

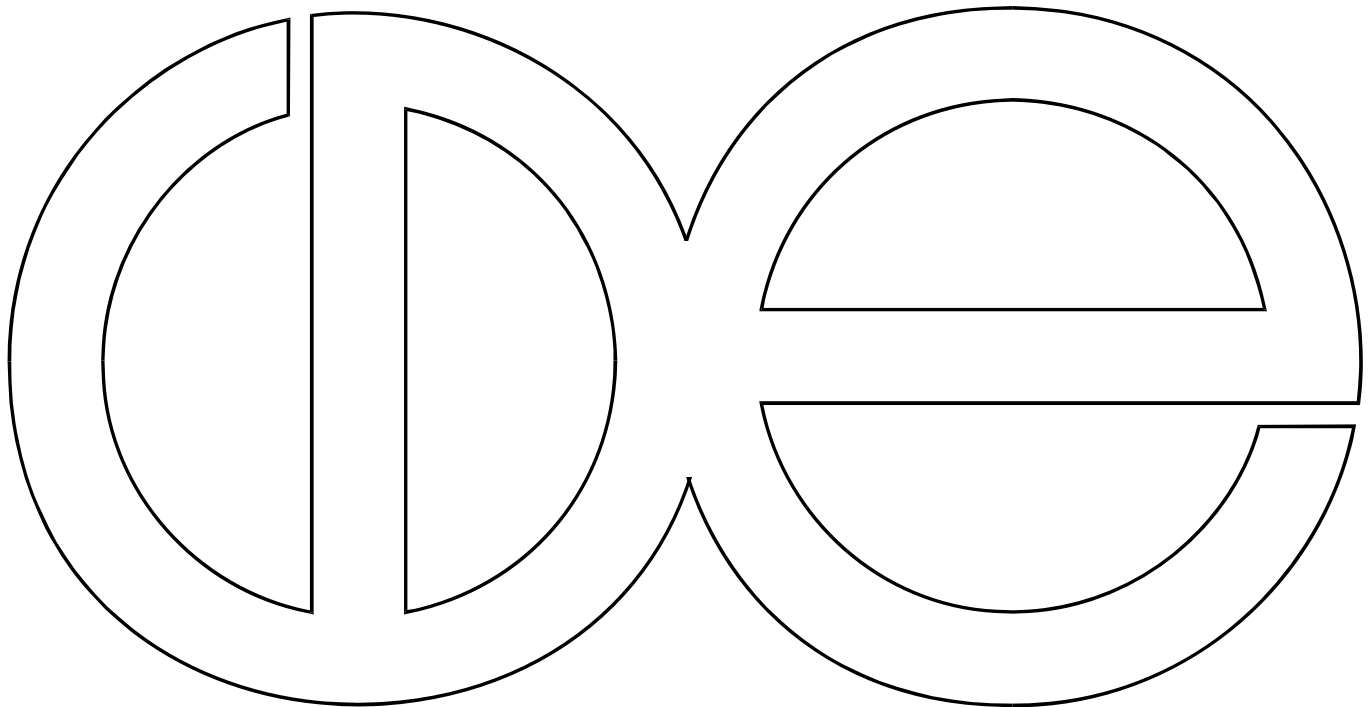
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**The Permanence of International Migration:
A Multistate Analysis of European Flows, 2002-2007**

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Keywords: International Migration; Harmonization; Multistate; Multiregional; Waiting Time

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ABSTRACT

Descriptive studies of international migration typically rely on measures of migrant stocks and rates to assess migration patterns. In this paper, we propose a third alternative. Using harmonized data on age-specific migration flows from and to countries in the European Union (EU) and European Free Trade Association (EFTA) from 2002-2007, we estimate the waiting time of international migration, i.e., the total time lived by migrants in receiving countries, on average, given period migration and mortality schedules. The results provide a window into the temporal dynamics of international migration in Europe, which are increasingly relevant given recent expansions of the EU/EFTA.

1. Introduction

This project provides estimates of the total time lived by international migrants, on average, in 31 countries in the European Union (EU) and European Free Trade Association (EFTA) each year from 2002 to 2007. Termed the “waiting time” of international migration (Palloni 2001:265), we distinguish the measure developed here from those typically used to summarize international migration patterns, e.g., migrant stocks and migration rates. International migration is a dynamic process characterized by variable time lived in sending and receiving countries, expectations which are largely dependent on the age-structure of migration flows. We contend that a measure summarizing these temporal dynamics should be standard fare in descriptive accounts of international migration patterns.

Few efforts have examined the temporal dynamics of international migration at the country-level. The dearth of data on duration of stay has resulted in analyses confined to small-scale surveys (Klinthäll 2006; Reagan and Olsen 2000; Waldorf 1994; Waldorf and Esparza 1991), which are inadequate for tracking transitions between *each and every* pair of sending and receiving countries, as well as *counts* of persons and person-years required to take a multistate approach to his issue.¹ Moreover, while published sending and receiving country reports of international migration flows are freely available from statistical agencies such as Eurostat, these lack a common metric across countries, thereby preventing analysts from combining these data in any meaningful way (Kupiszewska and Nowok 2008; Poulain et al. 2006).

Our efforts take advantage of *harmonized* (i.e., consistent in definition) data on age-specific, country-to-country migration flows for 31 countries in the EU/EFTA each year from 2002 to 2007. These were developed as part of the Migration MOdelling for Statistical Analysis (MIMOSA) project (de Beer et al. 2010; Raymer et al. 2011), which combined sending and receiving countries’ reports of international migration flows, along with covariate information, to arrive at a consistent and complete set of estimates. These estimates represent a significant improvement relative to published sending and receiving country reports, which are marred by inconsistencies in data collection, measurement and availability (Poulain et al. 2006). They are also the largest and only source of complete data on migration flows between countries in the world. Finally, since they are benchmarked to a one-year timing criterion, these estimates align with the United Nations’ (1998) recommendations for measuring international migration.

We use the MIMOSA estimates to construct a set of period increment-decrement life tables each year from 2002 to 2007. These track the age-specific transitions of migrants via migration and to death to arrive at a measure of the waiting time of international migration, i.e., the total time lived by migrants in receiving countries, on average, given period demographic conditions. A conditional life expectancy at birth, this measure expresses the average number of years lived in the receiving country j beyond age zero given prior residence in country i (for $i \neq j$) at age zero (Willekens and Rogers 1978). Just as a life expectancy at birth is often used to summarize the

¹ The terms *multistate* (Schoen 1988) and *multiregional* (Rogers 1975, 1995) are viewed here as synonymous.

mortality conditions of countries with respect to the age structure of death, the waiting time of migration can be viewed as summarizing conditions related to the context of migrant reception and incorporation in receiving countries given the age structure of both migration and death.

Following a discussion of the necessary background information and our data and methods, we present a descriptive comparison of migrant stocks (percent foreign born), rates (immigration and emigration), and the waiting times of migration developed here for 31 countries in the EU/EFTA from 2002 to 2007. We show that these measures only partially overlap, and thus capture different aspects of international migration. We then disaggregate the waiting times to examine both the age- and origin-destination structure of flows to understand which pairs of sending and receiving countries (e.g., Czech Republic and Slovakia) are driving the observed patterns.

2. Background

Descriptive studies of country-level patterns of international migration place near-exclusive reliance on measures which summarize in different ways the volume of migration. Migrant stocks refer to the size or concentration of foreign-born persons relative to the total population in the receiving country, while migration rates express recent departures (emigration), arrivals (immigration), or the balance of the two (net-migration). While each is necessary to understand international migration patterns, they are not exhaustive.

Individual-level studies have shown that the amount of time lived by migrants in receiving areas serves an integrative and to a lesser extent equalizing function where migrants' labor market and mobility outcomes are concerned (Adsera and Chiswick 2007; Borjas et al. 1992). Time lived in receiving areas has also been linked to reductions in individual prejudice on the part of natives given more opportunities for constructive interpersonal contacts with foreigners (Allport 1979; Pettigrew and Meertens 1995; Schneider 2008; Schlueter and Scheepers 2010). For example, in his article on internal migration within the United States, Alexander (2005:654) observed that a "highly transient migrant stream can inhibit the development of [a] migrant community...and draw at least some sort of antipathy from both long-term settlers and other local residents alike."

These studies raise the important issue of whether a summary measure of the temporal dynamics of international migration at the country-level might enhance our understanding migration patterns. Pitkin and Myers (2011:258, emphasis ours) recently concluded that many "empirical studies have yielded a multitude of specific" findings, resulting in "a plethora of disjointed and inconsistent results that yield little information about the *overall* [trend]." To date, the utility of a summary measure of the temporal dynamics of international migration to complement stock- and rate-based measures is unknown. This is unfortunate from a migration policy perspective, where the reception and incorporation of migrants in receiving countries is often implicit.

One possible explanation for the inattention to the temporal dynamics of international migration lies in the data requirements, and the fact that sending and receiving countries' reports of international migration flows are incomparable in their publicly available forms. As we detail in Section 3 of this paper, the measure for the waiting time of migration developed here is generated from a dynamic population model requiring a *single* matrix of age-specific migration flows between each and every pair of sending and receiving countries each year.

Publicly available migration data in Europe consist of both emigration and immigration counts. However, when particular flows between countries are compared, these reports are frequently inconsistent (Kupiszewska and Nowok 2008:43-45). Inconsistencies arise because there is no common metric used to measure migration across countries. First, there is no consensus on what exactly constitutes a migration. For example, whereas *migrations* constitute *events*, *migrants* are persons who have undergone a change in *status* from non-migrant. Cross-national analyses thus suffer from differing national viewpoints concerning what or who is a migration or migrant, respectively. Second, migration is rarely measured directly. It is often inferred as a change in residence in a population register, or by a comparison of places of residence at two points in time. Compounding these issues is the fact that countries use different methods of data collection (Poulain et al. 2006:222-227). For example, statistics may come from administrative data, decennial population censuses, or surveys. Timing criteria likewise vary considerably across countries, and may refer to persons who plan to live or have lived in a different country for no specific amount of time, three months, six months, one year or permanently.

International migration statistics also suffer from unreliability due mainly to under-registration and data coverage (Nowok et al. 2006). This is often on account of the collection method or the non-participation of migrants themselves. In general, migration data are unreliable because they tend to be based on intentions. Emigration data are particularly problematic because migrants may fail to notify authorities of their movement if it is not in their interest to do so. Surveys, such as the United Kingdom's (UK's) International Passenger Survey, typically do not have large enough sample sizes to adequately capture the level of detail needed for analyzing country-to-country migration flows without severe irregularities in the data. Moreover, reported flows for certain countries may be missing for particular years or entirely. Migration data may also be available only for the total population and not for more detailed demographic, socioeconomic or spatially disaggregated subgroups required for targeted studies.

Because of these problems, there has been limited work carried out in the area of estimating international migration flow matrices, with much of what exists focusing on indirect estimation methods for particular countries (Hill 1985; Jasso and Rosenzweig 1982; Warren and Peck 1980; Zaba 1987). There is, however, at least one major exception which focuses on European migration. The estimates produced in the MIMOSA project, as described in de Beer et al. (2010) and Raymer et al. (2011), represent the first set of flows that are truly amenable to cross-national comparison at a relatively large scale. We employ these harmonized estimates of

international migrant stocks and migration flows for 31 countries in the EU/EFTA each year from 2002 to 2007 in the current project.

3. Data and Methods

We use multistate methods (Rogers 1975, 1995; Schoen 1988) to construct period increment-decrement life tables which track the age-specific transitions of international migrants from and to 31 countries in the EU/EFTA, a residual “rest of the world” category, and to death each year from 2002 to 2007. The *state-space* is thus comprised of 33 states and is exhaustive.² The total number of transitions analyzed in this project is 110,592.³

Data requirements include, for each year, age-specific country-to-country transition rates. We use the aforementioned harmonized estimates of age-specific, country-to-country migration flows from and to countries in the EU/EFTA (including from and to the rest of the world) each year from 2002 to 2007 obtained from the MIMOSA project. The methodology used to produce these estimates is described in de Beer et al. (2010) and Raymer et al. (2011), and the estimates are freely available from the Netherlands Interdisciplinary Demographic Institute’s website (<http://www.nidi.knaw.nl/en/projects/230211/>). Based on a hierarchical methodology, available country-to-country migration flow data were harmonized using the reports of sending and receiving countries following an extension of Poulain’s (1993, 1999) optimization procedure. Missing marginal and origin-destination association data were then estimated using a multiplicative component approach (Raymer 2007, 2008) with covariate information. Finally, the estimated origin-destination-specific flows were disaggregated by age and sex based on patterns exhibited by countries with available data.

With respect to the remaining data requirements, the MIMOSA project provides for each year harmonized age-specific population counts. Annual population counts for the rest of the world were obtained by subtracting the former counts for countries in the EU/EFTA from age-specific estimates of the global population for each year obtained from the U.S. Census’ International Database (IDB). Annual age-specific death counts were obtained for countries in the EU/EFTA from Eurostat’s New Cronos database and, for the rest of the world, by subtracting the former counts for countries in the EU/EFTA from the estimated number of deaths calculated for each year from global model life tables available from the World Health Organization (WHO).⁴

² The term *state* refers to any of the 31 EU/EFTA countries, the “rest of the world” as a single entity, or death.

³ Not including transitions between states i and j (for $i=j$), we track 1,024 transitions between 32 sending states (not including death) and 33 receiving states (including death, which is absorbing) for 18, five-year age groups each year from 2002-2007, totaling $1,024 * 18 * 6 = 110,592$ possible transitions.

⁴ Global model life tables from the WHO are available for 2000 and 2008. We linearly interpolate age-specific death rates for each year from 2002 to 2007, and combine these with age-specific estimates of the global population obtained from the U.S. Census’ IDB to calculate age-specific death counts for each year.

Our conceptual model is presented in Figure 1. The state-space depicted is a first-order Markov process, where λ^{ij} and λ^{ji} represent country-to-country transition probabilities, and λ^{id} and λ^{jd} represent the force of mortality (Palloni 2001; Schoen 1988).

----- FIGURE 1 ABOUT HERE -----

The starting point for constructing increment-decrement life tables is to assemble age-specific transition matrices, $\mathbf{M}(x)$, for each year. For a system with k states, these matrices take the form (Palloni 2001):

$$\mathbf{M}(x) = \begin{pmatrix} \sum_j {}_nM_x^{1j} & -{}_nM_x^{12} & \dots & -{}_nM_x^{1k} \\ -{}_nM_x^{21} & \sum_j {}_nM_x^{2j} & \dots & -{}_nM_x^{2k} \\ \dots & \dots & \dots & \dots \\ -{}_nM_x^{k1} & -{}_nM_x^{k2} & \dots & \sum_j {}_nM_x^{kj} \end{pmatrix} \quad (1)$$

The rows and columns of (1) represent sending and receiving countries, respectively. Each off-diagonal element is the rate of emigration from country i to j or death between ages x and $x+n$, multiplied by negative one. Each diagonal element represents the sum of the emigration rates from country i to any and all receiving countries ($j = 1, 2, \dots, n$ for $i \neq j$). Life table construction is then carried out by converting each of the rates in (1) into probabilities and tracking the age-specific transitions at each age. With occurrence-exposure rates, this can be done using Schoen's (1988) general algorithm, or Rogers' (1995:47) "Option 1" method, with the assumption that the number of persons transitioning from country i to j is linear in the age interval x to $x+n$ (Palloni 2001):

$$\mathbf{I}(x+n) = \mathbf{I}(x) [\mathbf{I} - 2.5\mathbf{M}(x)] [\mathbf{I} + 2.5\mathbf{M}(x)]^{-1} \quad (2)$$

The $\mathbf{I}(x+n)$ matrix contains counts of migrants and non-migrants at the end of the age interval x to $x+n$. The off-diagonal elements are counts of completed transitions from country i to j , while the diagonal elements are counts of those who did not migrate. The $\mathbf{I}(x)$ matrix contains along the main diagonal, with zeros in the off-diagonal elements, the number of survivors at age x . At age zero, these values represent the size of a hypothetical birth cohort in each country. In this project, to minimize the impact of different population sizes across countries, these values are assumed equal.⁵ Lastly, $\mathbf{I}$ is an identity matrix, while the $\mathbf{M}(x)$ matrix is the same as that previously discussed. Summing each column in the $\mathbf{I}(x+n)$ matrix and placing these totals along the main diagonal, with zeros in the off-diagonal elements, yields the $\mathbf{I}(y)$ matrix (not shown).⁶

⁵ All radixes are set to 100,000. This is necessary since the quantity of interest in this project shown later in equation (4) is a weighted average, with weights proportional to population size.

