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Abstract

This paper analyses the determinants of outward migration decisions while focusing on CESEE countries and using data from the OeNB Euro Survey conducted by the Oesterrichische Nationalbank (OeNB), a data source that has yet to be exploited at the individual level. Applying a two-stage Heckman procedure, we identify the determinants of the intention to migrate, including age, gender, ties at home, household characteristics and income. In the second stage, we analyse the characteristics of those who expressed a desire to migrate and investigate the determinants of the choice of the respective destination, distinguishing between EU15, EU-CEE and extra-EU countries. The insights in this paper might help to inform fact-based migration and public policies in addition to laying some groundwork for further research (a) concerning the impact of new technologies and demographic trends on the intentions to migrate as well as (b) establishing a firmer link between the intention to migrate and actual migration.

Keywords: migration drivers, migration aspirations/desires, destination decision, choice model

JEL classification: F22, O15

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1. Introduction

The global migrant population has increased over the past decade, and there is also a growing number of individuals aspiring or planning to migrate (IOM 2021; Gallup 2023). Due to its economic implications, migration has become an important topic in economic discussions in two settings in particular: developed economies that are reliant on migrant labour (despite political disputes and resistance) and countries experiencing high emigration rates. These concerns are pronounced in Europe, where several demographic challenges – including ageing societies, shrinking workforces and labour shortages – are intensifying (Grieveson et al. 2019; Leitner and Stehrer 2019). Additionally, after experiencing periods of emigration to western EU nations post-EU accession, the Central and East European EU countries (EU-CEE) have witnessed wage increases due to favourable economic conditions as well as labour shortages arising from demographic trends that could mitigate further outward migration. However, wage gaps still exist and if emigration continues at its current pace, it could impede the economic growth of these countries. In this paper, we analyse the factors behind aspirations to migrate and the potential choice of the host country of migrants. Utilising extensive data compiled through the OeNB Euro Survey of the Oesterriechische Nationalbank (OeNB) on approximately 10,000 individuals across 10 countries in Central, East and Southeast Europe (CESEE), we investigate which individual- and country-level characteristics in both home and potential host countries affect their choice. To this end, we apply a two-stage Heckman procedure. While the first stage identifies the determinants behind the aspirations to migrate, the second stage analyses the characteristics of those who expressed a desire to migrate and investigates the determinants of the choice of the respective host economy.

In recent decades, there has been a growing interest in understanding determinants behind the aspirations and intentions to migrate, especially as they relate to periods of economic crisis (e.g. Bartolini et al. 2017; Triandafyllidou and Gropas 2014; Van Mol 2016) and shifts in migration regimes, such as the EU enlargement (e.g. Kahanec and Fabo 2013; Zaiceva and Zimmermann 2008; Fouarge and Ester 2008). Beyond these contexts, the ongoing transformation of labour markets driven by demographic shifts and technological change places migration at the forefront of economic debates. Robotics, automation, artificial intelligence and other cutting-edge technologies are bringing structural changes to economies and transforming labour markets, which in turn can have important impacts on migration flows (Ghodsi et al., in progress). Such changes shape people's migratory aspirations and capabilities (de Haas 2021), which can impact the volume of migration and bring about notable changes in the composition of migrant populations. In this context, routine-biased technological change (RBTC) has been affecting labour demand, increasing the demand for highly skilled workers but also for low-skilled manual workers in service sectors (de Vries et al. 2020; Goos and Manning 2007; Autor et al. 2003) as well as increasing wage inequality (Acemoglu and Restrepo 2022). RBTC's impact is particularly evident among immigrants, as besides roles requiring high skills, they often take up manual service roles in destination economies and attenuate the job and wage polarisation faced by natives (Mandelman and Zlate 2022; Basso et al. 2020), leading the native populations to experience more skill-biased technological change (Katz and Murphy 1992).

Understanding the determinants of migration is also very important for informed policy making. The desire to migrate, alongside the capability to do so, forms a prerequisite for actual migration decisions (Carling and Schewel 2020). Recognising this, policy makers are increasingly acknowledging the importance of micro-level survey data as a complement to analysis of historical and current migration flows as well as its potential to improve forecasting while also offering important insights for policy making (Tjaden et al. 2019). A deeper understanding of the drivers of migration aspirations facilitates the prioritisation of both migration and general public policy agendas (Carling and Mjelva 2021), which can mitigate potential negative effects and benefit the economic development of a country.

This study therefore contributes to the knowledge of determinants affecting the migration decision with a focus on CESEE outward migration and based on a data source at the individual level that has so far remained unexploited. The structure of the reminder of the paper is organised as follows: The next section provides a survey of the existing literature on the topic. The third section presents the data sources and the methodology employed in our analysis. The fourth section presents the descriptive statistics. The fifth section presents and discusses the estimation results. Lastly, section six provides concluding remarks.

