DISCUSSION

With this study we aimed to investigate the role of welfare generosity in locational choices of migrants moving between European countries in different life stages. We expected higher social expenditure on welfare state arrangements to have a positive impact on locational choices for individuals within the age groups covered by the respective programmes. On the other hand, we expected a non-significant or negative impact of higher social expenditure for individuals who are less likely to access these welfare state arrangements. When we controlled for unobserved variation by means of destination country fixed effects, our empirical analyses showed a positive impact of total social expenditure on locational choices for all age groups except adults early in their working lives. This finding is consistent with our theoretical reasoning, as these individuals are most likely to be net contributors to the system. We further estimated the effects of government spending on family, unemployment and old-age benefits separately for migrants in different age groups. Our findings showed that the impact of social spending in specific welfare domains on locational choices varied across age groups, and were partly in line with our hypotheses.

Consistent with our first hypothesis, young adults moving together with children moved more often towards countries where the government spent more on family benefits. Furthermore, migrants in the oldest age groups more often selected countries with higher social expenditure on old-age benefits. In contrast, younger migrants were less likely than migrants above 60 to move towards countries that spent more on welfare support for the elderly, whereas migrants in the older age groups were less likely to move towards countries that spent more on family benefits. These findings are in line with our second hypothesis, and may indicate that when a person is not eligible to welfare in a certain domain, higher social expenditure in that domain is associated with higher costs (Geis *et al.* 2013; Razin & Wahba 2015) or fewer resources devoted to other welfare areas in the destination country (Kuitto 2011). Contrary to our expectations, spending on unemployment benefits had a negative effect on locational choices of migrants in the working ages, whereas the effect was positive for migrants outside the working ages. On the one hand, this finding might follow from young adults being less likely to be entitled to generous unemployment benefits due to limited experience on the labour market. Alternatively, although we controlled for unemployment rates in the destination country, higher spending on unemployment benefits might indicate less stability on the labour market – a factor particularly crucial for migrants at the beginning of their work career. Thus, social expenditure in this domain may reflect the economic situation in the destination country rather than the generosity of unemployment benefits. This also possibly explains why GDP per capita no longer had a positive impact on locational choices after social expenditure on unemployment benefits entered the model. Future studies could take this further and look more into the signalling effect that spending on unemployment may have for locational choices of these younger migrants in particular.

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Following the existing European literature on the welfare magnet hypothesis, in this study we used measures of social expenditure as indicators of welfare generosity. However, as the findings on unemployment benefits indicate, social expenditure not necessarily reflects the generosity of welfare state arrangements, but rather reveals the level of government interference in specific societal domains. Our results may indicate that such government interference is evaluated positively by migrants in the working ages when it comes to the family domain, whereas it is evaluated negatively in the domain of unemployment and old-age. Alternatively, rather than an indicator of generous welfare programmes, higher government spending might be a reaction to certain societal developments, such as an insecure labour market or an aging population. After all, expenditure on social benefits is highly dependent on the size of the population in need (Caminada *et al.* 2010). Higher social expenditure on old-age benefits for instance may indicate a relatively old age structure of the destination country. This could be perceived negatively by migrants in the different age groups, yet in particular by migrants in the working ages. The locational choices of migrants subsequently may be explained by these societal developments rather than by welfare spending as such. Our study clearly shows that using social expenditure measures, as is commonly done in this field of research, it is not possible to fully disentangle these effects. By estimating age-specific relations we revealed the importance of testing the relation between migration and the welfare state in a more targeted way and paying attention to varying needs and interests of individuals over the life course. Future research should address this issue further using more precise indicators of welfare generosity, such as social rights (Scruggs 2007) rather than generic spending measures.