⁶ This follows the conventions of Schoen (1988) and Palloni (2001). Rogers' (1975, 1995) method achieves the same result; however, the set of equations track transitions from country i to j using the columns of the $\mathbf{I}(x+n)$ matrix, thus requiring summation across the rows to generate the $\mathbf{I}(y)$ matrix.

In the subsequent age interval, this matrix takes the places of the $l(x)$ matrix to repeat the calculation in (2) until each of the age intervals has been exhausted. This iterative process yields a set of components which can then be assembled into a multistate life table.

Since the MIMOSA data are available in *five*-year age intervals for *single* calendar years from 2002 to 2007, it is necessary to transform each of the rates in (1) at the outset so that these reflect the probability of transition over *five* years. This is achieved with the following transformation, derived from the probability of *not* making a transition in a single year, raised to the power of five:

$$1 - \left[1 - \left(\frac{{}_nM_x^{ij}}{1 + 0.5{}_nM_x^{ij}} \right) \right]^5 \quad (3)$$

Constructing period increment-decrement life tables is a cumbersome though not intrinsically difficult task. A primary innovation in this project is the number of states ($n=33$) considered to comprise the state-space. Multistate demographic programs such as SPACE (Rogers 1995; Willekens and Rogers 1978) are readily available and user friendly, however, the maximum number of states accommodated is limited to four. While other options are available without these restrictions, e.g., a C++ program developed by Tiemeyer and Ulmer (1991) and LIPRO developed by van Imhoff and Keilman (1991) and van Imhoff (2005; see also Willekens 2011),⁷ we followed Palloni's suggestion (2001:272) and developed our own routine for increment-decrement life table construction using the *Stata* statistical software package. This provided us with greater control in implementing the above solutions and estimating the key quantities of interest in this project which are detailed below.

The key quantities of interest in this project are period life expectancies at birth; however, by restricting the set of sending countries to exclude a given receiving country, this measure expresses the average number of years lived in the receiving country j beyond age zero given prior residence outside of j at age zero (Willekens and Rogers 1978). Palloni (2001:265) terms this the conditional "waiting time" of migration.

$$e_0^j = \frac{T_0^j}{\sum I_0^i} \text{ for } i \neq j \quad (4)$$

where T_0^j is the total number of person-years lived in country j above age zero, and I_0^i is the initial size of the hypothetical birth cohort in country i (for $i \neq j$) at age zero. Though one might interpret the quantity in (4) as a life expectancy in receiving countries for *foreign born* migrants, it is important to remember that our data are based on previous and next country of residence. The quantity in (4) should therefore be interpreted with this caveat in mind.

⁷ LIPRO is available at <http://www.nidi.knaw.nl/Pages/NID/24/841.bGFuZz1Vsw.html>.

The quantity in (4) differs from how conditional life expectancies are typically constructed and understood in the multistate literature (see Palloni 2001; Rogers 1975, 1995; Schoen 1988), where one conditions on a *single* sending country, rather than *all* sending countries excluding the receiving country. To establish continuity with the former approach toward disaggregating the waiting times in (4) to examine the origin-destination structure, we also estimate the waiting time of migration conditioning on each sending country, one at a time.

$$e_0^{ij} = \frac{T_0^j}{l_0^i} \quad (5)$$

The quantities in (4) and (5) can be interpreted as follows. The former summarizes the total number of years that a migrant is expected to reside in the receiving country j beyond age zero given prior residence in any country but j at age zero. The latter expresses the total number of years that a migrant is expected to reside in the receiving country j beyond age zero given prior residence in country i and only i at age zero (for $i \neq j$). Each of these quantities assumes that period demographic conditions, i.e., age-specific migration and mortality schedules, remain constant over time.

4. Results

4.1 Summary Measures of International Migration

We begin by summarizing two measures of international migration, foreign-born population stocks and migration rates, for 31 countries in the EU/EFTA from 2002 to 2007. Since much descriptive work on international migration relies extensively on these measures, consideration of them here serves as a point of comparison and departure in the current project.

Foreign-born population stocks are presented in Table 1. These numbers were estimated as part of the MIMOSA project (Kupiszewska et al. 2009). As one might expect, the core immigrant receiving countries in Northern, Western and Southern Europe have sizeable concentrations of migrants (Castles and Miller 2003). Lichtenstein, Luxembourg and Switzerland exhibit the largest percentages of foreign-born population stocks with 37 percent, 34 percent and 22 percent, respectively. In total, there were 16 countries in 2007 that had foreign-born populations greater than 10 percent of the total population, including three of the five largest countries in Europe (France, Germany and Spain). The countries with the smallest percentages were mostly new EU accession countries, such as Bulgaria, Romania, Poland and Hungary. With few exceptions, migrant stocks increased from 2002 to 2007. The most sizeable increases over the period were in Spain (+5.36 percentage points), Ireland (+3.56), Iceland (+3.48) and Italy (+2.19). In contrast, the largest declines were in Latvia (-1.93) and Estonia (-1.73). Overall, the picture is one of increasing concentrations of migrants over the period, excluding some of the new EU accession countries in Central and Eastern Europe.

----- TABLE 1 ABOUT HERE -----

Foreign-born population stocks obscure the distinction between past and recent migrants. To isolate more recent trends, we present estimated rates of immigration and emigration from 2002 to 2007 for the same set of 31 countries in the EU/EFTA. Like foreign-born population stocks, these flows were obtained from reports produced by the MIMOSA project (de Beer et al. 2010; Raymer et al. 2011). In Table 2, we see that there is a great amount of heterogeneity in the estimated rates of immigration and emigration. However, the patterns appear to be relatively stable over time. The highest rates tend to be associated with small countries, such as Cypress and Luxembourg, although there are some exceptions, such as the immigration rates for Slovenia and Estonia.

----- TABLE 2 ABOUT HERE -----

Consistent with Table 1, a clear trend emerges in positive net migration among key destination countries in Northern, Western and Southern Europe; whereas among Central and Eastern European countries, trends are predominantly negative. The largest gains in the rate of net migration over the period were concentrated in the Czech Republic (+16.51 per thousand), Iceland (+9.39), Liechtenstein (+5.96), and Norway (+3.85). Gains to the rate of net migration for the Czech Republic clearly mirror declines in the rate of net migration for Slovakia, which is not surprising given the official dissolution of Czechoslovakia in 1993, and the incorporation of both the Czech Republic and Slovakia into the European Union in 2004.

Finally, the migration rates shown in Table 2 can be used to describe, among other things, the effects of EU expansions in 2004 and 2007. For example, we see that Poland's emigration rate steadily increased from 6.2 percent in 2003 to 10.9 percent in 2006. We also see that during the same time the UK's immigration rate increased from 8.0 percent in 2003 to 9.6 percent in 2006. Both Poland's emigration rate and the UK's immigration rate decreased slightly in 2007, suggesting a slowing down in movements. The corresponding immigration rates for Germany, a country that restricted new EU accession movements, did not increase during this time.

The above results generate little in the way of new findings. Northern, Western and Southern Europe continue to experience unprecedented volumes of international migration into the twenty-first century (Castles 2007). What is not understood is whether rising volumes of international migration necessarily translate into longer more permanent migrations, or whether international migrants are simply turning over at rates consistent with the figures in Tables 1 and 2. We distinguished earlier between the volume and the waiting time of migration experienced by receiving countries. Measures of migrant stocks and migration rates express the former, while the measure developed in this project expresses the latter. These quantities are presented in Table 3.⁸

⁸ Each of the quantities in Table 3 is properly considered a conditional life expectancy at birth or waiting time (Palloni 2001). However, given the manner in which these quantities were estimated (see equation (4) in the

----- TABLE 3 ABOUT HERE -----

Each of the quantities in Table 3 can be interpreted as follows: Using Germany in 2007 as an example, 2.12 is the total number of years, on average, that a migrant is expected to live in Germany above age zero given prior residence outside of Germany at age zero. Recall that the interpretation of these measures assumes constant age-specific migration and mortality schedules prevailing during the given period (e.g., in 2007).

In contrast to the results presented in Table 2, where rates of net-migration are overwhelmingly positive for countries in Northern, Western and Southern Europe, observed variation in the waiting time of international migration is striking. Luxembourg, Switzerland and Austria exhibited the highest rates of net-migration each year, whereas Germany, the UK, France, Spain and Italy emerge in Table 3 with the highest waiting time of international migration. Moreover, it is interesting to note that the latter set of countries are exactly those detailed by Castles and Miller (2003) in their account of historically and emerging key destination countries in Europe over the past half century.

Also emergent in Table 3 is the inherent heterogeneity in changes in these quantities over the period. Among the five countries detailed above, absolute changes in these quantities range from -0.01 years in Germany to +0.39 years in the UK. These sorts of discrepancies are also evident among more homogenous pairs of countries. Whereas Norway and Sweden show similarly positive rates of net-migration in 2007 of 6.06 and 6.01 per thousand, respectively, the waiting time migration in Sweden (0.67 years) is nearly double that of Norway (0.38). Likewise, Ireland and the UK with rates of net-migration in 2007 of 5.71 and 4.41 per thousand, respectively, exhibit marked differences in the waiting time of migration. The figure for the UK (1.69 years) is over seven times that of Ireland (0.24). While there are extensive literatures discussing the unique historical, geopolitical, economic and sociocultural underpinnings of these differences (Castles and Miller 2003; Jennissen 2004; Kritz et al. 1992; Massey et al. 1998), our aim is simply to document the discrepancies between the volume and the waiting time of international migration. At present, we have fairly strong evidence that these dynamics should be examined separately, albeit concurrently, in descriptive accounts of international migration.

4.2 Age- and Origin-Destination Structure of the Waiting Times of Migration

As one may have noticed in Table 3, there is a strong correlation between the waiting time of migration and total population size in the receiving country, ranging from 0.88 in 2002 to 0.92 in 2003.⁹ Though potentially a cause for concern if this correlation is an artifact of the method

Section 3), it is not possible to sum these quantities across countries in a given period to arrive at total life expectancy at birth. We address this issue in detail in Section 4.2 of this paper.

⁹ The correlations in each year are statistically significant ($p < 0.001$).

employed, we show in Figure 2 that the opposite is true and that this correlation is in fact real. Earlier in this paper, we noted that the radices (i.e., the initial size of the hypothetical birth cohort in each country) were set to 100,000 (see Footnote 6). This means that the observed correlations between the waiting time of migration and total population size in the receiving country each year can only be generated from the age- and origin-destination-specific transition matrices, $M(x)$.

----- FIGURE 2 ABOUT HERE -----

To demonstrate this relationship empirically, we display in Figure 2 a series of graphs showing the age-specific hazards of emigration averaged across all sending countries (y-axis) by age at the middle of each five-year interval (x-axis) for six destination countries each year from 2002 to 2007. Germany and France have the largest total populations in our sample. Iceland and Liechtenstein have the smallest populations. The total populations of Bulgaria and Switzerland fall in the middle 50% of countries in our sample. Considering that each of the graphs is displayed on a common scale, the age-pattern of migration is largely consistent across countries and over time. However, there are notable level differences in the age patterns of migration corresponding to total population size in receiving countries. If one envisions the area under each of the curves as a marker of the relative number of person-years lived in the receiving country, i.e., the numerator in equations (4) and (5), then it is clear that receiving countries with larger total populations attract relatively more migrants, especially those of peak working ages, than those with smaller total populations. Consequently, these persons spend a larger portion of their life in the receiving country, thereby explaining the strong correlation between the waiting time of migration and total population size apparent in Table 3.

That the measure developed in this paper summarizes patterns of international migration with respect to the age structure of flows is innovative and useful because measures of migrant stocks and migration rates lack this capability. In addition, discrepancies between the volume and the waiting time of international migration are complicated by heterogeneity in the configurations of sending countries. In Table 4, we present the complete matrix of waiting times disaggregated by country of origin in 2007. When summed across each row, these quantities equal total life expectancy at age zero in each sending country. The diagonal elements of the table, e^0_{ii} , represent the number of years that a person can expect to live beyond age zero in their country of residence at age zero. The off-diagonal elements, e^0_{ij} , represent the number of years a person can expect to live in another country j above age zero provided they resided in country i at age zero (for $i \neq j$).¹⁰

----- TABLE 4 ABOUT HERE -----

Persons living in Austria at age zero, for example, can expect to live a total of 75.9 years beyond age zero, of which 51.5 years will be lived in Austria, 3.7 years in Germany, 8.8 years in other

¹⁰ Note, the table should be interpreted only across the rows, not down the columns.

EU/EFTA countries, and 12.0 years outside the EU/EFTA system. In contrast, persons living in Iceland can expect to live a total of 76.6 years above age zero, of which only 39.3 years are lived in Iceland. The remaining 37.3 years are divided into 15.8 years in other Scandinavian countries (Denmark, Norway and Sweden), 3.7 years in the UK, 8.1 years in other EU/EFTA countries and 9.7 years outside the EU/EFTA system.

The information contained in Table 4 is a valuable source of information about the effects of period-specific life expectancies and age- and origin-destination-specific migration. We see that, for example, Norwegians can expect to spend more time in Sweden (3.2 years), on average, than Swedes in Norway (1.9 years). For flows between the Czech Republic and Slovakia, these differences are even more striking; Slovaks can expect to spend 11.0 years in the Czech Republic, on average, whereas Czechs can only expect to spend 1.4 years in Slovakia. In other cases, these differences are not as striking. For example, the number of years Belgians can expect to live in the Netherlands is about the same as for the Dutch in Belgium, roughly two years.

The waiting times of migration shown in Table 4 can also be used to indicate the retention or “holding power” of countries (Herting et al. 1997:268). In Table 5, we display the total number of years lived, on average, above age zero in country *i* by those residing in *i* at age zero each year from 2002 to 2007. Countries are ordered according to the percentage of total life that is lived above age zero in the same country of residence at age zero. At the top of the list is the “Rest of World” category, where in 2007, persons outside the EU/EFTA system could expect to spend 58.4 years out of a total of 59.2 years in this area. The next five countries are Italy (71.0 and 78.2 years, respectively), Finland (67.0 and 76.8 years), Slovenia (66.1 and 76.1 years), France (66.0 and 77.1 years) and Greece (65.6 and 77.0 years). At the bottom of the list are Cyprus (15.0 and 72.6 years, respectively),¹¹ Luxembourg (29.7 and 76.9 years), Iceland (39.3 and 76.6 years), Slovakia (42.7 and 74.2 years) and Switzerland (45.4 and 77.1 years).