2. Literature Review

Various theories seek to explain the determinants of migration. Considering the multifaceted nature of migration, an integration of diverse perspectives, analytical levels and theoretical assumptions is considered necessary to explain it adequately (see de Haas 2021; Massey et al. 1993). On the macro level, the neoclassical theory – notably prevalent among economists – suggests that migration is primarily driven by labour market differentials stemming from the uneven geographical distribution of capital and technologies (Todaro 1969; Fei and Ranis 1961; Lewis 1954). On the micro level, this is explained by Sjaastad's (1962) income maximisation approach, which highlights the rational decision making of individuals seeking to improve their economic prospects by moving to countries offering higher wages and better job opportunities. However, along with push-pull model (Lee 1966), this theory tends to oversimplify the migration process by overlooking the nuanced, non-linear dynamics between development and migration (Zelinsky 1971; Skeldon 1997), the role of relative deprivation (Stark and Bloom 1985), and other individual-level characteristics that can be important in the process of making a decision regarding migration. Thus, analysis of micro-level survey data provides an opportunity to explore these complexities and identify the diverse range of aspirations driving migration (Carling and Schewel 2020; de Haas 2021).

In recent decades, there has been a growing interest in understanding determinants behind the aspirations and intentions to migrate, especially given the rising availability of multinational survey data covering them. The concept of potential migration – essentially, the likelihood of moving – has been explored in scientific literature using a large number of terms, such as 'aspirations', 'desires', 'intentions' and 'expectations' (for an overview, see Carling and Collins, 2018). The essential aim of studies focusing on potential migration is to identify 'what migrants want' and explore different weightings of the benefits and costs of migration based on migrants' characteristics (ibid.). The research encompasses both individual- and country-level variables. Individual-level variables encompass various demographic, family-related, socioeconomic and other individual-level factors, such as personality traits and social networks, while the country-level variables include economic, political, institutional and other factors.

The analyses frequently incorporate a variety of individual demographic characteristics, such as age, gender and birthplace (to distinguish the foreign-born), alongside family-related factors, including marital status, partner's origin, parenthood, number of children, household size, whether the parents lived abroad and residential setting (urban vs. rural or by settlement sizes). The research indicates that younger individuals exhibit stronger migration aspirations (e.g. Migali and Scipioni 2019; Herz et al. 2019; Cai et al. 2014). Some studies focus exclusively on specific age groups, typically children and young adults (e.g. Milasi 2020; Williams et al. 2018, Herz et al. 2019; Milasi 2020). This focus is deemed important, as younger individuals (besides being the most mobile group) often face poorer labour market prospects compared to adults, especially in times of crisis, which can amplify the migration push factors.

Furthermore, the research has generally found a lower propensity to migrate among women compared to men (e.g. Grubanov-Boskovic et al. 2021; Docquier et al. 2020; Cai et al. 2014). However, certain studies reveal some peculiarities. For example, Bartolini et al. (2017) found gender not to be significant for migration aspirations of highly skilled individuals from Southern Europe. Additionally, Kahanec and Fabo (2013) noted that gender differences become more pronounced in response to the presence of

children in the household. Generally, family-related factors exhibit varying degrees of significance across studies. The research has often indicated that single individuals are more likely to aspire to migrate than those in any other marital-status group, while individuals with domestic partners are less likely to aspire to migrate (Docquier et al. 2020; Pesando et al. 2021; Manchin and Orazbayev 2018; Cai et al. 2014). Partners' attitudes on migration might also play an important role (van Dalen and Henkens 2012). The migratory experiences of parents, partners and friends have also been shown to be important in certain contexts (Herz et al. 2019). The presence of children in the family shows mixed effects, ranging from insignificant to positively correlated with desires to migrate and negatively correlated with plans to migrate (e.g. Docquier et al. 2020; Milasi 2020). Interestingly, residents of large cities often demonstrate higher migration aspirations (e.g. Cai et al. 2014; Van Mol 2016; Milasi 2020).

The most important socioeconomic variables are often those related to employment. These include employment status and position on the labour market (employed, unemployed, self-employed, early retired, student) and human capital endowments as reflected through the educational attainment level (lower, middle, higher), the type of occupation (white-collar, blue-collar or manual worker), and the skill level of the individual. Some studies also explore the importance of expectations of home and destination labour market conditions and personal career prospects. Most of the studies show that employed individuals tend to have a lower desire to migrate compared to those who are unemployed (e.g. Pesando et al. 2021; Milasi 2020; Migali and Scipioni 2019), which confirms its importance as a push factor.

Studies also frequently suggest that higher educational attainment levels are associated with a greater desire to migrate (e.g. Herz et al. 2019; Manchin and Orazbayev 2018; Cai et al. 2014). This suggests positive self-selection, which is expected when income is less dispersed and skills are not well rewarded, according to Borjas et al.'s (1992) interpretation of the Roy model. Docquier et al. (2014) attribute this to the fact that enhanced opportunities for realising migration potential are available to the highly educated. Additionally, van Dalen and Henkens (2012) show that expectations of labour market opportunities in the country of destination (i.e. of the chances of finding a job and having good career prospects there) are an important determinant of migration aspirations that act as a pull factor. On the other hand, Bartolini et al. (2017) emphasise that career opportunities and satisfaction with current employment conditions are especially important factors for potential European emigrants who are highly educated. Furthermore, Milasi (2020) shows that if individuals feel they cannot 'get ahead by working hard' in the country of origin, this might act as an important push factor, although this is also connected with the wealth of the individual. Additionally, Dao et al. (2018) note that the increasing emigration from developing countries can be driven by the changing skill compositions of their working-age populations.