In our study we did not include the option of staying in the country rather than migrating for a range of theoretical and pragmatic reasons. First, we follow the theoretical reasoning of Borjas (1999), who claims that welfare would attract migrants because the costs of choosing the 'right' country are low once the decision to migrate is made. This reasoning assumes that a person first decides whether to move, and subsequently decides where to move. Second, due to data availability, in our study we were unable to include all possible destination countries available to individuals. This means that individuals who did not move to one of the other countries in our sample did not necessarily stay in the origin country, but could have moved to another region of the world. Because of this, it is unclear how the sample of non-migrants should be defined. Finally, Rivero-Fuentes (2005) compared three types of conditional choice models using the same data on internal migration in Mexico. In her study, models treating the probability of out-migration and the choice of destination as two different processes yielded more reliable results than a model assuming that the decision to migrate and the choice of destination are made simultaneously. For these reasons, we restricted our sample to individuals who migrated between the 25 selected European countries. However, one could also argue that the decision regarding whether to move should not be separated from the decision regarding where to move (Davies *et al.* 2001). Future studies could therefore expand on our work and consider also stayers in the analyses. This could answer complementary research questions but would also call for a different design, data requirements and analytical approach.

Third, in this study we distinguished migrants in different age groups as an indicator of their opportunities to access family, unemployment and old-age benefits. However, life stage is a necessary, yet not always sufficient condition for welfare access (Clasen & Clegg 2006). Family allowances often are a universal benefit available to all families with under-aged children, whereas unemployment benefits largely depend on paid contributions. Some old-age benefits, like pensions, further are typically built up in the country of residence over time. In addition, the legal retirement age varies across Europe: for instance, in 2003, the legal retirement age was 60 in Belgium versus 67 in Norway (Scruggs *et al.* 2018). In sum, migrants who move in the life stages addressed by these different welfare state arrangements are not necessarily able to access them in the destination country directly upon arrival. Nevertheless, these

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migrants are still most likely to benefit from generous arrangements compared to those who do not meet this first categorical requirement. Related to this issue, although healthcare is yet another interesting welfare domain which can be linked to the life cycle, we did not include social expenditure on health, on the one hand because health care needs of individuals may vary substantially, and on the other hand because large differences exist in the way healthcare is organised across Europe (Wendt *et al.* 2009). In some countries healthcare is mainly financed through (private) social insurance, whereas costs of healthcare in other countries are covered by taxes. Mapping these differences in institutional and organisational features for the countries in our study is beyond the scope of our work, yet investigating the impact of such differences on locational choices would be an interesting direction for future research.

Finally, in our study we covered all those who are mobile within Europe without making an explicit distinction by whether the person has an EU or non-EU origin. Data limitations prevented us from making this further subdivision which could be interesting for future studies once data may come available to do so. The same holds for the fact that we could not yet include recent developments in migration flows such as those related to Romania and Bulgaria. Future work may be able to cover these different dimensions further, therewith also testing the extent to which our findings are stable or subject to change over time or for specific groups.

Findings of previous studies on the link between welfare spending and migration have been rather mixed: some studies found no support for an attracting impact of higher social expenditure (Giulietti *et al.* 2013; Skupnik 2014) whereas others revealed a (small) positive effect (De Giorgi & Pellizzari 2009). In addition, several scholars found the impact to vary with other variables such as unemployment rate (Warin & Svaton 2008), costs of living (Ponce 2018) or migration policies (Razin & Wahba 2011) in the destination country. With this study we add to this literature by focusing on migration within the open mobility regime of the EU. In addition, we distinguished between three different social domains and estimated effects for individuals in five age categories separately. As we showed that the effects of government spending on welfare state arrangements vary for migrants across the life course, our study helps explaining the inconsistent findings of previous studies which mainly focused on the size of migration flows rather than their composition. Furthermore, our findings indicate that a generic measure as welfare spending is rather uninformative, not only because it captures many different aspects of welfare but also because it is associated to other country characteristics. Only when disentangling this measure in its different parts we are able to understand the true processes behind them. Finally, we can conclude that the impact of welfare state arrangements on locational choices depends on how migrants are affected by them after settlement. Future studies should elaborate on this insight and investigate which aspects of the welfare state are most relevant to migrants in different phases of life.