----- TABLE 5 ABOUT HERE -----

The information in Table 5 is also useful for examining the effects of EU expansions in 2004 and 2007. Consider Poland, the largest country in this group, which joined the EU in 2004. In 2007, persons at age zero living in Poland could expect to live, on average, 50.4 years of their 74.5 years of total life above age zero in Poland. Between 2002 and 2007, life expectancy in Poland increased by 1.2 percent; however, the average number of years lived in Poland above age zero decreased by over seven years over the period. For Bulgaria, the decrease is 9.6 years, most of which occurred in 2007 when Bulgaria joined the EU. Not all decreases, however, represent recent accessions to the EU. Austrians, for example, also exhibited a considerable decrease in the number of years lived in Austria. In 2002, persons living in Austria at age zero could expect to live 60.3 years above age zero in that country. In 2007, this figure was 51.5 years, a decrease

¹¹ Note, the expectations for Cyprus are particularly low and could reflect an error in the MIMOSA estimates (e.g., the estimated emigration counts may be too large).

of 8.8 years. In Spain, the drop was nearly 20 years. Figures for Finns and Norwegians, on the other hand, increased by half a year and nearly two years, respectively. Other countries, such as Greece, Germany, Italy and the UK remained at about the same levels over the six year period.

Our final set of illustrations focuses on particular flows between pairs of sending and receiving countries. In Figure 3, we present the waiting time of migration in each EU15 country (defined as EU members prior to 2004) by persons residing in Poland at age zero for each year from 2002 to 2007. The number of years lived in Germany and the UK increased considerably for both countries after 2004. For the UK, this is not surprising, as Polish migrants were welcomed at the time of accession. For Germany, however, this is surprising as Germany restricted flows from new accession countries. This result suggests that, while flows may have been restricted (see Table 2), the policy may have actually encouraged those already in Germany to stay longer than they would have otherwise, thereby explaining the dominance of Germany as a key receiving country relative to other EU15 countries.

----- FIGURE 3 ABOUT HERE -----

In Figure 4, a selection of flows from other EU accession countries in 2004 and 2007 to the EU15 is presented to illustrate the different patterns resulting from our calculations. Here, we see that Bulgarians were more likely to migrate to and reside in Germany and Spain relative to other EU15 countries. Up until 2006, the number of years Bulgarians could expect to live in Germany had been decreasing. In 2007, however, the number of years lived in Germany more than doubled from 2.0 years to 4.8 years. The patterns for the Czech Republic and Slovenia were relatively stable over time with no large effect appearing following their accessions. The number of years Estonians could expect to spend in Finland more than doubled from 2002 to 2007, but patterns to other EU15 countries (e.g., UK) remained about the same.

----- FIGURE 4 ABOUT HERE -----

Finally, in Figure 5, we present flows between the four Nordic countries of Denmark, Finland, Norway and Sweden to see how these have evolved over time. Persons living in Denmark at age zero could expect to spend the same amount of time in Norway over the six year period, whereas the number of years lived in Sweden increased by about a year and a half. For persons living in Finland and Norway at age zero, the number of years expected to live in Sweden decreased, whereas for persons living in Sweden age zero, the number of years lived in Denmark and Norway increased.

----- FIGURE 5 ABOUT HERE -----

5. Discussion and Conclusion

In this project, we provided a descriptive account of the waiting time of international migration in 31 countries in the EU/EFTA each year from 2002 to 2007. A core innovation of this project is

the use of harmonized estimates of country-to-country migration flow data available from the MIMOSA project. The issues remedied by these data are serious enough to call in question the host of descriptive and empirical work making use of published sending and receiving country reports of international migration given the lack of a common metric across countries. Moreover, these data provide a glimpse of migration patterns from and to countries which fail to report these figures for some or all migration flows.

In 2007, the European Parliament established clear definitions of emigration and immigration. Member states are now required to provide migration flow data to Eurostat (Regulation (EC) No 862/2007). This regulation, however, has not gone far enough to remedy the problem of the incomparability of sending and receiving country reports of international migration flows. In particular, these regulations do not stipulate a precise and uniform set of methods for estimating migration flows or require countries to alter their systems of data collection (Fassman 2009). Until such conventions are implemented, methods for harmonizing and estimating missing emigration and immigration reports of sending and receiving countries are necessary to ensure that international migration is measured and modelled consistently across countries.

In combining the MIMOSA data with multistate methods, we sought to demonstrate that the waiting time of international migration, measured as the total number of years lived in the receiving country j , on average, beyond age zero given prior residence in country i at age zero (for $i \neq j$), is a unique and useful way to describe country-level migration patterns alongside measures of migrant stocks and migration rates. The measure developed in this project expresses turnover and temporality in international migration flows produced by the age pattern of migration from and to sending and receiving countries, respectively. This latter feature is especially important in the European context, where population aging is a serious demographic concern (Bongaarts 2004). Since migrants tend to be younger, they have more potential years of life to live in destination countries and thus more working years. Where issues of international migration intersect with population aging, labor market pressures, and public pensions, it is important that descriptive accounts of country-level migration patterns take into account age-specific migration propensities and the corresponding waiting times of migration (Bauer and Zimmerman 1999).

We noted earlier that the measure developed in this project is one way to aid in thinking about the context of migrant reception and integration in receiving countries. Migrants who increasingly reside in destination countries for longer periods are not necessarily the ones who are the most visible with respect to foreign-born population stocks and migration rates. While theoretical and empirical scholarship has demonstrated a positive, non-linear association between the proportionate concentration of migrants and various indicators social exclusion in receiving countries (Blalock 1967; Citrin and Sides 2006; Quillian 1995; Schneider 2008; Semyonov et al. 2006), little if anything is known about the role of the waiting time of migration at the country-level. We suggest that a fruitful extension to the work of this project include empirical efforts to establish or disconfirm the importance of the waiting time of international

migration as source of cross-country variation in analyses of the social exclusion migrants. The efficacy of this measure may yield new insights into societal contexts of migrant reception and incorporation relevant to scholars and policy-makers alike.

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Table 1: Percent Foreign Born of Total Population in 31 EU/EFTA Countries, 2002-2007

		2002	2003	2004	2005	2006	2007
AT-	Austria	12.75	13.17	13.57	13.98	14.38	14.80
BE-	Belgium	10.79	11.12	11.40	11.68	12.07	12.51
BG-	Bulgaria	0.55	0.55	0.54	0.54	0.53	0.53
CH-	Switzerland	21.42	21.59	21.75	21.90	22.04	22.19
CY-	Cyprus	12.81	13.06	13.34	13.63	13.90	14.12
CZ-	Czech Republic	4.47	4.45	4.43	4.42	4.40	4.38
DE-	Germany	12.81	12.89	12.71	12.84	12.85	12.84
DK-	Denmark	7.29	7.47	7.59	7.69	7.84	8.04
EE-	Estonia	17.98	17.65	17.31	16.97	16.62	16.25
ES-	Spain	6.20	7.73	8.55	9.90	11.26	11.56
FI-	Finland	2.79	2.92	3.04	3.18	3.36	3.56
FR-	France	10.36	10.53	10.70	10.85	10.85	10.85
GR-	Greece	10.36	10.47	10.58	10.68	10.79	10.89
HU-	Hungary	2.82	2.77	2.72	2.68	2.63	2.58
IE-	Ireland	10.37	9.10	8.91	9.88	14.67	13.93
IS-	Iceland	6.40	6.61	6.72	7.04	8.23	9.88
IT-	Italy	4.02	4.46	4.91	5.35	5.78	6.21
LI-	Liechtenstein	38.81	38.43	38.03	37.68	37.31	36.93
LT-	Lithuania	6.10	6.36	6.89	6.61	6.61	6.56
LU-	Luxembourg	32.72	33.03	33.35	33.64	33.96	34.27
LV-	Latvia	18.04	17.24	16.96	16.65	16.34	16.11
MT-	Malta	5.55	5.69	5.83	5.96	6.06	6.04
NL-	Netherlands	10.40	10.59	10.65	10.65	10.62	10.59
NO-	Norway	6.96	7.33	7.59	7.84	8.20	8.65
PL-	Poland	2.08	2.01	1.94	1.88	1.81	1.75
PT-	Portugal	6.40	6.53	6.66	6.78	6.89	7.00
RO-	Romania	0.61	0.62	0.62	0.62	0.63	0.64
SE-	Sweden	11.54	11.78	12.01	12.21	12.44	12.90
SI-	Slovenia	10.89	10.92	11.00	10.87	11.10	11.31
SK-	Slovakia	2.83	3.49	4.14	4.05	4.15	4.31
UK-	United Kingdom	8.40	8.50	8.83	9.26	9.96	9.97

Source: Kupiszewska et al. (2009)

Table 2: Immigration and Emigration Rates (per 000) to/from 31 EU/EFTA Countries, 2002-2007

	Immigration						Emigration					
	2002	2003	2004	2005	2006	2007	2002	2003	2004	2005	2006	2007
AT- Austria	11.76	13.06	15.19	15.25	12.93	13.96	5.90	7.06	7.65	8.26	9.43	9.73
BE- Belgium	7.15	7.39	7.96	8.66	10.04	10.73	4.59	4.80	5.04	5.30	5.84	6.15
BG- Bulgaria	3.47	3.78	4.02	4.00	4.28	4.58	6.54	7.74	7.89	7.82	8.65	11.54
CH- Switzerland	17.34	16.34	16.28	15.91	17.07	22.02	10.77	10.46	10.79	11.03	11.79	11.97
CY- Cypress	16.40	18.94	24.41	26.44	16.35	19.74	46.96	29.33	39.79	58.99	41.27	64.53
CZ- Czech Republic	8.47	11.38	10.13	11.42	12.87	19.65	18.34	19.31	20.00	15.02	20.11	13.01
DE- Germany	8.20	7.36	7.22	6.80	6.38	6.64	4.89	4.92	5.46	5.24	5.42	6.05
DK- Denmark	6.82	6.53	6.55	6.86	7.41	8.44	5.28	5.33	5.63	5.76	6.08	5.78
EE- Estonia	2.92	2.53	3.46	3.20	3.52	3.53	6.57	6.48	7.32	7.53	8.36	8.77
ES- Spain	7.31	9.99	10.02	10.35	11.90	13.33	2.64	3.88	3.48	3.98	7.21	10.85
FI- Finland	4.08	4.00	4.55	4.80	5.01	5.80	2.73	2.57	2.85	2.63	2.62	2.71
FR- France	4.11	4.18	4.47	4.79	5.66	6.05	2.56	2.69	2.88	3.08	3.44	3.61
GR- Greece	5.54	5.38	5.69	5.83	5.99	6.14	3.57	3.38	3.42	3.46	3.43	3.59
HU- Hungary	3.76	3.76	4.09	4.24	4.53	4.72	5.23	5.23	5.88	6.48	7.07	7.56
IE- Ireland	11.13	11.02	11.48	12.93	16.89	15.66	6.69	6.92	7.73	8.16	9.23	9.95
IS- Iceland	8.15	10.58	13.00	15.38	17.51	19.46	12.64	12.09	12.93	12.79	13.45	14.56
IT- Italy	5.69	11.49	10.68	7.79	8.73	8.67	2.10	2.24	2.10	2.16	2.11	2.22
LI- Liechtenstein	5.73	4.46	6.50	5.92	11.26	13.68	6.68	5.85	8.25	7.69	7.82	8.67
LT- Lithuania	3.12	2.88	3.34	4.20	4.83	5.39	5.74	7.14	8.39	8.74	8.20	8.70
LU- Luxembourg	37.14	38.26	38.21	39.47	33.57	35.56	22.03	23.61	23.86	25.29	23.10	25.70
LV- Latvia	1.61	1.55	1.91	2.19	3.30	4.22	7.73	5.88	6.88	6.25	11.03	9.02
MT- Malta	5.61	5.69	5.31	6.26	6.29	7.00	8.59	8.90	9.35	9.50	10.83	10.60
NL- Netherlands	7.85	6.73	6.06	5.93	6.49	7.48	4.43	4.58	4.95	5.44	5.87	6.02
NO- Norway	7.16	6.35	6.40	6.95	7.90	10.61	4.95	4.90	4.66	4.40	4.58	4.55
PL- Poland	2.82	3.01	4.07	4.01	4.63	6.43	6.00	6.16	7.18	8.06	10.91	9.89
PT- Portugal	4.44	4.48	4.69	4.95	5.68	6.02	4.04	4.25	4.39	4.49	4.95	5.32
RO- Romania	2.86	3.17	3.29	3.52	4.00	4.63	8.57	13.27	12.84	12.01	13.53	15.14
SE- Sweden	7.16	7.06	6.85	7.18	10.53	10.87	3.66	3.86	4.09	4.29	4.76	4.86
SI- Slovenia	3.50	2.87	3.51	3.65	3.42	3.58	2.85	2.61	2.93	2.63	2.78	3.30
SK- Slovakia	2.94	3.31	5.70	12.06	16.15	11.01	9.86	10.62	11.57	14.57	15.70	15.98
UK- United Kingdom	7.16	7.95	9.52	9.07	9.60	9.49	4.58	4.75	4.72	4.94	5.50	5.08

Source: Raymer et al. (2011); Kupiszewska et al. (2009)

Table 3: Waiting Time of International Migration (in years) in 31 EU/EFTA Countries and Rest of World, 2002-2007

	2002	2003	2004	2005	2006	2007
AT- Austria	0.28	0.29	0.48	0.42	0.38	0.42
BE- Belgium	0.43	0.44	0.47	0.45	0.49	0.48
BG- Bulgaria	0.13	0.12	0.13	0.14	0.13	0.14
CH- Switzerland	0.40	0.36	0.36	0.38	0.38	0.50
CY- Cypress	0.02	0.03	0.04	0.03	0.03	0.02
CZ- Czech Republic	0.20	0.25	0.21	0.26	0.26	0.46
DE- Germany	2.13	1.94	2.04	2.00	1.96	2.12
DK- Denmark	0.54	0.49	0.51	0.50	0.51	0.54
EE- Estonia	0.03	0.02	0.04	0.03	0.04	0.03
ES- Spain	0.69	0.91	0.92	0.97	1.04	1.07
FI- Finland	0.26	0.26	0.31	0.31	0.37	0.41
FR- France	0.94	0.92	1.03	1.12	1.16	1.21
GR- Greece	0.26	0.22	0.25	0.28	0.26	0.29
HU- Hungary	0.09	0.09	0.18	0.10	0.12	0.13
IE- Ireland	0.11	0.12	0.16	0.23	0.24	0.24
IS- Iceland	0.03	0.03	0.03	0.04	0.04	0.04
IT- Italy	0.77	1.19	0.94	0.86	0.89	0.89
LI- Liechtenstein	0.00	0.00	0.00	0.00	0.00	0.00
LT- Lithuania	0.02	0.03	0.04	0.06	0.06	0.07
LU- Luxembourg	0.06	0.06	0.06	0.06	0.05	0.05
LV- Latvia	0.02	0.03	0.04	0.06	0.05	0.08
MT- Malta	0.01	0.00	0.00	0.01	0.01	0.01
NL- Netherlands	0.33	0.30	0.33	0.30	0.34	0.44
NO- Norway	0.32	0.25	0.24	0.25	0.29	0.38
PL- Poland	0.26	0.28	0.37	0.36	0.37	0.54
PT- Portugal	0.18	0.20	0.21	0.20	0.20	0.22
RO- Romania	0.15	0.14	0.16	0.18	0.19	0.21
SE- Sweden	0.59	0.57	0.55	0.56	0.62	0.67
SI- Slovenia	0.02	0.01	0.02	0.02	0.02	0.06
SK- Slovakia	0.04	0.05	0.07	0.16	0.21	0.15
UK- United Kingdom	1.30	1.52	1.78	1.65	1.73	1.69
.....- Rest of World	7.71	7.63	8.03	8.43	9.57	9.40

Source: Authors' calculations

Note: The waiting time of international migration is a conditional life expectancy at age zero, defined as the total number of years, on average, that a migrant is expected to live in the receiving country j above age zero given prior residence in country i (for $i \neq j$) at age zero (Willekens and Rogers 1978; see also Palloni 2001).