Income and wealth as determinants of migration aspirations are typically assessed based on household income levels (often as the income quintile of the household), ownership of assets, and perceived standard of living. The relationship between income and migration intentions can be influenced by the level of migration cost relative to the individual's wealth and the credit constraint they might face (Dustman and Okatenko 2014). The expected bell-shaped migration transition curve (Zelinsky 1971) is important in this regard, as well as the individual's feeling of relative deprivation (Stark and Bloom 1985). As de Haas (2021) suggests, the relevance of migration theories may vary across different contexts, which recognises the diversity in migratory flows in terms of freedom and the motivations behind them. Specifically, the neoclassical theory may better explain the migration of highly skilled workers from relatively developed economies, where they face fewer restrictions on their movement.

'Having difficulties living on present income' and 'experiencing no improvement of living standard' can be important drivers behind migration aspirations (Milasi 2020). This is in line with the finding that those in higher quintiles of income distribution in developed economies have a lower desire to migrate, whereas this relationship is non-linear in midde-income economies (Migali and Scipioni 2019). Thus, while higher living standards are expected to decrease the desire to migrate, in some cases, there is a positive correlation between higher wealth and household income with the desire to migrate (Manchin and Orazbayev 2018; Grubanov-Boskovic 2020).The role of subjective well-being as a determinant of migration desires has been highlighted, even surpassing the influence of the relationship between income and migration aspiration in developed countries, whereas the income factor still predominates in poorer countries (Cai et al. 2014). Analysis of life satisfaction indicates that individuals who are less satisfied with life are more likely to aspire to migrate (e.g. Migali and Scipioni 2019; Otrachshenko and Popova 2014).

Macro-level determinants, including economic aspects (e.g. the level of development, tax policies, quality of governance, provision of public goods, and income inequality) as well as political circumstances (e.g. war and revolutions), can influence desires to migrate by impacting individuals' level of satisfaction with life (Otrachshenko and Popova 2014). Some of the macro-level variables included across the analyses are GDP per capita and its growth, the inflation rate, the Gini coefficient, remittances as a percentage of GDP, the unemployment rate, the Human Development Index ranking and population growth (e.g. Tjaden et al. 2019; Otrachshenko and Popova 2014). Furthermore, Raggl (2022) highlights the role of satisfaction with public service quality – particularly disatisfaction with social security, health and public infrastructure, and services aimed at business and regional development – in shaping migration intentions in CESEE countries.

Besides offering results of estimations by subsamples segmented according to certain individual-level characteristics (e.g. Manchin and Orazbayev 2018), the research has also often distinguished between the development level of the origin and destination countries (e.g. high- vs. middle- vs. low-income or OECD vs. non-OECD) (e.g. Docquier et al. 2020; Migali and Scipioni 2019; Gubert and Senne 2016). The distinction between Central and East European (CEE) and Western European countries made by Otrachshenko and Popova (2014) underscores the need for region-specific analysis, as socioeconomic factors can influence migration decisions differently depending on the context. Thus, it is important to explore the determinants of migration aspirations within specific geographical and economic settings while acknowledging that migratory intentions (and actions) are shaped by the macro-level context. These segmentations further help in gaining a better understanding of the nuanced motivations behind desires to migrate.

While intra-European migration has often been explained by economic factors, Bygnes and Flipo (2017) have highlighted political dissatisfaction as a significant factor influencing migration aspirations. Additionally, individual satisfaction with various dimensions of local amenities (e.g. public services, safeness and levels of corruption) can be important (Dustman and Okatenko 2014; Manchin and Orazbayev 2018; Milasi 2020), with a higher level of satisfaction leading to lower emigration desires. These findings suggest that boosting life satisfaction by enhancing macro-level economic and political conditions could reduce migration aspirations. Additionally, some other individual-level determinants, including personality characteristics (e.g. self-efficacy level, sensation seeking, and loss of national identity) (van Dalen and Henkens 2012; Williams et al. 2018) and cultural traits (Falco and Rotondi 2016; Docquier et al. 2020), appear to be important in some cases.

Social networks abroad are often found to be significant drivers of international migration intentions, with the presence of relatives or friends abroad often being an important indicator (e.g. Manchin and Orazbayev 2018; Herz et al. 2019; Cai et al. 2014). Online communication and internet use can further support migration aspirations and decision making, particularly in less developed countries (Dekker et al. 2016; Grubanov-Boskovic et al. 2021). Some studies highlight the role of the internet as a facilitator in the migration process, acting as a 'supportive agent' (Pesando et al. 2021) that plays an especially important role in the stage of preparing to migrate rather than shaping the desire itself (Grubanov-Boskovic et al. 2021). The internet enables easier access to information on housing, education and labour markets while also facilitating networking and the gathering of insider information (Thulin and Vilhelmson 2014). Additionally, access to these kinds of information can shape material aspirations and negatively affect subjective well-being (Lohmann 2015), which has additional implications for migration desires.