Acknowledgments

This work is part of the MobileWelfare project supported by NORFACE Grant 462-14-150. Previous versions of the paper were presented at the European Consortium for Sociological Research conference, Milan, September 2017, and the Pan-European Conference on International Relations, Barcelona, September 2017. The authors would like to thank the two anonymous reviewers for their helpful suggestions.

Notes

1. EU 15 refers to the 15 member states of the EU prior to EU enlargements since 2004: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the UK.
2. No such restrictions were in place for two of the new member states, Cyprus and Malta.
3. Arguments for this assumption are discussed in the discussion section.
4. As the option of staying in the origin country is not included in the choice set, all alternatives are automatically compared to the individual's origin country. A model including the variables as difference scores between origin and destination would therefore yield identical results.

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5. For the methodology of producing the harmonised flow tables, see Raymer *et al.* (2013).
6. Detailed information on the timing of these transitional arrangements is included in the Appendix.

REFERENCES

Anas, A. (1983), Discrete Choice Theory, Information-theory and The Multinomial Logit And Gravity Models. *Transportation Research Part B-Methodological* 17, pp. 13–23.

Battistella, G. (2002), International Migration in Asia vis-à-vis Europe: An Introduction. *Asian And Pacific Migration Journal* 11, pp. 405–414.

Beine, M., S. Bertoli & J.F.H. Moraga (2016), A Practitioners' Guide to Gravity Models of International Migration. *The World Economy* 39, pp. 496–512.

Beine, M., F. Docquier & C. Ozden (2011), Diasporas. *Journal of Development Economics* 95, pp. 30–41.

Borjas, G.J. (1999), Immigration and Welfare Magnets. *Journal of Labor Economics* 17, pp. 607–637.

Brücker, H., G.S. Epstein, B. McCormick, G. Saint-Paul, A. Venturini & K.F. Zimmermann (2002), Managing Migration in the European Welfare State. *In:* T. Boeri, G. Hanson & B. McCormick, eds., *Immigration Policy and the Welfare System*, pp. 1–168. Oxford: Oxford University Press.

Caminada, K., K. Goudswaard & O. van Vliet (2010), Patterns of Welfare State Indicators in the EU: Is There Convergence? *Journal of Common Market Studies* 48, pp. 529–556.

Christiadi, C. & B. Cushing (2007), *Conditional Logit, IIA, and Alternatives for Estimating Models of Interstate Migration.* University Of Western Virginia Working Paper.

Clasen, J. & D. Clegg (2006), Beyond Activation: Reforming European Unemployment Protection Systems in Post-industrial Labour Markets. *European Societies* 8, pp. 527–553.

Cushing, B. & J. Poot (2004), Crossing Boundaries and Borders: Regional Science Advances in Migration Modelling. *Papers in Regional Science* 83, pp. 317–338.

Dahlberg, M. & M. Eklöf (2003), Relaxing the IIA Assumption in Locational Choice Models: A Comparison between Conditional Logit Model, Mixed Logit, and Multinomial Probit Models. Working Paper 2003. Department of Economics Uppsala University.

Davies, P.S., M.J. Greenwood & H.Z. Li (2001), A Conditional Logit Approach to US State-to-state Migration. *Journal of Regional Science* 41, pp. 337–360.

De Giorgi, G. & M. Pellizzari (2009), Welfare Migration in Europe. *Labour Economics* 16, pp. 353–363.

De Mello-Sampayo, F. (2017), Competing-destinations Gravity Model Applied to Trade in Intermediate Goods. *Applied Economics Letters* 24, pp. 1378–1384.

Docquier, F., G. Peri & I. Ruyssen (2014), The Cross-country Determinants of Potential and Actual Migration. *International Migration Review* 48, pp. S37–S99.