Table 4: Waiting Time of International Migration (in years) for Sending-Receiving Country Pairs, 2007

Sending Country <i>i</i>	Receiving Country <i>j</i>																														e^0	e^0_{ij}	e^0_{ij}		
	AT	BE	BG	CH	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HU	IE	IS	IT	LI	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK				
AT- Austria	51.51	0.12	0.31	1.03	0.01	0.32	3.69	0.10	0.01	0.43	0.06	0.42	0.17	1.07	0.08	0.01	0.62	0.04	0.01	0.01	0.01	0.00	0.26	0.06	1.04	0.10	0.99	0.15	0.18	0.44	0.70	12.00	75.94	51.51	24.44
BE- Belgium	0.11	58.03	0.03	0.19	0.00	0.06	1.07	0.12	0.00	0.82	0.09	3.01	0.09	0.04	0.11	0.00	0.72	0.00	0.02	0.56	0.01	0.00	1.95	0.06	0.46	0.12	0.07	0.15	0.02	0.05	1.31	7.22	76.52	58.03	18.49
BG- Bulgaria	0.74	0.18	43.85	0.24	0.05	0.61	4.76	0.10	0.00	4.87	0.07	0.63	0.44	0.07	0.08	0.00	1.55	0.00	0.02	0.01	0.23	0.00	1.68	0.08	0.40	0.08	0.57	0.43	0.01	0.26	1.10	10.36	73.48	43.85	29.63
CH- Switzerland	0.78	0.25	0.07	45.41	0.01	0.19	4.60	0.26	0.01	2.09	0.21	3.72	0.18	0.10	0.19	0.01	4.94	0.01	0.03	0.04	0.02	0.01	0.60	0.15	0.69	0.20	0.15	0.40	0.36	0.22	2.68	8.52	77.10	45.41	31.69
CY- Cypress	0.13	0.14	1.93	0.15	14.97	0.09	0.81	0.04	0.02	0.60	0.07	0.52	5.47	0.44	0.14	0.00	0.49	0.00	0.01	0.00	0.03	0.05	0.22	0.04	0.26	0.03	1.43	0.19	0.00	0.04	3.58	40.65	72.55	14.97	57.58
CZ- Czech Republic	0.34	0.07	0.50	0.13	0.01	47.13	1.29	0.06	0.00	0.27	0.02	0.28	0.06	0.04	0.04	0.01	0.31	0.00	0.01	0.00	0.03	0.00	0.17	0.05	0.22	0.02	0.19	0.07	0.01	1.39	1.21	20.02	73.97	47.13	26.84
DE- Germany	0.75	0.15	0.16	0.95	0.01	0.15	59.46	0.17	0.01	0.60	0.06	0.56	0.40	0.40	0.10	0.01	0.84	0.00	0.04	0.06	0.02	0.00	0.45	0.16	2.86	0.18	0.41	0.21	0.06	0.13	1.01	6.25	76.59	59.46	17.13
DK- Denmark	0.13	0.16	0.03	0.34	0.01	0.09	1.28	56.12	0.03	0.56	0.35	0.58	0.09	0.07	0.11	0.48	0.32	0.00	0.10	0.01	0.09	0.01	0.37	1.58	0.45	0.05	0.06	4.00	0.02	0.09	1.51	6.95	76.03	56.12	19.91
EE- Estonia	0.10	0.08	0.01	0.11	0.02	0.04	1.10	0.33	48.97	0.30	7.66	0.32	0.03	0.04	0.12	0.02	0.33	0.00	0.05	0.00	0.50	0.00	0.21	0.75	0.13	0.02	0.03	1.12	0.00	0.02	2.55	8.03	73.02	48.97	24.05
ES- Spain	0.08	0.46	0.20	0.96	0.00	0.03	0.76	0.09	0.00	50.67	0.06	1.62	0.05	0.04	0.26	0.00	0.37	0.01	0.04	0.01	0.01	0.00	0.26	0.05	0.16	0.57	0.68	0.11	0.01	0.03	1.06	17.04	75.70	50.67	25.03
FI- Finland	0.19	0.12	0.01	0.34	0.00	0.07	1.11	0.23	0.47	0.48	66.98	0.28	0.06	0.04	0.14	0.02	0.27	0.00	0.02	0.01	0.05	0.00	0.30	0.48	0.13	0.02	0.02	1.95	0.01	0.03	0.60	2.40	76.83	66.98	9.85
FR- France	0.07	0.48	0.03	0.38	0.00	0.05	0.79	0.07	0.00	0.54	0.03	65.95	0.07	0.04	0.11	0.00	0.38	0.00	0.01	0.16	0.01	0.01	0.21	0.04	0.28	0.26	0.08	0.08	0.01	0.04	1.18	5.71	77.06	65.95	11.11
GR- Greece	0.13	0.08	0.14	0.09	0.33	0.05	1.83	0.06	0.00	0.20	0.04	0.36	65.60	0.04	0.04	0.00	0.31	0.00	0.01	0.01	0.00	0.01	0.38	0.03	0.45	0.02	0.18	0.24	0.00	0.03	1.36	4.90	76.95	65.60	11.34
HU- Hungary	1.19	0.14	0.05	0.21	0.02	0.12	4.18	0.10	0.00	0.30	0.08	0.69	0.08	54.23	0.08	0.00	0.36	0.00	0.00	0.01	0.00	0.00	0.30	0.06	0.24	0.05	0.50	0.24	0.01	0.39	1.01	8.52	73.16	54.23	18.93
IE- Ireland	0.11	0.61	0.07	0.50	0.01	0.08	0.96	0.13	0.02	0.93	0.12	1.77	0.15	0.05	52.87	0.01	0.40	0.00	0.76	0.03	0.41	0.01	0.39	0.09	1.34	0.13	0.16	0.24	0.02	0.05	3.82	9.74	76.02	52.87	23.15
IS- Iceland	0.21	0.09	0.01	0.21	0.00	0.08	1.43	9.32	0.03	0.96	0.59	0.42	0.04	0.04	0.09	39.34	0.47	0.00	0.22	0.01	0.22	0.00	0.83	2.42	1.66	0.28	0.04	4.03	0.01	0.10	3.74	9.68	76.59	39.34	37.25
IT- Italy	0.12	0.17	0.02	0.95	0.00	0.04	0.88	0.05	0.00	0.46	0.03	0.46	0.04	0.02	0.04	0.00	71.03	0.00	0.01	0.01	0.01	0.01	0.14	0.02	0.31	0.03	0.08	0.06	0.02	0.05	0.46	2.67	78.18	71.03	7.15
LI- Liechtenstein	2.77	0.04	0.02	2.29	0.00	0.03	3.14	0.34	0.00	0.75	0.01	2.48	0.03	0.04	0.03	0.00	0.89	53.19	0.00	0.01	0.00	0.00	0.05	0.02	1.03	0.03	0.07	0.04	0.92	0.04	0.18	8.90	77.34	53.19	24.15
LT- Lithuania	0.17	0.20	0.08	0.17	0.01	0.10	2.32	0.74	0.05	1.56	0.11	0.46	0.08	0.02	2.26	0.17	0.52	0.00	47.81	0.01	0.56	0.00	0.33	1.70	0.73	0.09	0.04	0.87	0.00	0.04	2.44	8.27	71.90	47.81	24.09
LU- Luxembourg	0.37	7.61	0.06	1.39	0.01	0.05	8.04	0.52	0.04	0.77	0.37	9.90	0.31	0.30	0.20	0.04	1.40	0.00	0.06	29.73	0.01	0.02	0.96	0.08	0.67	3.76	0.12	0.50	0.21	0.04	3.55	5.75	76.86	29.73	47.13
LV- Latvia	0.09	0.15	0.07	0.24	0.03	0.04	1.33	0.45	0.25	0.33	0.18	0.34	0.05	0.01	0.84	0.08	0.34	0.00	0.27	0.00	50.30	0.00	0.18	0.47	0.17	0.04	0.02	0.48	0.00	0.03	1.70	12.67	71.19	50.30	20.88
MT- Malta	0.11	0.22	0.02	0.14	0.02	0.04	0.71	0.08	0.00	0.19	0.03	1.97	0.06	0.03	0.24	0.00	1.09	0.00	0.02	0.01	0.00	49.21	0.32	0.03	0.12	0.04	0.03	0.28	0.00	0.06	4.00	16.47	75.54	49.21	26.33
NL- Netherlands	0.19	2.06	0.05	0.40	0.01	0.12	1.90	0.14	0.00	0.79	0.07	0.83	0.15	0.09	0.13	0.01	0.34	0.00	0.02	0.03	0.02	0.01	58.92	0.18	0.58	0.17	0.07	0.27	0.01	0.06	1.60	7.67	76.90	58.92	17.98
NO- Norway	0.08	0.08	0.02	0.19	0.00	0.06	0.80	1.40	0.04	0.95	0.56	0.29	0.05	0.03	0.05	0.10	0.22	0.00	0.15	0.01	0.07	0.01	0.34	62.57	0.58	0.05	0.03	3.18	0.00	0.11	1.45	4.00	77.47	62.57	14.90
PL- Poland	0.40	0.32	0.03	0.29	0.02	0.26	6.68	0.29	0.00	0.56	0.06	0.68	0.18	0.05	1.01	0.13	0.96	0.00	0.03	0.02	0.02	0.00	0.71	0.81	50.43	0.04	0.05	0.57	0.01	0.14	2.82	6.92	74.50	50.43	24.07
PT- Portugal	0.11	0.20	0.03	0.17	0.00	0.02	1.35	0.07	0.00	2.84	0.03	1.98	0.03	0.02	0.05	0.03	0.24	0.00	0.02	0.48	0.01	0.00	0.61	0.05	0.11	60.44	0.06	0.08	0.01	0.02	1.51	5.94	76.53	60.44	16.09
RO- Romania	0.86	0.12	0.10	0.23	0.02	0.18	2.92	0.07	0.00	7.06	0.03	0.68	0.13	0.24	0.07	0.00	6.69	0.00	0.01	0.01	0.01	0.00	0.26	0.06	0.16	0.08	44.31	0.25	0.01	0.35	0.31	8.74	73.96	44.31	29.65
SE- Sweden	0.15	0.14	0.02	0.35	0.01	0.07	0.94	1.14	0.05	0.58	1.45	0.44	0.22	0.07	0.12	0.10	0.26	0.00	0.08	0.02	0.07	0.02	0.31	1.91	0.69	0.04	0.04	61.82	0.03	0.06	1.41	4.99	77.60	61.82	15.78
SI- Slovenia	1.04	0.29	0.01	1.28	0.00	0.08	1.43	0.07	0.00	0.21	0.02	0.25	0.02	0.03	0.03	0.00	0.79	0.02	0.00	0.02	0.00	0.00	0.21	0.05	0.10	0.01	0.02	0.12	66.13	0.16	0.08	3.60	76.09	66.13	9.96
SK- Slovakia	1.46	0.13	0.14	1.29	0.05	11.00	2.92	0.11	0.00	0.40	0.03	0.46	0.09	0.34	0.15	0.02	0.57	0.00	0.01	0.01	0.01	0.00	0.34	0.24	0.28	0.04	0.12	0.11	0.01	42.74	2.34	8.84	74.24	42.74	31.51
UK- United Kingdom	0.08	0.10	0.03	0.21	0.05	0.07	0.57	0.13	0.01	1.54	0.07	1.06	0.26	0.11	0.52	0.01	0.38	0.00	0.15	0.01	0.06	0.02	0.33	0.09	0.38	0.10	0.05	0.20	0.01	0.05	61.65	8.12	76.41	61.65	14.76
..... Rest of World	0.02	0.02	0.00	0.02	0.00	0.04	0.08	0.01	0.00	0.12	0.01	0.10	0.01	0.01	0.01	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.03	0.01	0.01	0.02	0.00	0.01	0.15	58.37	59.24	58.37	0.87

Source: Authors' calculations

Note: The waiting time of international migration is a conditional life expectancy at age zero, defined as the total number of years, on average, that a migrant is expected to live in the receiving country *j* above age zero given prior residence in country *i* (for *i* ≠ *j*) at age zero (Willekens and Rogers 1978; see also Palloni 2001).