Research on potential migration that analyses various forms of migration aspirations and intentions has frequently employed quantitative methods to analyse a wide range of survey data. These data range from multinational longitudinal surveys to single-round surveys tailored to specific projects or initiatives (for an overview, see Carling and Mjelva 2021). A large number of studies have utilised the multinational and multiyear Gallup World Pool, which distinguishes between migration aspirations (wishes) and concrete plans (intentions) for migration (e.g. Pesando et al. 2021; Grubanov-Boskovic et al. 2021; Milasi 2020; Migali and Scipioni 2019; Tjaden et al. 2019; Manchin and Orazbayev 2018; Gubert and Senne 2016; Cai et al. 2014; Docquier et al. 2014; Dustmann and Okatenko 2014). Others have drawn on surveys tailored to particular regions of the world, such as the Eurobarometer (e.g. Herz et al. 2019; Van Mol 2016; Otrachshenko and Popova 2014; Kahanec and Fabo 2013), the Latinobarometro (e.g. Graham and Markowitz 2011) and the Arab Barometer (e.g. Pesando et al. 2021; Falco and Rotondi 2016), with some additional insights coming from ad hoc surveys conducted as part of certain initiatives or projects (e.g. Pesando et al. 2021; Bartolini et al. 2017; Triandafyllidou and Gropas 2014; van Dalen and Henkens 2012).

In the majority of quantitative migration studies, the decision to migrate is typically modelled as a discrete choice problem and analysed using either logit (e.g. Docquier et al. 2020; Herz et al. 2019; Migali and Scipioni 2019; Cai et al. 2014; Van Mol and Timmermann 2014; Otrachshenko and Popova 2014; Kahanec and Fabo 2013) or probit (e.g. Grubanov-Boskovic et al. 2021; Milasi 2020; Manchin and Orazbayev 2018; Falco and Rotondi 2016; Graham and Markowitz 2011) regression models based on estimations of maximum likelihood. These methods are often preferred due to their effectiveness in handling the binary nature of the primary variable of interest, which reflects the dichotomy of emigration considerations. Additionally, some studies have employed multinomial logit models for more complex choices, such as destination choices (e.g. Gubert and Senne 2016). To address potential endogeneity issues, some studies have used instrumental variables and propensity score matching (Manchin and Orazbayev 2018; Falco and Rotondi 2016). Some studies have used ordinary least squares (OLS) regression (e.g. Pesando et al. 2021; Dustmann and Okatenko 2014), while Dao et al. (2018) employed a gravity model with a PPML estimator while focusing on differences between aspirations and actual migration. One innovative approach, which included the use of geo-referenced online search data, machine learning techniques and a gravity model, was used by Böhme et al. (2020), who aimed to enable real-time predictions of bilateral migration flows. Some studies have also employed a qualitative approach (e.g. in-depth interviews and focus groups) to delve deeper into the determinants of the migration desires of particular groups (e.g. Thulin and Vilhelmson 2014; Van Mol and Timmermann 2014; Bygnes and Flipo 2017).

3. Data Sources and Methodology

In this section, we outline the methodology employed in our analysis of migration desires and destination choices. Following Heckman (1976, 1979), we adopt a two-stage approach to control for the selection of individuals in the sample with a migration aspiration with their choice regarding the desired destination. To this end, the first stage is run with a probit model to investigate the determinants of individuals' desires to migrate. Subsequently, the inverse Mills ratio (IMR) is obtained from the first stage, and a conditional logit model is then used in the second stage to analyse destination choices among those expressing a desire to migrate. This methodology enables us to explore the factors driving migration intentions and destination preferences, while we correct the estimation for the sample selection bias for those who chose their desired destination after expressing their aspirations to migrate.

3.1. DATA SOURCES

Our analysis primarily utilises the 2019 data of the OeNB Euro Survey[1] of the Oesterreichische Nationalbank (OeNB), which includes information on migration desires, preferred destinations and other individual-level characteristics of respondents. The survey is conducted in collaboration with Gallup as an intermediary partner to communicate with each national statistics office. The survey is conducted in collaboration with Gallup as an intermediary partner to communicate with each national statistics office. In the second stage of the estimation, which analyses the macro-level variables indicating the performance of both the origin and destination country, we rely on the World Development Indicators (WDIs) of the World Bank.[2]

The OeNB Euro Survey, conducted regularly in CESEE, gathers unique data on cash management, savings habits and debt while also capturing participants' economic assessments, expectations and experiences. Launched in autumn 2007, the survey was conducted semi-annually, in both spring and autumn, until 2014. Since 2015, it has been an annual survey conducted in autumn. For each wave of surveys, 1,000 randomly selected people per country are interviewed. The samples are representative of the population above 15 years of age and in terms of sex and regional distribution. The survey currently encompasses 10 countries, including six EU member states (Bulgaria, Croatia, Czechia, Hungary, Poland and Romania) and four non-EU countries (Albania, Bosnia and Herzegovina, North Macedonia and Serbia).

[1] Some of the data used in this analysis are derived from the OeNB Euro Survey and have been provided by the OeNB solely for research purposes. These data have been obtained from the OeNB under special contractual arrangements and are available from the author(s) only subject to certain conditions.
The public website of the survey can be found at: https://www.oenb.at/en/Monetary-Policy/Surveys/OeNB-Euro-Survey.html

[2] The data can be found at: https://databank.worldbank.org/source/world-development-indicators

For our analysis, Question 100 of the survey is important. In this question, the interviewee was asked:

Question 100: Ideally, if you had the opportunity, would you like to move to another country?