EMN (2004), Council Directive 2003/109/Ec of 25 November 2003 Concerning the Status of Third-country Nationals Who are Long Term Residents. Available at <http://emn.ie/cat_search_detail.jsp?clog=4&itemID=212>. Accessed on September 2018.

EPRS (2015), Third-Country Migration and European Labour Markets: Integrating Foreigners Available at <https://www.eesc.europa.eu/resources/docs/european-parliament_third-country-migration-and-european-labour-markets---integrating-foreigners-briefing-july-2015.pdf>. Accessed on 1 September 2018.

European Commission (2011), *Free Movement: Workers From Eight Member States That Joined EU in 2004 Finally Enjoy Full Rights.* Brussels: European Commission.

Geis, W., S. Uebelmesser & M. Werding (2013), How Do Migrants Choose Their Destination Country? An Analysis of Institutional Determinants. *Review of International Economics* 21, pp. 825–840.

Giulietti, C., M. Guzi, M. Kahanec & K.F. Zimmermann (2013), Unemployment Benefits and Immigration: Evidence From the EU. *International Journal of Manpower* 34, pp. 24–38.

Hausman, J. & D. McFadden (1984), A Specification Test for the Multinomial Logit Model. *Econometrica* 52, pp. 1219–1240.

Hierro, M., A. Maza & J. Villaverde (2012), Explaining Polarisation in the EU 27's International Migration Distribution. *Tijdschrift Voor Economische en Sociale Geografie* 103, pp. 396–411.

Hoffman, S. D. & G.J. Duncan (1988), Multinomial and Conditional Logit Discrete-choice Models in Demography. *Demography* 25, pp. 415–427.

Kahanec, M. & K.F. Zimmermann (2010), Migration in an Enlarged EU: A Challenging Solution? *In:* F. Keereman & I. Szekely, eds., *Five Years of an*

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Enlarged EU: A Positive Sum Game, pp. 63–94. New York: Springer.

Kennan, J. & J.R. Walker (2011), The Effect of Expected Income on Individual Migration Decisions. *Econometrica* 79, pp. 211–251.

Kuitto, K. (2011), More Than Just Money: Patterns of Disaggregated Welfare Expenditure in the Enlarged Europe. *Journal of European Social Policy* 21, pp. 348–364.

Legrain, P. (2008), *Is Free Migration Compatible with a European-style Welfare State?* Expert Report Number 11 to Sweden's Globalisation Council. Stockholm: The Globalisation Council.

Ludwig, A. & D. Johnson (2017), Intra-EU Migration and Crime: A Jigsaw to be Reckoned with. *Tijdschrift Voor Economische en Sociale Geografie* 108, pp. 854–868.

Massey, D.S. (1998), *Worlds in Motion: Understanding International Migration at the End of the Millennium*. Oxford: Oxford University Press.

Mayda, A.M. (2010), International Migration: A Panel Data Analysis of the Determinants of Bilateral Flows. *Journal of Population Economics* 23, pp. 1249–1274.

Mayer, T. & S. Zignago (2011), *Notes on CEPII's Distances Measures: The Geodist Database*. CEPII Working Paper.

McFadden, D. (1973), Conditional Logit Analysis of Qualitative Choice Behavior. *In:* P. Zarembka, ed., *Frontiers in Economics*, pp. 105–142. New York: Academic Press.

McFadden, D. (2002), The Path to Discrete Choice Models. *Access* 20, pp. 2–7.

McKinnish, T. (2007), Welfare-induced Migration at State Borders: New Evidence From Micro-data. *Journal of Public Economics* 91, pp. 437–450.

Melitz, J. & F. Toubal (2014), Native Language, Spoken Language, Translation and Trade. *Journal of International Economics* 93, pp. 351–363.

Mimosa (2008), Migration Modelling For Statistical Analyses. Available at <http://mimosa.cytise.be/>. Accessed on 1 September 2018.