Table 5: Relative Retention Times of Migration (in years) for 31 EU/EFTA Countries and Rest of World, 2002-2007

Country	e^0_{ii}						e^0	% change in e^0	e^0_{ii} as % of e^0
	2002	2003	2004	2005	2006	2007	2007	2002-2007	2007
.....- Rest of World	56.54	56.85	57.20	57.66	58.01	58.37	59.24	3.47	98.53
IT- Italy	70.89	70.32	71.09	71.02	71.35	71.03	78.18	0.96	90.85
FI- Finland	66.49	67.08	66.33	66.99	67.31	66.98	76.83	0.76	87.17
SI- Slovenia	66.87	67.09	66.89	67.98	67.66	66.13	76.09	1.48	86.91
FR- France	68.47	68.20	67.87	67.30	66.32	65.95	77.06	0.93	85.58
GR- Greece	65.80	66.51	66.24	66.20	66.32	65.60	76.95	0.61	85.26
NO- Norway	60.79	61.10	61.98	62.83	62.43	62.57	77.47	1.28	80.76
UK- United Kingdom	62.18	61.98	62.04	61.69	60.26	61.65	76.41	1.13	80.68
SE- Sweden	65.02	64.26	63.72	63.24	62.03	61.82	77.60	0.56	79.67
PT- Portugal	63.29	62.97	62.94	62.56	61.47	60.44	76.53	1.66	78.97
DE- Germany	61.93	61.79	60.18	61.15	61.01	59.46	76.59	1.11	77.64
NL- Netherlands	63.02	62.50	61.58	60.40	59.27	58.92	76.90	1.12	76.61
BE- Belgium	61.69	61.38	60.84	60.14	58.79	58.03	76.52	0.94	75.84
HU- Hungary	57.98	58.48	57.27	56.05	55.26	54.23	73.16	1.53	74.12
DK- Denmark	57.89	57.49	56.62	56.36	55.46	56.12	76.03	1.17	73.82
LV- Latvia	52.13	56.36	55.19	55.28	47.04	50.30	71.19	1.56	70.67
IE- Ireland	58.53	58.39	56.80	56.20	54.29	52.87	76.02	0.89	69.55
LI- Liechtenstein	57.51	60.39	54.17	54.89	55.64	53.19	77.34	1.37	68.77
AT- Austria	60.32	57.41	55.78	55.13	52.19	51.51	75.94	0.16	67.82
PL- Poland	57.84	57.58	55.62	53.97	48.70	50.43	74.50	1.21	67.69
EE- Estonia	52.68	53.35	51.57	51.54	49.88	48.97	73.02	2.59	67.06
ES- Spain	70.29	66.92	67.52	66.13	58.23	50.67	75.70	-1.44	66.94
LT- Lithuania	56.30	52.77	49.67	48.29	49.05	47.81	71.90	0.79	66.49
MT- Malta	53.58	53.64	52.08	51.81	48.89	49.21	75.54	0.29	65.15
CZ- Czech Republic	41.66	39.87	39.68	44.24	38.39	47.13	73.97	1.87	63.72
RO- Romania	50.41	42.46	44.93	47.77	46.14	44.31	73.96	3.37	59.91
BG- Bulgaria	53.47	51.23	50.98	51.04	49.29	43.85	73.48	1.89	59.67
CH- Switzerland	48.43	49.13	48.75	48.29	45.78	45.41	77.10	0.66	58.90
SK- Slovakia	49.39	51.03	49.97	43.86	42.72	42.74	74.24	1.29	57.56
IS- Iceland	43.40	44.59	42.68	43.03	41.45	39.34	76.59	-0.01	51.37
LU- Luxembourg	31.38	29.80	30.12	29.54	32.27	29.73	76.86	1.54	38.68
CY- Cypress	20.13	28.60	22.13	16.44	21.60	14.97	72.55	0.87	20.64

Source: Authors' calculations

Figure 1: Model of States and Transitions

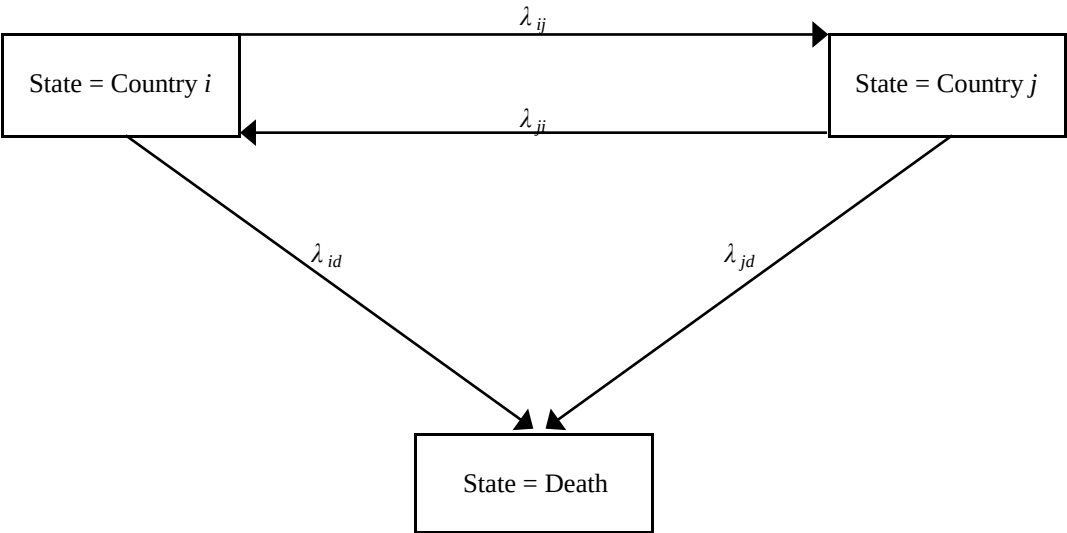


Figure 2: Mean Age-Specific Hazards of Emigration to Selected Receiving Countries Sorted by Total Population Size, 2002-2007

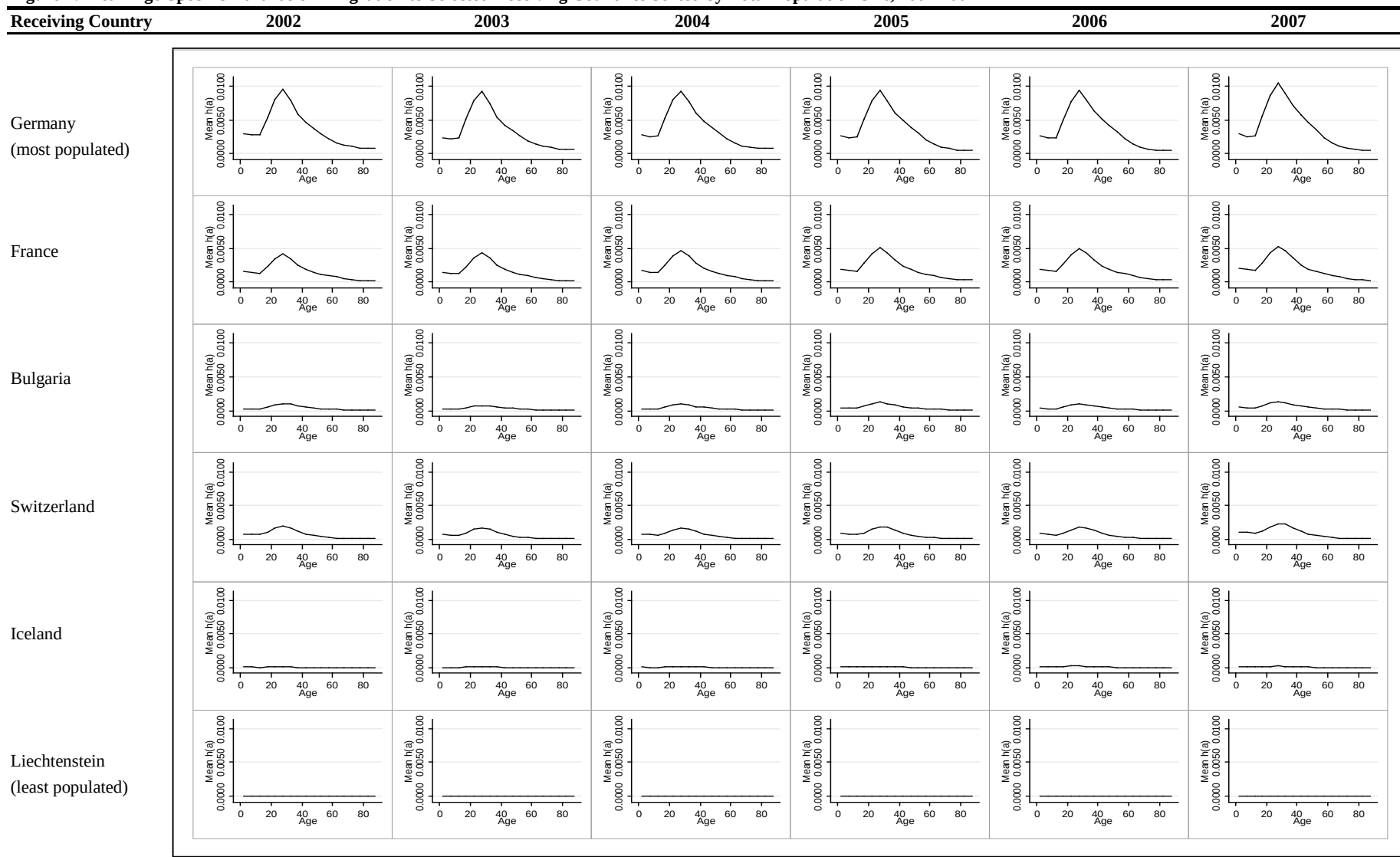


Figure 3: Waiting Time of International Migration from Poland to EU15 Countries, 2002-2007

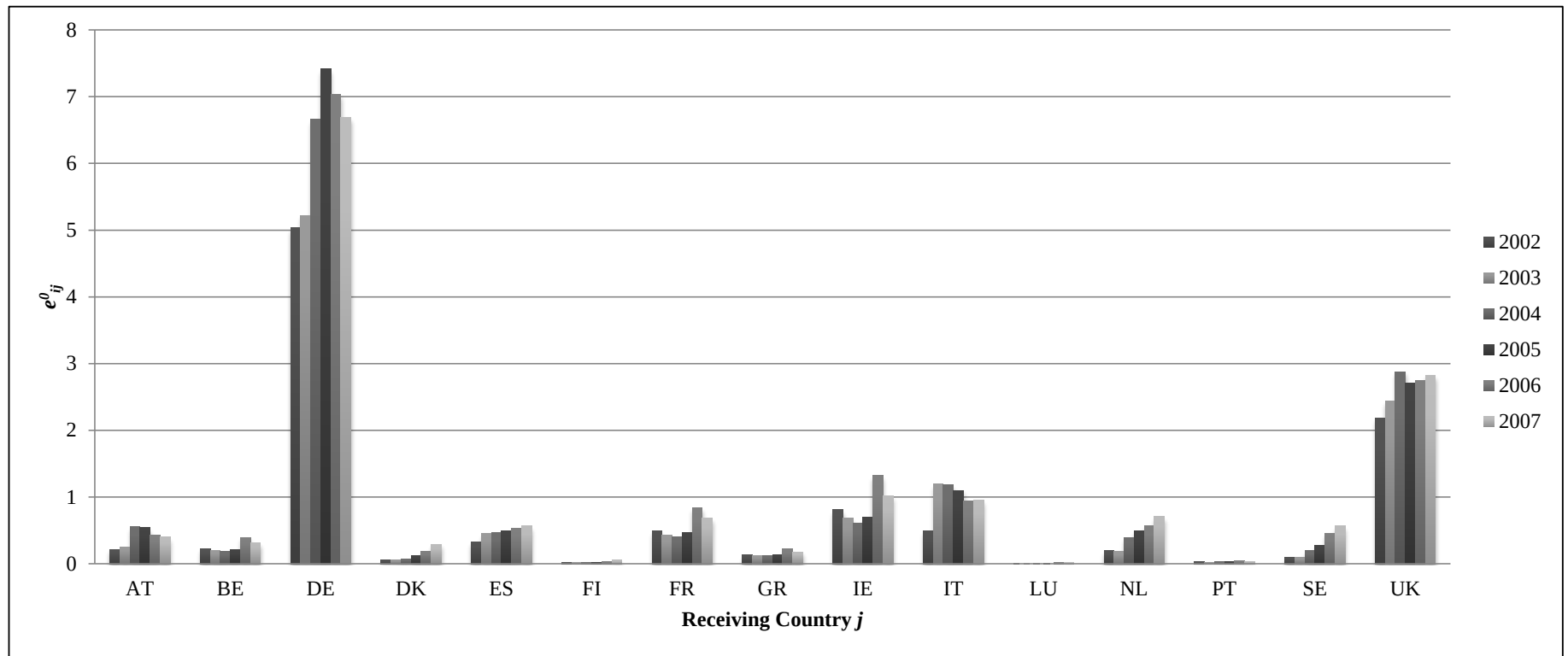
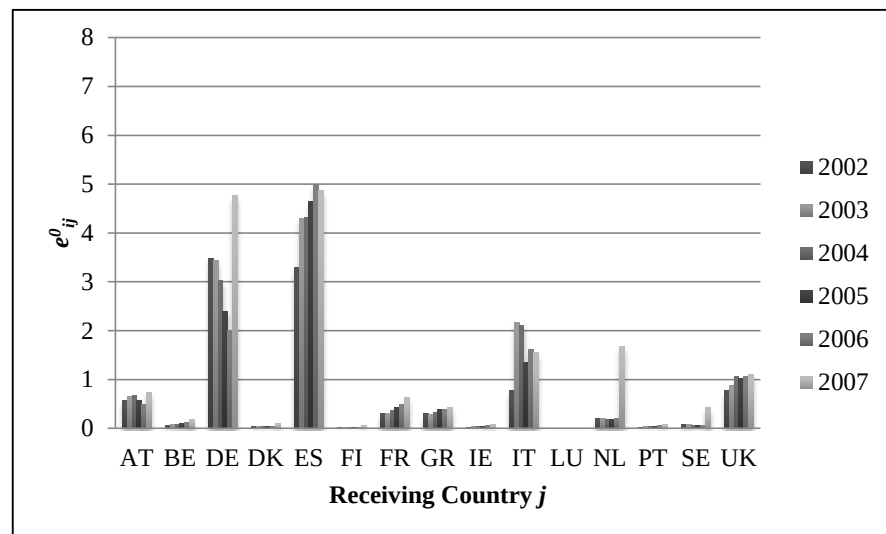
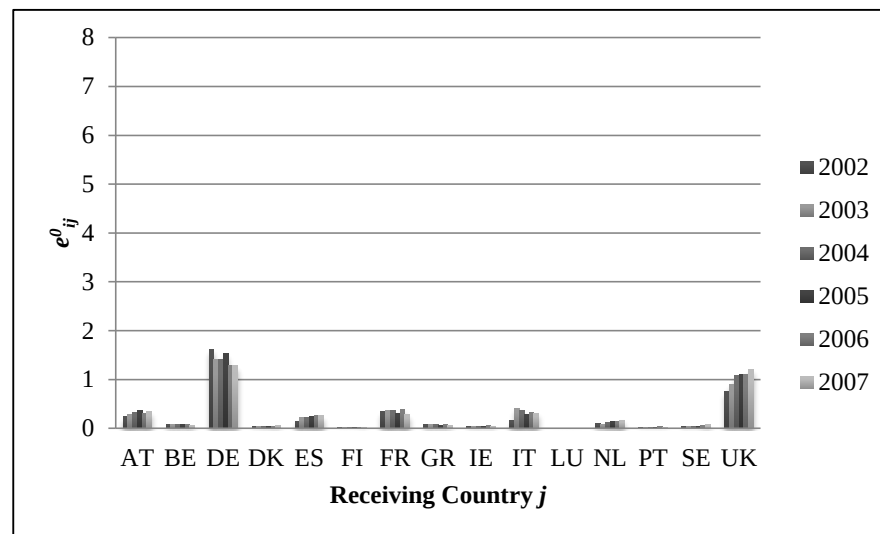


Figure 4: Waiting Time of International Migration from Selected New Accession Countries to EU15 Countries, 2002-2007