1. **Yes, I would like to move permanently.**
2. **Yes, I would like to move temporarily.**
3. **No, I would prefer to stay in my country.**

Our dependent variable in the first stage of the estimation is based on the answers to Question 100. Specifically, when the individual chooses response one or two for this question, we interpret it as indicating that the individual shows a positive intention to migrate. Thus, the dependent variable in the first stage would take the value of one, and zero otherwise. Subsequently, for those who showed a willingness to migrate (by selecting response one or two to Question 100), the desired destination is then asked in Question 101, which offers a long list of possible answers. We classify the chosen countries into three separate groups (EU15, EU-CEE and EU-Extra), as shown in Table 1. We use this three-group classification in the second stage of our estimation as our dependent variable.

Table 1 / The list of desired destinations for migration by group

EU15	EU-CEE	EU-Extra
Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom	Bulgaria, Croatia, Cyprus, Czechia, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovak Republic, Slovenia	Albania, Argentina, Australia, Bosnia and Herzegovina, Brazil, Canada, Chile, Iceland, Israel, Montenegro, New Zealand, North Macedonia, Norway, Russian Federation, Serbia, South Africa, Switzerland, Turkey, Ukraine, United States

Source: OeNB Euro Survey for 2019

Table 2 presents a detailed collection of factors that are included in our study on migration decisions and the choice of the destination country. These factors cover various aspects, including individual demographic characteristics (e.g. age and gender), household details (e.g. size and ownership status), and economic indicators (e.g. income levels and expectations). Additionally, macroeconomic factors (e.g. GDP differences and unemployment rates) are included to analyse the driving push and pull factors.

Table 2 / Variables and their definitions

Variable	Definition
Individual Characteristics	
Demographic Characteristics	
Age	The age of the respondent.
Gender	The gender of the respondent (1 if male, 0 otherwise).
HH Head	Whether the respondent is the head of the household (1 if yes, 0 otherwise).
Marital Status	The marital status of the respondent (1 if married, 0 otherwise).
Education Level	The level of education attained by the respondent grouped by the International Standard Classification of Education (ISCED) classification as follows: (1) Low Education Level – including those with primary education and lower secondary education; (2) Medium Education Level – including those with (upper) secondary education; and (3) High Education Level – including those with post-secondary non-tertiary education or the first or second stage of tertiary education.
Unemployed	Whether the respondent is unemployed (1 if unemployed, 0 otherwise).
Household Characteristics	
HH Size	The size of the household.
Relative Abroad	Whether the respondent has a close family member who lives or works abroad (1 if yes, 0 otherwise).
Child 0-6	Whether the household has children aged 0-6 (1 if yes, 0 otherwise).
Child 7-15	Whether the household has children aged 7-15 (1 if yes, 0 otherwise).
Tie	Whether the household owns both a car and a house/apartment (1 if yes, 0 otherwise).
Financial Situation	
HH Income Exceeds Expenses	Indicates whether the household income exceeded its expenses over the last 12 months. It is 1 when the respondent indicates that the household income exceeded its expenses, and 0 otherwise
Personal Income in US Dollars	The respondent's total monthly income after taxes in US dollars, converted from the local currency.
Past Experiences and Expecations	
Better Local Economy	Indicates the respondent's expectations regarding the economic situation of their country over the next five years. It is categorised as 1 if the respondent agrees or strongly agrees that the economic situation will improve, and 0 otherwise.
Higher Local Inflation	Indicates the respondent's expectations regarding the strong increase in prices in their country over the next year. It is categorised as 1 if the respondent agrees or strongly agrees that prices will strongly increase, and 0 otherwise.
Income Reduction	Indicates whether the respondent's household experienced an unexpected significant reduction in its income over the past 12 months. It is categorised as 1 if indicating that the household experienced an unexpected significant reduction in income, and 0 otherwise.
Macroeconomic Factor	
GDP Per Capita of the Origin Country	The average GDP per capita in constant 2015 US dollars of the origin country between 2014 to 2018, serving as a control for the macroeconomic conditions of the economy. This provides insights into the overall economic performance of the origin country during the specified period.
Destination Factors	
GDP Per Capita	The average GDP per capita in constant 2015 US dollars of the destination groups, calculated over the period between 2014 and 2018.
Unemployment Rate	The average unemployment rate of the destination groups, calculated between 2014 and 2018.

Sources: OeNB Euro Survey for 2019 and the WDIs of the World Bank; authors' calculations

3.2. METHODOLOGY

Using this data, we apply a two-stage Heckman procedure, with the first stage identifying the determinants behind the intention to migrate. In the second stage, we analyse the characteristics of those who expressed a desire to migrate and investigate the determinants of their choice regarding the respective host economy.