Mishra, S., Y. Wang, X. Zhu, R. Moeckel & S. Mahapatra (2013), *Comparison between Gravity and Destination Choice Models for Trip Distribution in Maryland*. Transportation Research Board 92nd Annual Meeting.

OECD (2016), Social Expenditure: Detailed data (Edition 2016), OECD Social Expenditure Statistics (database). Accessed on 1 September 2018.

Pedersen, P. J., M. Pytlikova & N. Smith (2008), Selection and Network Effects – Migration Flows into OECD Countries 1990–2000. *European Economic Review* 52, pp. 1160–1186.

Ponce, A. (2018), Is Welfare a Magnet For Migration? Examining Universal Welfare Institutions and Migration Flows. *Social Forces* 98, pp. 245–278.

Ramos, R. & J. Suriñach (2017), A Gravity Model of Migration between the ENC and the EU. *Tijdschrift Voor Economische en Sociale Geografie* 108, pp. 21–35.

Raymer, J., A. Wiśniowski, J.J. Forster, P.W.F. Smith & J. Bijak (2013), Integrated Modelling of European Migration. *Journal of The American Statistical Association* 108, pp. 801–819.

Razin, A. & J. Wahba (2011), *Free vs. Controlled Migration: Bilateral Country Study*. Bonn: Institute for the Study of Labor (IZA).

Razin, A. & J. Wahba (2015), Welfare Magnet Hypothesis, Fiscal Burden, and Immigration Skill Selectivity. *Scandinavian Journal of Economics* 117, pp. 369–402.

Rivero-Fuentes, E. (2005), A Comparison of Three Models of Internal Migration in Mexico. *International Union for the Scientrific Study of Population XXV International Population Conference*. Tours, France.

Ruyssen, I., G. Everaert & G. Rayp (2014), Determinants and Dynamics of Migration to OECD Countries in a Three-dimensional Panel Framework. *Empirical Economics* 46, pp. 175–197.

Scruggs, L. (2007), Welfare State Generosity across Space and Time. *In:* J. Clasen & N.A. Siegel, eds., *Investigating Welfare State Change: The 'Dependent Variable Problem' in Comparative Analysis*, pp. 133–165. Cheltenham/Northampton: Edward Elgar.

Scruggs, L., K. Kuitto & D. Jahn (2018), Comparative Welfare Entitlements Dataset 2. Available at <http://cwed2.org/>. Accessed on 1 September 2018.

Skupnik, C. (2014), Eu Enlargement and the Race to the Bottom of Welfare States. *IZA Journal of Migration* 3, pp. 1–21.

Train, K. (2003), *Discrete Choice Methods with Simulation*. New York: Cambridge University Press.

Warin, T. & P. Svaton (2008), European Migration: Welfare Migration or Economic Migration? *Global Economy Journal* 8, pp. 1–30.

Wendt, C., L. Frisina & H. Rothgang (2009), Healthcare System Types: A Conceptual Framework for Comparison. *Social Policy & Administration* 43, pp. 70–90.

World Bank (2017), *World Development Indicators*. Washington, DC: World Bank.

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APPENDIX

Transitional arrangements regarding the 2004 EU enlargement

- 2004: only Ireland, the UK and Sweden opened their labour markets to workers from the EU 8. Hungary, Poland and Slovenia used reciprocal measures and restricted access to their labour markets for nationals from those member states that restricted labour market access for their nationals;
- 2006: Greece, Spain, Portugal, Finland, Italy and Iceland opened their labour markets to workers from the EU 8;
- 2007: The Netherlands and Luxembourg opened their labour markets to workers from the EU 8;
- 2008: France opened its labour market and the reciprocal measures were dropped by Slovenia and Poland;
- Belgium, Denmark, Germany, Austria, Switzerland and Norway maintained their restrictions to workers from the EU 8 over the full period under study. Hungary maintained its reciprocal measures.

Source: European Commission (2011).

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