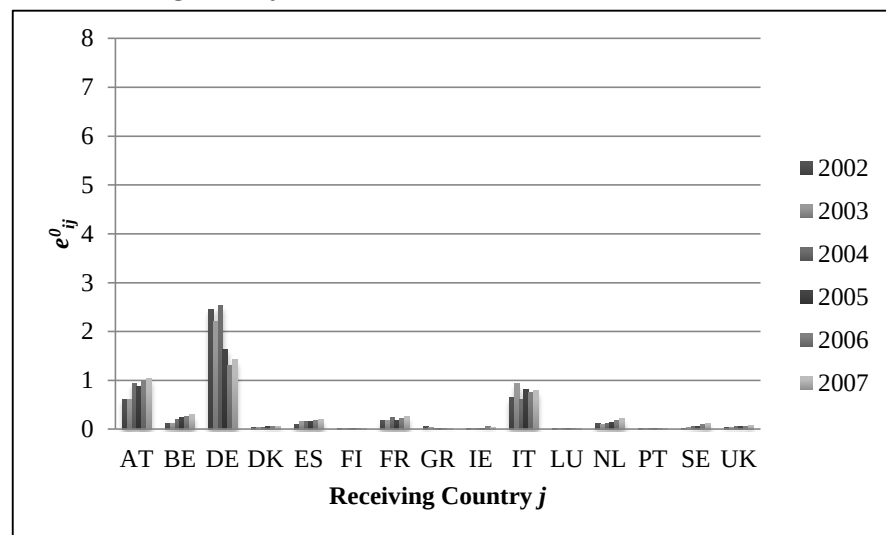
Panel A: Sending Country i = Bulgaria



Panel B: Sending Country i = Czech Republic



Panel C: Sending Country i = Slovenia



Panel D: Sending Country i = Estonia

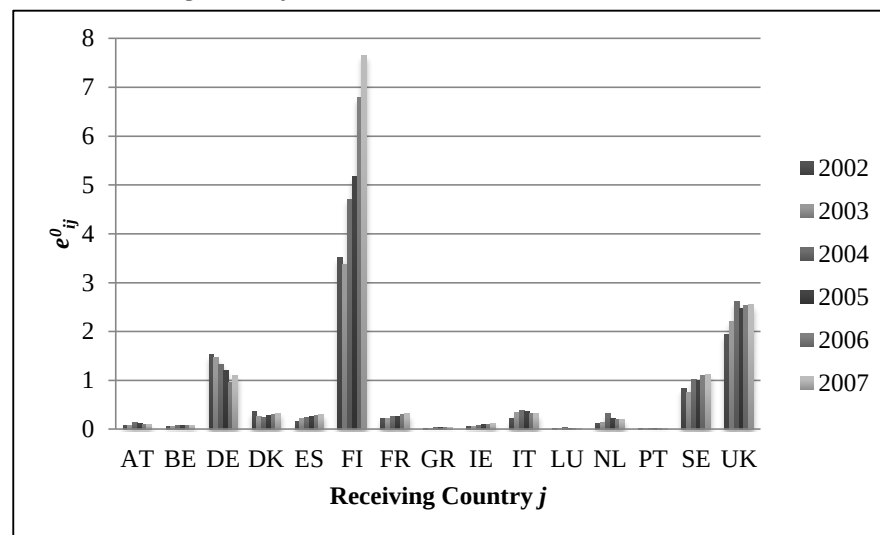
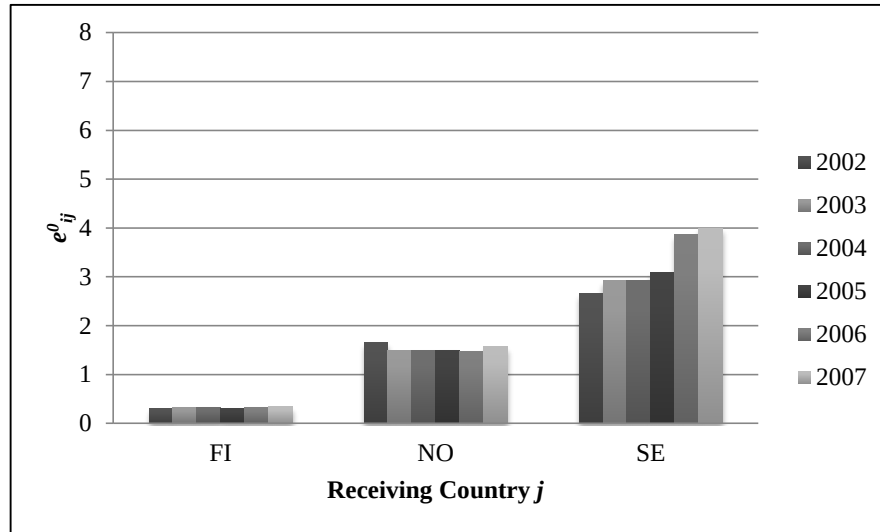
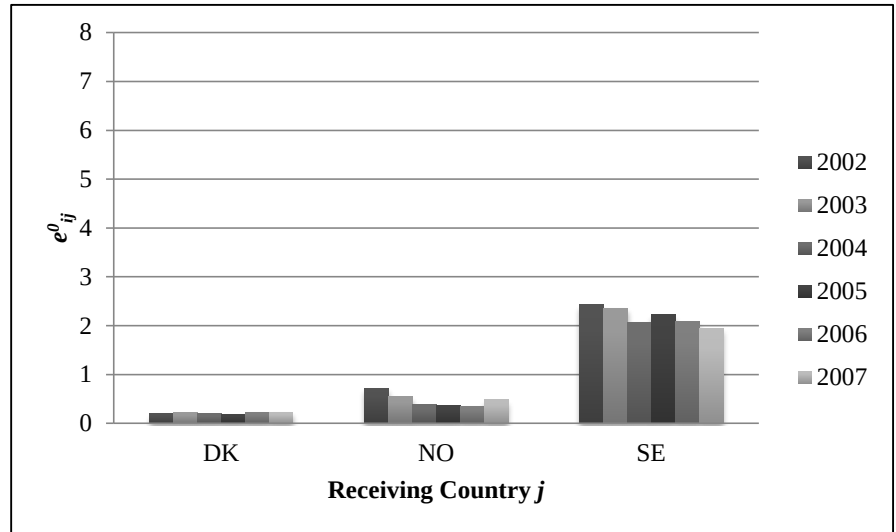


Figure 5: Waiting Time of International Migration among Nordic Countries, 2002-2007

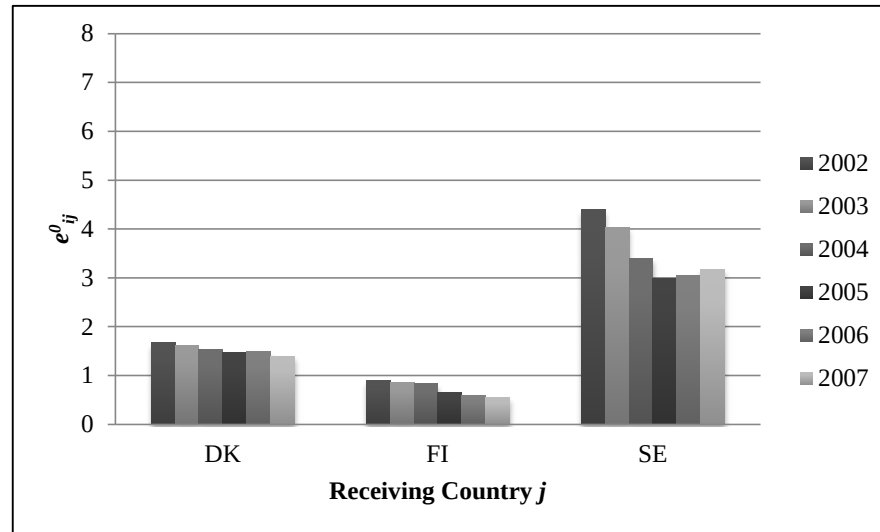
Panel A: Sending Country i = Denmark



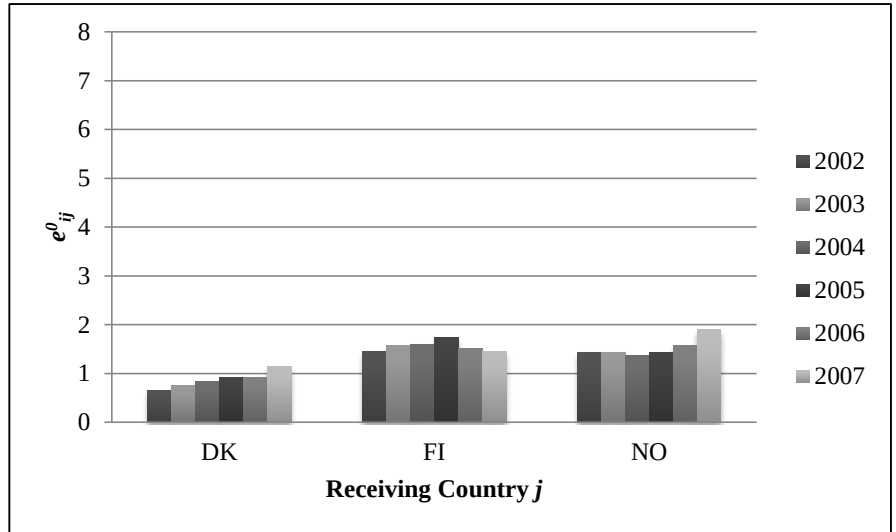
Panel B: Sending Country i = Finland



Panel C: Sending Country i = Norway



Panel D: Sending Country i = Sweden



Sending Country <i>i</i>																																	Receiving Country <i>j</i>																																
AT	BE	BG	CH	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HU	IE	IS	IT	LI	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK		e^0	e^0_{-ii}	e^0_{+ii}																															
AT- Austria	60.32	0.06	0.19	0.43	0.00	0.10	3.59	0.09	0.00	0.19	0.04	0.22	0.12	0.53	0.03	0.00	0.57	0.01	0.00	0.01	0.00	0.00	0.23	0.03	0.55	0.08	0.44	0.12	0.13	0.14	0.48	7.13	75.82	60.32	15.50																														
BE- Belgium	0.07	61.69	0.02	0.15	0.00	0.02	1.12	0.14	0.00	0.51	0.06	1.86	0.07	0.03	0.06	0.01	0.89	0.00	0.01	0.77	0.00	0.00	1.70	0.06	0.24	0.10	0.04	0.13	0.02	0.01	0.96	5.07	75.80	61.69	14.12																														
BG- Bulgaria	0.58	0.07	53.47	0.11	0.05	0.25	3.48	0.05	0.00	3.31	0.02	0.30	0.30	0.04	0.03	0.00	0.78	0.00	0.00	0.00	0.00	0.00	0.20	0.05	0.17	0.03	0.37	0.08	0.00	0.09	0.77	7.52	72.11	53.47	18.64																														
CH- Switzerland	0.52	0.18	0.05	48.43	0.01	0.07	4.31	0.27	0.00	1.53	0.13	2.53	0.14	0.07	0.10	0.01	7.18	0.01	0.01	0.09	0.00	0.01	0.65	0.11	0.37	0.15	0.10	0.33	0.20	0.08	2.21	6.75	76.60	48.43	28.17																														
CY- Cypress	0.08	0.11	2.06	0.14	20.13	0.03	0.80	0.02	0.01	0.31	0.05	0.42	4.95	0.31	0.13	0.00	0.22	0.00	0.00	0.00	0.00	0.04	0.11	0.02	0.13	0.02	1.59	0.14	0.00	0.01	3.79	36.31	71.93	20.13	51.79																														
CZ- Czech Republic	0.24	0.08	0.74	0.16	0.01	41.66	1.61	0.03	0.00	0.15	0.01	0.34	0.08	0.04	0.04	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.10	0.02	0.10	0.03	0.29	0.04	0.01	0.36	0.76	25.55	72.61	41.66	30.95																														
DE- Germany	0.38	0.13	0.18	0.60	0.01	0.05	61.93	0.10	0.01	0.34	0.04	0.54	0.49	0.37	0.08	0.00	0.71	0.00	0.01	0.06	0.01	0.00	0.32	0.05	1.46	0.27	0.35	0.11	0.05	0.04	0.68	6.39	75.75	61.93	13.82																														
DK- Denmark	0.13	0.23	0.02	0.34	0.00	0.03	1.36	57.89	0.06	0.33	0.31	0.69	0.13	0.05	0.13	0.36	0.33	0.00	0.08	0.03	0.04	0.00	0.32	1.65	0.21	0.06	0.04	2.65	0.00	0.03	1.05	6.59	75.15	57.89	17.26																														
EE- Estonia	0.08	0.06	0.01	0.08	0.01	0.01	1.53	0.36	52.68	0.16	3.51	0.22	0.03	0.03	0.06	0.02	0.22	0.00	0.08	0.01	0.23	0.00	0.12	0.34	0.06	0.02	0.02	0.83	0.00	0.00	1.94	8.44	71.18	52.68	18.50																														
ES- Spain	0.04	0.09	0.04	0.23	0.00	0.01	0.74	0.08	0.00	70.29	0.04	0.30	0.01	0.01	0.05	0.00	0.24	0.00	0.00	0.01	0.00	0.00	0.19	0.04	0.07	0.11	0.15	0.08	0.00	0.01	0.81	3.15	76.81	70.29	6.51																														
FI- Finland	0.17	0.16	0.01	0.30	0.00	0.02	1.11	0.21	0.20	0.30	66.49	0.31	0.06	0.09	0.09	0.02	0.30	0.00	0.11	0.01	0.03	0.00	0.30	0.72	0.06	0.02	0.02	2.43	0.00	0.01	0.44	2.27	76.25	66.49	9.76																														
FR- France	0.05	0.28	0.02	0.28	0.00	0.02	0.76	0.06	0.00	0.33	0.02	68.47	0.05	0.02	0.05	0.00	0.43	0.00	0.01</																																														

Note: The waiting time of international migration is a conditional life expectancy at age zero, defined as the total number of years, on average, that a migrant is expected to live in the receiving country j above age zero given prior residence in country i (for $i \neq j$) at age zero (Willekens and Rogers 1978; see also Palloni 2001).

Sending Country <i>i</i>		Receiving Country <i>j</i>																																	
	AT	BE	BG	CH	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HU	IE	IS	IT	LI	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK		e^0	e^0_{ij}	e^0_{ji}
AT- Austria	57.41	0.08	0.27	0.41	0.01	0.14	3.34	0.07	0.00	0.29	0.04	0.24	0.16	0.68	0.04	0.00	0.70	0.00	0.01	0.01	0.00	0.00	0.20	0.03	0.57	0.08	0.74	0.13	0.08	0.17	0.57	9.07	75.54	57.41	18.13
BE- Belgium	0.10	61.38	0.02	0.14	0.01	0.03	1.07	0.14	0.00	0.69	0.07	1.80	0.07	0.03	0.06	0.00	0.90	0.00	0.00	0.77	0.01	0.00	1.68	0.05	0.25	0.11	0.04	0.14	0.02	0.02	1.10	5.27	75.94	61.38	14.56
BG- Bulgaria	0.66	0.07	51.23	0.12	0.08	0.31	3.43	0.04	0.00	4.30	0.02	0.31	0.29	0.04	0.03	0.00	2.18	0.00	0.00	0.00	0.00	0.00	0.21	0.04	0.18	0.03	0.33	0.07	0.00	0.10	0.87	7.57	72.54	51.23	21.31
CH- Switzerland	0.60	0.16	0.05	49.13	0.01	0.08	3.91	0.24	0.00	1.86	0.16	2.23	0.13	0.07	0.10	0.01	7.05	0.00	0.01	0.08	0.01	0.00	0.54	0.13	0.36	0.13	0.09	0.36	0.16	0.09	2.39	6.61	76.75	49.13	27.62
CY- Cypress	0.09	0.09	1.55	0.11	28.60	0.04	0.75	0.06	0.01	0.34	0.06	0.35	3.86	0.22	0.11	0.00	0.47	0.00	0.00	0.00	0.00	0.03	0.11	0.03	0.17	0.02	1.07	0.13	0.00	0.01	5.84	29.10	73.22	28.60	44.62
CZ- Czech Republic	0.28	0.09	0.76	0.15	0.01	39.87	1.41	0.04	0.00	0.22	0.01	0.36	0.08	0.04	0.05	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.09	0.02	0.11	0.03	0.27	0.03	0.01	0.44	0.91	26.94	72.64	39.87	32.77
DE- Germany	0.49	0.13	0.20	0.54	0.01	0.07	61.79	0.09	0.01	0.46	0.04	0.52	0.45	0.34	0.07	0.01	0.82	0.00	0.02	0.06	0.01	0.00	0.32	0.05	1.56	0.22	0.34	0.12	0.04	0.04	0.79	6.22	75.85	61.79	14.06
DK- Denmark	0.15	0.23	0.03	0.31	0.01	0.04	1.30	57.49	0.05	0.46	0.33	0.64	0.11	0.05	0.11	0.35	0.34	0.00	0.08	0.03	0.03	0.00	0.33	1.49	0.23	0.08	0.05	2.92	0.01	0.03	1.22	6.84	75.34	57.49	17.85
EE- Estonia	0.09	0.06	0.01	0.07	0.02	0.02	1.46	0.27	53.35	0.22	3.37	0.21	0.03	0.03	0.06	0.01	0.35	0.00	0.17	0.01	0.34	0.00	0.13	0.21	0.06	0.02	0.02	0.76	0.00	0.00	2.22	8.05	71.62	53.35	18.27
ES- Spain	0.05	0.15	0.07	0.35	0.00	0.01	0.71	0.08	0.00	66.92	0.05	0.52	0.02	0.01	0.09	0.00	0.27	0.00	0.01	0.01	0.00	0.00	0.20	0.04	0.08	0.18	0.24	0.09	0.00	0.01	0.94	5.41	76.52	66.92	9.59
FI- Finland	0.19	0.17	0.00	0.29	0.01	0.03	1.11	0.22	0.18	0.40	67.08	0.24	0.05	0.07	0.07	0.01	0.32	0.00	0.03	0.01	0.06	0.00	0.27	0.55	0.07	0.02	0.01	2.36	0.00	0.01	0.50	2.10	76.42	67.08	9.34
FR- France	0.05	0.28	0.02	0.24	0.00	0.02	0.73	0.06	0.00	0.44	0.02	68.20	0.05	0.02	0.05	0.00	0.40	0.00																	

Note: The waiting time of international migration is a conditional life expectancy at age zero, defined as the total number of years, on average, that a migrant is expected to live in the receiving country j above age zero given prior residence in country i (for $i \neq j$) at age zero (Willekens and Rogers 1978; see also Palloni 2001).