3.2.1. First Stage: Probit Model

In the first stage of our analysis, we employ a probit model suggested by Bliss (1934a, 1934b) to examine the determinants of individuals' desires to migrate. Let Y_i denote the binary indicator variable for the desire to migrate, taking the value 1 if individual i expresses a desire to migrate and 0 otherwise. X_i typically represents the vector of individual demographic and socioeconomic characteristics. The probability $Pr(Y_i = 1 \mid X_i)$ is modelled as a function of X_i through the cumulative distribution function (CDF) of the standard normal distribution, denoted as:

$$\begin{aligned} Pr(Y_i = 1 \mid X_i) &= \Phi(X_i\beta) \\ &= \Phi\Big(\beta_0 + \beta_1 \log(age)_i + \beta_2 \log(age)_i^2 + \beta_3 \text{gender}_i + \beta_4 \text{ married}_i + \beta_5 \text{ head}_i \\ &+ \beta_6 \text{education}_{\text{med}_i} + \beta_7 \text{education}_{\text{high}_i} + \beta_8 \text{ unemployed}_i + \beta_9 \text{ size}_i + \beta_{10} \text{ size}_i^2 \\ &+ \beta_{11} \text{ child}_{0-6_i} + \beta_{12} \text{ child}_{7-15_i} + \beta_{13} \text{ tie}_i + \beta_{14} \text{ relative}_i + \beta_{15} \text{ saving}_i \\ &+ \beta_{16} \text{ expectation}_{\text{economy}_i} + \beta_{17} \text{ expectation}_{inflation_i} + \beta_{18} \text{ income}_{shock_i} \\ &+ \beta_{19} income_i + \beta_{20} \text{income}_i^2\Big) \end{aligned} \quad (1)$$

$$where\ income\ \epsilon\ \{logarithm\ of\ personal\ income, logarithm\ of\ GDP\ per\ capita\}$$

In our probit model, Y_i denotes the binary indicator variable representing the desire to migrate of individual i, which takes a value of 1 to indicate an expressed desire to migrate, as described above. Vector X_i encompasses individual/household demographic and socioeconomic characteristics for individual i, including age, gender, marital status, role in the household, employment status, education, size of the household, financial status of the household, decomposition of children in the household by age group, a set of variables coving expectations and past experiences. These variables in equation 1 are the ones presented in Table 2.

We include $log(age)_i$ to represent the age of the respondent, and we include also $log(age)_i^2$ to capture potential non-linear effects of age on the outcome variable. $gender_i$ indicates the respondent's gender, with a value of 1 if the individual is male, and 0 otherwise. $married_i$ denotes the marital status of the respondent, taking a value of 1 if married, and 0 otherwise. $head_i$ indicates whether the respondent is the head of the household, with a value of 1 if yes, and 0 otherwise. $education_{med_i}$ and $education_{high_i}$ represent the respondent's level of education, categorised as low, medium or high based on the International Standard Classification of Education (ISCED) classification. $unemployed_i$ reflects whether the respondent is unemployed, with a value of 1 indicating unemployment, and 0 otherwise. $size_i$ denotes the size of the household, while $size_i^2$captures potential non-linear effects. $child_{0-6_i}$ and $child_{7-15_i}$ indicate whether the household has children aged 0-6 and/or 7-15, respectively. tie_i signifies whether the household owns both a car and a house/apartment, with a value of 1 if yes, and 0 otherwise (see below for additional details on this variable). $relative_i$ indicates whether the respondent has a close

family member who lives or works abroad, with a value of 1 if yes, and 0 otherwise. $saving_i$ represents whether the household income exceeded its expenses over the last 12 months, with a value of 1 if yes, and 0 otherwise. $expectation_{economy_i}$ captures the respondent's expectations regarding the local economy (i.e. the economic situation of their country) over the next five years. It is categorised as 1 if the respondent agrees or strongly agrees that the economic situation will improve, and 0 otherwise. $expectation_{inflation_i}$ captures the respondent's expectations regarding local inflation (i.e. whether there will be a strong increase in prices in their country over the next year). It is categorised as 1 if the respondent agrees or strongly agrees that prices will strongly increase, and 0 otherwise. $income_{shock_i}$ indicates whether the household experienced an unexpected significant reduction in income over the past 12 months, with a value of 1 if yes, and 0 otherwise. $income_i$ represents either (a) the respondent's personal monthly income in US dollars for the sample of individuals that have an income or (b) the average GDP per capita in US dollars of the origin country between 2014 and 2018. Both of these are in logarithm form, and the squared terms here capture potential non-linear effects as an indicator of the level of income in the home country. Although it is expected that having a lower income pushes individuals to migrate, this relationship is not linear. In fact, in order to be able to migrate in the first place, one may need to finance a minimum sunk cost, which does not materialise at low levels of income. Therefore, while the log of GDP per capita of the home country is included in one specification, the square of that is also included in another specification in order to be able to show the concave relationship between income and the aspirations to migrate. Furthermore, in an additional robustness check, the income of the individual is used instead of the GDP per capita of the home country.