Appendix 3: Waiting Time of International Migration (in years) for Sending-Receiving Country Pairs, 2004

Sending Country <i>i</i>	Receiving Country <i>j</i>																																		
	AT	BE	BG	CH	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HU	IE	IS	IT	LI	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK		e^0	e^0_{ij}	e^0_{ji}
AT- Austria	55.78	0.08	0.33	0.41	0.01	0.12	3.28	0.07	0.00	0.33	0.04	0.29	0.16	1.36	0.05	0.00	0.53	0.01	0.02	0.02	0.00	0.00	0.20	0.04	0.74	0.09	0.95	0.10	0.09	0.23	0.68	9.66	75.66	55.78	19.88
BE- Belgium	0.12	60.84	0.02	0.14	0.01	0.02	1.10	0.12	0.00	0.70	0.07	2.17	0.07	0.04	0.07	0.00	0.61	0.00	0.01	0.75	0.00	0.00	1.63	0.05	0.33	0.12	0.05	0.14	0.01	0.02	1.32	5.71	76.29	60.84	15.44
BG- Bulgaria	0.67	0.08	50.98	0.12	0.09	0.27	3.02	0.04	0.00	4.32	0.03	0.37	0.33	0.06	0.04	0.00	2.11	0.00	0.03	0.01	0.00	0.00	0.19	0.04	0.23	0.03	0.38	0.06	0.01	0.14	1.06	7.98	72.69	50.98	21.72
CH- Switzerland	0.71	0.19	0.06	48.75	0.01	0.08	4.33	0.28	0.01	1.94	0.19	2.89	0.16	0.12	0.13	0.01	4.36	0.01	0.02	0.09	0.01	0.01	0.55	0.10	0.51	0.16	0.11	0.31	0.16	0.12	3.01	7.46	76.84	48.75	28.09
CY- Cypress	0.09	0.11	1.79	0.12	22.13	0.04	0.73	0.02	0.01	0.44	0.06	0.41	4.49	0.79	0.13	0.00	0.56	0.00	0.01	0.00	0.00	0.04	0.14	0.03	0.20	0.02	1.23	0.13	0.00	0.02	5.65	33.42	72.84	22.13	50.71
CZ- Czech Republic	0.33	0.09	0.76	0.15	0.01	39.68	1.42	0.04	0.00	0.23	0.01	0.37	0.08	0.08	0.05	0.00	0.37	0.00	0.01	0.00	0.00	0.00	0.13	0.02	0.14	0.03	0.27	0.03	0.00	0.57	1.08	26.92	72.89	39.68	33.21
DE- Germany	0.60	0.14	0.20	0.58	0.01	0.06	60.18	0.10	0.02	0.48	0.05	0.58	0.51	0.72	0.08	0.01	0.85	0.00	0.04	0.06	0.01	0.00	0.35	0.06	2.05	0.22	0.35	0.13	0.04	0.06	0.96	6.60	76.08	60.18	15.90
DK- Denmark	0.16	0.20	0.03	0.32	0.01	0.03	1.30	56.62	0.05	0.47	0.33	0.69	0.11	0.09	0.12	0.42	0.32	0.00	0.09	0.02	0.07	0.00	0.31	1.50	0.30	0.06	0.05	2.93	0.00	0.05	1.48	7.37	75.51	56.62	18.89
EE- Estonia	0.14	0.07	0.01	0.08	0.03	0.02	1.33	0.25	51.57	0.24	4.71	0.26	0.03	0.06	0.08	0.02	0.38	0.00	0.09	0.04	0.41	0.00	0.33	0.30	0.09	0.02	0.03	1.01	0.00	0.01	2.62	7.94	72.16	51.57	20.59
ES- Spain	0.06	0.14	0.06	0.30	0.00	0.01	0.74	0.08	0.00	67.52	0.05	0.48	0.02	0.02	0.08	0.00	0.26	0.00	0.03	0.01	0.00	0.00	0.21	0.04	0.11	0.17	0.22	0.09	0.00	0.01	1.14	5.04	76.91	67.52	9.38
FI- Finland	0.21	0.18	0.01	0.23	0.01	0.02	1.10	0.20	0.48	0.40	66.33	0.36	0.07	0.14	0.11	0.02	0.24	0.00	0.06	0.00	0.07	0.00	0.25	0.38	0.09	0.03	0.02	2.07	0.00	0.02	0.59	2.70	76.39	66.33	10.06
FR- France	0.06	0.33	0.02	0.27	0.00	0.02	0.74	0.06	0.00	0.45	0.02	67.87	0.05	0.03	0.07	0.00	0.32	0.00	0.01	0.17	0.00	0.01	0.16	0.02	0.20	0.18	0.05	0.06	0.00	0.02	1.17	4.42	76.81	67.87	8.93
GR- Greece	0.15	0.06	0.12	0.07	0.52	0.02	2.22	0.06	0.00	0.16	0.03	0.27	66.24	0.04	0.03	0.00	0.28	0.00	0.01	0.01	0.00	0.01	0.28	0.02	0.32	0.02	0.14	0.16	0.01	0.02	1.31	4.17	76.71	66.24	10.47
HU- Hungary	0.91	0.10	0.04	0.14	0.02	0.04	3.46	0.05	0.00	0.22	0.04	0.49	0.06	57.27	0.05	0.00	0.34	0.00	0.00	0.01	0.00	0.00	0.20	0.02	0.14	0.04	0.38	0.08	0.01	0.21	0.94	7.23	72.50	57.27	15.23
IE- Ireland	0.12	0.40	0.05	0.35	0.02	0.04	0.90	0.12	0.01	0.84	0.07	1.14	0.11	0.05	56.80	0.00	0.48	0.00	0.18	0.02	0.03	0.01	0.34	0.05	1.05	0.09	0.11	0.17	0.00	0.03	4.17	8.09	75.84	56.80	19.03
IS- Iceland	0.21	0.12	0.01	0.20	0.01	0.03	1.84	9.69	0.03	0.85	0.52	0.46	0.05	0.02	0.07	42.68	0.38	0.00	0.06	0.01	0.02	0.00	0.70	2.29	1.14	0.17	0.03	4.07	0.00	0.04	3.95	7.00	76.65	42.68	33.97
IT- Italy	0.11	0.17	0.01	1.01	0.00	0.02	0.93	0.04	0.00	0.38	0.02	0.47	0.04	0.03	0.05	0.00	71.09	0.00	0.01	0.02	0.00	0.00	0.11	0.01	0.22	0.03	0.07	0.04	0.02	0.02	0.45	2.41	77.79	71.09	6.70
LI- Liechtenstein	5.12	0.02	0.03	1.82	0.00	0.02	3.64	0.28	0.00	0.55	0.09	2.06	0.04	0.16	0.01	0.00	0.57	54.17	0.00	0.01	0.00	0.00	0.04	0.01	0.57	0.02	0.09	0.02	0.01	0.03	0.17	7.66	77.21	54.17	23.04
LT- Lithuania	0.17	0.16	0.05	0.22	0.01	0.04	2.82	0.54	0.05	1.26	0.10	0.44	0.08	0.02	1.44	0.08	0.62	0.00	49.67	0.01	0.43	0.00	0.40	0.37	0.48	0.15	0.02	0.41	0.00	0.02	2.35	9.55	72.00	49.67	22.32
LU- Luxembourg	0.36	8.86	0.04	1.30	0.01	0.02	5.95	0.58	0.02	0.68	0.32	10.35	0.16	0.08	0.38	0.04	1.31	0.00	0.01	30.12	0.00	0.00	0.91	0.07	0.44	4.48	0.06	0.45	0.06	0.02	3.82	5.50	76.40	30.12	46.27
LV- Latvia	0.14	0.06	0.01	0.17	0.05	0.01	1.80	0.31	0.32	0.24	0.11	0.25	0.03	0.01	0.24	0.03	0.33	0.00	0.20	0.01	55.19	0.00	0.18	0.13	0.12	0.01	0.01	0.26	0.00	0.01	1.67	9.03	70.93	55.19	15.74
MT- Malta	0.05	0.17	0.02	0.11	0.04	0.01	0.44	0.04	0.00	0.13	0.01	1.57	0.04	0.06	0.17	0.00	0.76	0.00	0.00	0.01	0.00	52.08	0.32	0.01	0.07	0.03	0.02	0.15	0.00	0.02	4.09	14.99	75.41	52.08	23.33
NL- Netherlands	0.17	1.68	0.02	0.25	0.01	0.05	1.80	0.12	0.00	0.65	0.07	0.74	0.11	0.10	0.11	0.01	0.32	0.00	0.01	0.03	0.00	0.01	61.58	0.10	0.40	0.14	0.04	0.18	0.01	0.03	1.56	6.13	76.46	61.58	14.88
NO- Norway	0.09	0.10	0.02	0.14	0.00	0.02	0.79	1.53	0.04	0.80	0.83	0.33	0.05	0.04	0.05	0.15	0.17	0.00	0.11	0.00	0.03	0.00	0.33	61.98	0.41	0.04	0.04	3.40	0.00	0.06	1.44	4.03	77.05	61.98	15.07
PL- Poland	0.55	0.18	0.03	0.17	0.03	0.11	6.66	0.08	0.00	0.47	0.02	0.41	0.12	0.02	0.61	0.05	1.18	0.00	0.02	0.01	0.01	0.00	0.40	0.10	55.62	0.03	0.04	0.20	0.01	0.08	2.88	4.13	74.20	55.62	18.59
PT- Portugal	0.10	0.16	0.02	0.11	0.00	0.01	1.36	0.05	0.00	2.39	0.02	1.38	0.02	0.01	0.03	0.01	0.21	0.00	0.02	0.51	0.00	0.00	0.42	0.03	0.07	62.94	0.03	0.06	0.00	0.01	1.45	4.57	76.00	62.94	13.06
RO- Romania	0.60	0.08	0.07	0.16	0.03	0.07	1.90	0.03	0.00	6.39	0.01	0.47	0.11	0.42	0.04	0.00	9.23	0.00	0.00	0.01	0.00	0.00	0.10	0.02	0.08	0.04	44.93	0.05	0.01	0.20	0.30	7.62	72.99	44.93	28.06
SE- Sweden	0.19	0.13	0.01	0.28	0.02	0.03	1.01	0.84	0.04	0.49	1.60	0.42	0.19	0.10	0.09	0.09	0.24	0.00	0.05	0.02	0.03	0.01	0.26	1.36	0.49	0.04	0.02	63.72	0.02	0.03	1.43	4.13	77.39	63.72	13.66
SI- Slovenia	0.94	0.20	0.01	0.51	0.00	0.03	2.53	0.03	0.00	0.15	0.00	0.24	0.02	0.08	0.02	0.00	0.62	0.00	0.00	0.01	0.00	0.00	0.13	0.01	0.08	0.01	0.02	0.06	66.89	0.07	0.05	2.69	75.42	66.89	8.52
SK- Slovakia	1.49	0.11	0.12	1.17	0.09	5.24	3.52	0.04	0.00	0.30	0.01	0.38	0.08	0.52	0.13	0.01	0.57	0.00	0.01	0.01	0.00	0.00	0.23	0.05	0.18	0.03	0.10	0.06	0.01	49.97	2.33	7.02	73.78	49.97	23.81
UK- United Kingdom	0.08	0.09	0.03	0.20	0.08	0.03	0.56	0.13	0.01	1.33	0.06	1.05	0.26	0.18	0.53	0.01	0.38	0.00	0.05	0.01	0.01	0.02	0.30	0.08	0.27	0.10	0.04	0.16	0.01	0.02	62.04	7.83	75.93	62.04	13.89
..... Rest of World	0.03	0.02	0.00	0.02	0.00	0.02	0.11	0.01	0.00	0.10	0.00	0.07	0.01	0.01	0.01	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.02	0.01	0.01	0.01	0.00	0.00	0.15	57.20	58.04	57.20	0.84

Source: Authors' calculations

Note: The waiting time of international migration is a conditional life expectancy at age zero, defined as the total number of years, on average, that a migrant is expected to live in the receiving country *j* above age zero given prior residence in country *i* (for *i* ≠ *j*) at age zero (Willekens and Rogers 1978; see also Palloni 2001).

Sending Country <i>i</i>	Receiving Country <i>j</i>																														e^0	e^0_{ji}	e^0_{ji}		
	AT	BE	BG	CH	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HU	IE	IS	IT	LI	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK				
AT- Austria	55.13	0.11	0.36	0.39	0.01	0.18	3.31	0.07	0.01	0.35	0.05	0.33	0.16	0.79	0.04	0.01	0.46	0.01	0.01	0.01	0.00	0.00	0.20	0.04	0.71	0.10	1.02	0.09	0.13	0.49	0.64	10.49	75.69	55.13	20.57
BE- Belgium	0.11	60.14	0.02	0.15	0.01	0.03	1.10	0.12	0.00	0.74	0.07	2.43	0.08	0.03	0.09	0.01	0.59	0.00	0.02	0.71	0.01	0.00	1.66	0.06	0.32	0.12	0.05	0.13	0.01	0.05	1.26	6.20	76.31	60.14	16.17
BG- Bulgaria	0.57	0.09	51.04	0.12	0.08	0.36	2.40	0.04	0.00	4.64	0.02	0.42	0.38	0.05	0.05	0.00	1.36	0.00	0.02	0.00	0.00	0.00	0.18	0.04	0.21	0.04	0.45	0.05	0.00	0.30	1.02	8.71	72.67	51.04	21.63
CH- Switzerland	0.65	0.21	0.06	48.29	0.01	0.11	4.32	0.26	0.01	2.01	0.19	3.18	0.16	0.08	0.15	0.01	4.10	0.01	0.02	0.06	0.02	0.01	0.47	0.12	0.48	0.18	0.12	0.36	0.24	0.26	2.79	7.96	76.90	48.29	28.61
CY- Cypress	0.10	0.12	2.12	0.12	16.44	0.05	0.66	0.03	0.01	0.52	0.03	0.47	5.34	0.32	0.14	0.00	0.46	0.00	0.01	0.00	0.01	0.05	0.13	0.01	0.16	0.02	1.51	0.09	0.01	0.05	3.91	39.18	72.12	16.44	55.68
CZ- Czech Republic	0.36	0.07	0.60	0.14	0.01	44.24	1.53	0.05	0.00	0.24	0.01	0.31	0.07	0.04	0.04	0.00	0.29	0.00	0.02	0.01	0.00	0.00	0.14	0.02	0.15	0.02	0.22	0.04	0.01	1.46	1.10	22.18	73.39	44.24	29.15
DE- Germany	0.67	0.13	0.18	0.58	0.01	0.08	61.15	0.11	0.01	0.51	0.05	0.53	0.43	0.35	0.07	0.01	0.82	0.00	0.04	0.06	0.02	0.00	0.37	0.08	2.03	0.18	0.37	0.13	0.05	0.14	0.92	6.22	76.30	61.15	15.15
DK- Denmark	0.18	0.20	0.03	0.31	0.01	0.05	1.30	56.36	0.04	0.50	0.32	0.64	0.11	0.08	0.12	0.50	0.26	0.00	0.09	0.01	0.08	0.01	0.29	1.50	0.29	0.06	0.06	3.09	0.01	0.10	1.42	7.77	75.77	56.36	19.41
EE- Estonia	0.11	0.07	0.01	0.08	0.02	0.02	1.21	0.29	51.54	0.25	5.17	0.27	0.03	0.03	0.09	0.02	0.37	0.00	0.07	0.00	0.69	0.00	0.23	0.39	0.08	0.02	0.03	1.00	0.00	0.03	2.46	7.98	72.58	51.54	21.04
ES- Spain	0.06	0.17	0.08	0.33	0.00	0.01	0.71	0.09	0.00	66.13	0.05	0.58	0.02	0.02	0.10	0.00	0.24	0.00	0.04	0.01	0.00	0.00	0.20	0.05	0.11	0.21	0.27	0.09	0.00	0.02	1.07	6.15	76.84	66.13	10.71
FI- Finland	0.20	0.15	0.01	0.27	0.01	0.03	1.09	0.19	0.31	0.42	66.99	0.25	0.06	0.04	0.10	0.02	0.23	0.0																	

Note: The waiting time of international migration is a conditional life expectancy at age zero, defined as the total number of years, on average, that a migrant is expected to live in the receiving country j above age zero given prior residence in country i (for $i \neq j$) at age zero (Willekens and Rogers 1978; see also Palloni 2001).

Appendix 5: Waiting Time of International Migration (in years) for Sending-Receiving Country Pairs, 2006

Sending Country <i>i</i>	Receiving Country <i>j</i>																														<i>e</i> ⁰	<i>e</i> ⁰ _{<i>ij</i>}	<i>e</i> ⁰ _{<i>ji</i>}		
	AT	BE	BG	CH	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HU	IE	IS	IT	LI	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK				UK	
AT- Austria	52.19	0.12	0.34	0.65	0.01	0.20	3.48	0.09	0.01	0.41	0.05	0.40	0.19	0.98	0.08	0.01	0.61	0.03	0.01	0.01	0.01	0.00	0.22	0.05	0.73	0.11	1.05	0.13	0.23	0.65	0.68	12.05	75.79	52.19	23.59
BE- Belgium	0.10	58.79	0.03	0.14	0.01	0.04	1.03	0.12	0.00	0.79	0.08	2.58	0.08	0.04	0.10	0.01	0.72	0.00	0.02	0.56	0.02	0.00	1.77	0.06	0.32	0.11	0.06	0.15	0.03	0.07	1.30	7.24	76.35	58.79	17.56
BG- Bulgaria	0.48	0.11	49.29	0.14	0.06	0.37	2.01	0.04	0.00	4.99	0.02	0.50	0.38	0.05	0.06	0.00	1.61	0.00	0.02	0.00	0.00	0.00	0.19	0.04	0.21	0.05	0.49	0.06	0.00	0.38	1.06	10.14	72.81	49.29	23.52
CH- Switzerland	0.67	0.23	0.07	45.78	0.01	0.12	4.48	0.29	0.01	2.10	0.18	3.32	0.16	0.10	0.17	0.01	5.15	0.01	0.03	0.04	0.02	0.01	0.58	0.13	0.50	0.19	0.13	0.35	0.15	0.33	2.75	8.89	76.92	45.78	31.14
CY- Cypress	0.07	0.11	1.80	0.11	21.60	0.05	0.64	0.04	0.01	0.52	0.05	0.44	4.65	0.32	0.13	0.00	0.44	0.00	0.02	0.00	0.00	0.04	0.16	0.03	0.21	0.02	1.25	0.18	0.02	0.07	5.05	35.07	73.10	21.60	51.50
CZ- Czech Republic	0.31	0.09	0.73	0.16	0.01	38.39	1.29	0.05	0.00	0.27	0.02	0.39	0.08	0.05	0.05	0.00	0.32	0.00	0.01	0.00	0.01	0.00	0.14	0.03	0.14	0.03	0.26	0.06	0.01	1.70	1.10	27.49	73.22	38.39	34.84
DE- Germany	0.68	0.14	0.15	0.64	0.01	0.09	61.01	0.13	0.01	0.56	0.05	0.53	0.40	0.35	0.09	0.01	0.81	0.00	0.04	0.06	0.02	0.00	0.41	0.10	2.04	0.18	0.37	0.18	0.04	0.18	0.98	6.27	76.53	61.01	15.52
DK- Denmark	0.14	0.19	0.03	0.25	0.01	0.06	1.25	55.46	0.04	0.54	0.33	0.58	0.10	0.09	0.12	0.57	0.31	0.00	0.07	0.03	0.07	0.01	0.33	1.48	0.31	0.07	0.06	3.87	0.01	0.14	1.49	7.97	75.97	55.46	20.51
EE- Estonia	0.10	0.08	0.01	0.08	0.02	0.03	0.97	0.30	49.88	0.28	6.79	0.30	0.03	0.04	0.10	0.03	0.32	0.00	0.06	0.01	0.40	0.00	0.19	0.45	0.08	0.02	0.03	1.10	0.00	0.04	2.53	8.63	72.91	49.88	23.03
ES- Spain	0.06	0.32	0.15	0.57	0.00	0.02	0.70	0.09	0.00	58.23	0.06	1.12	0.04	0.03	0.18	0.00	0.32	0.00	0.04	0.01	0.00	0.00	0.23	0.05	0.12	0.40	0.49	0.11	0.01	0.04	1.09	11.87	76.35	58.23	18.12
FI- Finland	0.21	0.14	0.01	0.22	0.00	0.04	0.99	0.23	0.37	0.46	67.31	0.29	0.04	0.04	0.16	0.02	0.26	0.00	0.03	0.01	0.06	0.01	0.24	0.36	0.09	0.02	0.01	2.08	0.00	0.05	0.59	2.46	76.81	67.31	9.50
FR- France	0.06	0.41	0.03	0.28	0.00	0.03	0.76	0.07	0.00	0.52	0.03	66.32	0.06	0.03	0.09	0.00	0.37	0.00	0.01	0.15	0.00	0.01	0.19	0.03	0.20	0.23	0.06	0.07	0.01	0.06	1.16	5.63	76.90	66.32	10.58
GR- Greece	0.12	0.07	0.12	0.07	0.37	0.03	1.84	0.05	0.00	0.18	0.03	0.30	66.32	0.03	0.04	0.00	0.31	0.00	0.01	0.01	0.00	0.01	0.35	0.03	0.32	0.02	0.15	0.20	0.00	0.05	1.32	4.70	77.04	66.32	10.72
HU- Hungary	1.02	0.12	0.05	0.16	0.02	0.09	3.60	0.07	0.00	0.27	0.03	0.59	0.07	55.26	0.07	0.00	0.34	0.00	0.00	0.01	0.00	0.00	0.19	0.04	0.15	0.04	0.44	0.15	0.01	0.57	0.99	8.60	72.93	55.26	17.67
IE- Ireland	0.10	0.52	0.06	0.37	0.02	0.05	0.90	0.12	0.01	0.92	0.10	1.47	0.13	0.05	54.29	0.00	0.40	0.00	0.70	0.03	0.14	0.01	0.30	0.05	0.98	0.12	0.13	0.21	0.00	0.07	3.90	9.90	76.06	54.29	21.77
IS- Iceland	0.28	0.15	0.01	0.19	0.00	0.05	1.50	9.02	0.05	0.95	0.77	0.55	0.05	0.02	0.09	41.45	0.48	0.00	0.12	0.01	0.09	0.01	0.51	2.29	1.20	0.22	0.04	4.29	0.01	0.18	3.85	8.28	76.73	41.45	35.27
IT- Italy	0.10	0.17	0.02	0.80	0.00	0.03	0.85	0.05	0.00	0.44	0.02	0.45	0.04	0.02	0.04	0.00	71.35	0.00	0.01	0.01	0.00	0.01	0.12	0.02	0.21	0.03	0.07	0.05	0.03	0.07	0.45	2.62	78.09	71.35	6.75
LI- Liechtenstein	2.46	0.03	0.02	1.62	0.00	0.04	3.32	0.25	0.00	0.62	0.01	2.21	0.03	0.04	0.02	0.00	0.77	55.64	0.00	0.01	0.00	0.00	0.04	0.01	0.58	0.02	0.06	0.02	0.01	0.21	0.14	8.77	76.95	55.64	21.30
LT- Lithuania	0.22	0.15	0.08	0.12	0.01	0.05	2.84	0.81	0.04	1.50	0.12	0.46	0.07	0.02	1.89	0.12	0.52	0.00	49.05	0.01	0.52	0.00	0.28	0.97	0.52	0.11	0.03	0.83	0.00	0.05	2.42	8.04	71.85	49.05	22.80
LU- Luxembourg	0.37	8.03	0.03	1.03	0.00	0.02	7.15	0.48	0.02	0.73	0.29	9.98	0.13	0.11	0.22	0.05	1.44	0.00	0.06	32.27	0.02	0.00	0.93	0.06	0.45	3.56	0.09	0.41	0.05	0.07	3.69	5.09	76.84	32.27	44.57
LV- Latvia	0.08	0.09	0.01	0.18	0.03	0.02	1.51	0.41	0.41	0.31	0.15	0.79	0.04	0.03	0.85	0.04	0.33	0.00	0.26	0.01	47.04	0.00	0.15	0.29	0.12	0.04	0.02	0.44	0.00	0.05	1.63	15.73	71.07	47.04	24.03
MT- Malta	0.07	0.20	0.02	0.10	0.02	0.02	0.70	0.12	0.00	0.17	0.01	1.76	0.05	0.03	0.21	0.00	1.10	0.00	0.01	0.01	0.01	48.89	0.46	0.03	0.08	0.04	0.02	0.14	0.02	0.10	3.98	17.13	75.49	48.89	26.60
NL- Netherlands	0.18	2.07	0.03	0.31	0.01	0.07	1.90	0.13	0.01	0.75	0.07	0.84	0.14	0.08	0.14	0.01	0.33	0.00	0.02	0.03	0.01	0.00	59.27	0.16	0.40	0.19	0.05	0.27	0.01	0.09	1.57	7.57	76.70	59.27	17.43
NO- Norway	0.08	0.12	0.03	0.14	0.00	0.04	0.70	1.49	0.03	0.92	0.60	0.32	0.06	0.02	0.06	0.20	0.22	0.00	0.13	0.00	0.04	0.01	0.35	62.43	0.41	0.05	0.05	3.05	0.00	0.17	1.44	4.21	77.36	62.43	14.93
PL- Poland	0.43	0.39	0.04	0.28	0.02	0.15	7.03	0.19	0.00	0.53	0.03	0.84	0.22	0.05	1.32	0.07	0.94	0.00	0.03	0.01	0.01	0.00	0.57	0.42	48.70	0.04	0.05	0.46	0.01	0.20	2.74	8.56	74.35	48.70	25.65
PT- Portugal	0.10	0.18	0.02	0.12	0.00	0.01	1.24	0.06	0.00	2.75	0.03	1.64	0.02	0.01	0.04	0.01	0.24	0.00	0.01	0.47	0.01	0.00	0.50	0.03	0.07	61.47	0.05	0.07	0.00	0.03	1.47	5.69	76.36	61.47	14.89
RO- Romania	0.48	0.10	0.09	0.15	0.02	0.12	1.75	0.03	0.00	6.94	0.02	0.55	0.11	0.21	0.06	0.00	6.91	0.00	0.01	0.00	0.00	0.00	0.10	0.02	0.08	0.06	46.14	0.05	0.00	0.53	0.29	8.59	73.42	46.14	27.28
SE- Sweden	0.22	0.16	0.01	0.28	0.01	0.04	0.92	0.93	0.05	0.56	1.51	0.48	0.25	0.07	0.12	0.12	0.25	0.00	0.06	0.01	0.05	0.02	0.30	1.58	0.49	0.06	0.03	62.03	0.02	0.08	1.40	5.32	77.45	62.03	15.42
SI- Slovenia	0.98	0.25	0.01	0.65	0.00	0.05	1.30	0.05	0.00	0.19	0.01	0.22	0.01	0.03	0.05	0.00	0.76	0.01	0.00	0.00	0.00	0.00	0.19	0.01	0.06	0.01	0.02	0.10	67.66	0.23	0.06	3.09	76.01	67.66	8.34
SK- Slovakia	1.46	0.20	0.17	1.80	0.06	6.16	3.40	0.06	0.00	0.39	0.01	0.68	0.13	0.56	0.24	0.01	0.61	0.00	0.01	0.01	0.01	0.00	0.32	0.12	0.21	0.05	0.15	0.09	0.02	42.72	2.27	12.01	73.92	42.72	31.20
UK- United Kingdom	0.08	0.11	0.04	0.20	0.05	0.04	0.55	0.12	0.01	1.48	0.07	1.20	0.30	0.13	0.60	0.01	0.38	0.00	0.13	0.01	0.03	0.02	0.29	0.08	0.27	0.11	0.04	0.18	0.01	0.07	60.26	9.16	76.02	60.26	15.75
..... Rest of World	0.02	0.02	0.00	0.02	0.00	0.02	0.08	0.01	0.00	0.12	0.01	0.09	0.01	0.01	0.01	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.02	0.01	0.01	0.02	0.00	0.01	0.14	58.01	58.84	58.01	0.83

Source: Authors' calculations

Note: The waiting time of international migration is a conditional life expectancy at age zero, defined as the total number of years, on average, that a migrant is expected to live in the receiving country *j* above age zero given prior residence in country *i* (for *i* ≠ *j*) at age zero (Willekens and Rogers 1978; see also Palloni 2001).

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