3.2.2. Intermediary Stage: Exclusive Variable and Inverse Mills Ratio

We tackle the issue of potential sample selection bias of the second-stage model, in which the choice of destination is analysed for those individuals who showed an aspiration to migrate. As posited by the Heckman selection model (Gronau 1974; Lewis 1974; Heckman 1976, 1979), this bias arises when the dependent variable is not observed for all individuals due to a selection mechanism. Specifically, the model assumes the existence of an underlying regression relationship represented by:

$$y_i = x_i\beta + u_{1i} \tag{2}$$

where y_i is the dependent variable, x_i is a vector of explanatory variables, β is the coefficient vector, and u_{1i} is the error term following a normal distribution with mean 0 and variance σ. The observation of the dependent variable is subject to a selection mechanism. The dependent variable y_j is observed if it surpasses a certain threshold determined by the selection equation:

$$z_i\,\gamma + u_{2i} > 0 \tag{3}$$

Here, z_i is a vector of variables influencing the selection process, γ is the coefficient vector for the selection equation, and u_{2i} is the error term following a normal distribution with mean 0 and variance 1. Notably, there exists correlation (ρ) between the error terms u_{1j} and u_{2j}. In cases where $\rho \neq 0$, applying standard regression techniques to the regression equation leads to biased results. To address this issue, Heckman (1976) provides consistent and asymptotically efficient estimates for all parameters in this setting. In our data, individuals who express a desire to migrate may differ systematically from those who do not – not only in their migration aspirations, but also in their characteristics that affect the choice

of destination. This discrepancy may lead to potential sample selection bias, where certain individuals are more likely to be included in the sample based on unobservable factors that also influence the choice of destination. To address this issue, we employ a two-stage Heckman model (albeit in a modified form due to the nature of our dependent variable in the second stage) that consists of a choice of destination rather than a binary/continuous outcome. The primary idea behind the Heckman model is to incorporate an exclusive variable in the first stage, which captures factors influencing selection into the sample (migration desire) but not the outcome of interest (destination choice). Identifying a suitable exclusive variable is often challenging. After considering various candidate variables, we propose a '*Tie*' variable as a legitimate candidate. The '*Tie*' variable is constructed based on whether the household owns both a car and a house/apartment. This variable is hypothesised to influence individuals' intentions to migrate by reflecting their level of attachment to (or 'anchoring' in) their current country of residence, yet it is unlikely to directly impact their choice of destination. Thus, the '*Tie*' variable serves as a plausible exclusive variable in our analysis. Moreover, it is noteworthy that when applying for tourist visas from developing countries to advanced countries, authorities often request documentation (e.g. proof of property ownership) as evidence of ties to the home country. This requirement underscores the significance of property ownership in migration decision making and further supports the rationale for considering the '*Tie*' variable as an exclusive determinant.

After estimating the probit model in the first stage, we need to account for potential sample selection bias in the second stage, where we analyse destination choices among individuals expressing a desire to migrate. To address this bias, we employ the IMR, symbolised as λ, a common technique used in selection models. The IMR is derived from the probit model estimated in the first stage. Specifically, for each observation i, λ_i is calculated as the ratio of the probability density function of the standard normal distribution, ϕ, evaluated at the estimated value of the probit model $(X_i\beta)$ to the cumulative distribution function, Φ, of the standard normal distribution, denoted as:

$$\lambda_i = \frac{\phi(X_i\beta)}{\Phi(X_i\beta)} \tag{4}$$

The λ_i captures the effect of sample selection on the outcome variable and is incorporated as an additional explanatory variable in the second stage of our analysis. By including the IMR in the destination choice model, we aim to correct for potential biases resulting from the selection process.

3.2.3. Second Stage: Conditional Logit Model (McFadden's Choice Model)

Choice models utilising the Random Utility Model (RUM) are typically derived under the assumption that the decision maker will behave in a utility-maximising manner (Train 2009). In the realm of migration decision making, RUM serves as a foundational framework for understanding how individuals choose from among a set of destinations. In this model, individuals (denoted as $i = 1, 2, ...$) face a selection from among a alternative destinations (in this case, three destination groups) in set *A*. Each destination a offers a utility U_{ia} to individual i, comprising both an observed component V_{ia} and an unobserved random component ϵ_{ia}. Mathematically, this can be expressed as:

$$U_{ia} = V_{ia} + \epsilon_{ia} \tag{5}$$

Here, the observed component V_{ia} is typically represented as a linear function of observed data vectors. The unobserved component ϵ_{ia} follows a random distribution, with its specific form being contingent on the choice model employed. The probability P_{ia} that individual i selects alternative a from the A alternatives is contingent on the utility of alternative a being the highest among all alternatives. This probability is expressed as:

$$P_{ia} = Pr(U_{ia} > U_{ib}\ for\ all\ b \neq a) \tag{6}$$

Under the assumption of random utility maximisation, P_{ia} can be formulated as an integral involving the distribution of the unobserved component ϵ_i. Here, $I(\cdot)$ denotes the indicator function, which is equal to 1 when the expression inside the parentheses holds true, and 0 otherwise.

$$P_{ia} = \int I(\epsilon_{ia} - \epsilon_{ib} > V_{ib} - V_{ia}\ for\ all\ b \neq a) f(\epsilon_i) d\epsilon_i \tag{7}$$

The conditional logit model (AKA 'McFadden's choice model') suggested by McFadden (1974) is firmly grounded within the RUM framework, where individuals opt for the alternative (in this case, the migration destination) that promises the highest utility. In McFadden's choice model, the observed component of utility is represented as:

$$V_{ia} = W_{ia}\alpha + Z_i\delta_a + c_a \tag{8}$$

Here, α signifies the coefficients for W_{ia}, a vector of alternative-specific variables; δ_a represents the coefficients for Z_i, a vector of case-specific variables; and c_a denotes the alternative-specific intercepts. In McFadden's choice model, the probabilities of alternatives are given by:

$$P_{ia} = \frac{e^{V_{ia}}}{\sum_{i=1}^{A} e^{V_{ij}}} \tag{9}$$

Therefore, the ratio for the probability of alternative a to the probability of alternative b is:

$$\frac{P_{ia}}{P_{ib}} = \frac{e^{V_{ia}}}{e^{V_{ib}}} \tag{10}$$

Since this ratio is independent of the probabilities of any of the other alternatives, the Independence of Irrelevant Alternatives (IIA) principle is satisfied. This principle stipulates that the relative probabilities of two alternatives remain unaffected by the characteristics of other alternatives. Introducing a new alternative should not alter the relative attractiveness of existing alternatives, thereby maintaining consistency in choice probabilities. IIA is a mathematical consequence of the formulation of McFadden's choice model. Inserting equation 8 into equation 5 models the utility in McFadden's choice model as:

$$U_{ia} = W_{ia}\alpha + Z_i\delta_a + c_a + \epsilon_{ia} \tag{11}$$

To estimate equation 11, we transform the data into a long format such that for each individual who indicated an aspiration to migrate in the first step, there are three observations, one for each of the alternatives the individual could have chosen. Then we index the set of unordered alternative observations for each individual i by a (i.e. from 1, 2, 3 since we have three destination choices: EU15,

EU-CEE, and Extra-EU). We therefore have a destination indicator y_{ia} for the alternative (migration destination) chosen by the i-th individual. $y_{ia} = 1$ if individual i chooses destination a and $y_{ia} = 0$ otherwise. By the definition of y_{ia}, due to the structure of the survey), we observe $y_{ia} = 1$ for the selected destination and $y_{ia} = 0$ for the not-selected destinations. The independent variables in the second are grouped into two main categories: case-specific Z_i and alternative-specific W_{ia}. Case-specific is the part of the list of variables that captures the characteristics of the individual who expressed a migration aspiration in the first stage. We employ the exact list of explanatory variables as we deployed in the first stage except for the tie_i variable, which is the exclusive variable that we believe determines the migration aspiration but does not determine the choice of destination. Additionally, we insert the IMR, λ_i, to adjust for the selection bias. For the alternative-specific factors, we use a variety of definitions to consider the income level and labor market situation of the destination. To do that, we include the average GDP per capita in constant 2015 US dollars of the destination groups in logarithmic form, calculated over the period between 2014 and 2018, as well as the average unemployment rates of the destination groups, also calculated over the period between 2014 to 2018. In general, we estimate the destination information in two specifications. First, we consider the destination information as pull factors at the level, and then we also estimate the model by defining a fraction in the relative terms (destination over origin). As mentioned earlier, δ_a represents the coefficients for Z_i, which has three elements for each destination choice, as δ_a= (δ_1, δ_2 and δ_3). We must fix one of the elements of δ_a to be the zero vector to normalise the location; it serves as a base, and we interpret the results relative to this base. In our analysis, we set the EU15 destination as the base. Therefore, the second stage of our methodology is as follows, where the alternative chosen by individual i is the one that maximises utility:

$$\begin{aligned} U_i = {} & \alpha_1 \text{income}_{ij} + \alpha_1 \text{unemployment}_{ij} + \delta_{1k} \log(age)_i + \delta_{2k} \log(age)_i^2 + \delta_{3k} \text{gender}_i \\ & + \delta_{4k}\ \text{married}_i + \delta_{5k}\ \text{head}_i + \ \delta_{6k} \text{education}_{\text{med}_i} + \delta_{7k} \text{education}_{\text{high}_i} \\ & + \ \delta_{8k}\ \text{unemployed}_i + \ \delta_{9k}\ \text{size}_i + \ \delta_{10k}\ \text{size}_i^2 + \ \delta_{11k}\ \text{child}_{0-6_i} \\ & + \ \delta_{12k}\ \text{child}_{7-15_i} + \ \delta_{13k}\ \text{relative}_i + \delta_{14k}\ \text{saving}_i + \ \delta_{15k} income_i \\ & + \ \delta_{16k} \text{income}_i^2 + \delta_{17k} \lambda_i + \ c_k + \epsilon_i \end{aligned} \tag{12}$$

$$where\ k \in \{\text{EU} - \text{CEE and Extra} - \text{EU}\},$$

$$\text{income}_{ij} \in \{\textbf{log}(\textbf{GDPcap}), \quad \textbf{log}(\textbf{GDPrelative})\}$$

$$\text{unemployment}_{ij} \in \{UNEMPLOYMENTrate, \quad UNEMPLOYMENTrelative\}$$

Since migration usually takes place during working age, we restrict the sample of estimations only to those aged between 15 and 65. As the minimum age of respondents is 18, the age is limited to between 18 and 65 years old in the benchmark. However, as a robustness check, results that encompass all individuals included in the estimations are also presented in the appendix (Table A2 and Table A3). Furthermore, some continuous variables (e.g. the age or income of the individual) may have a non-linear relationship with the aspiration to migrate or the choice of destination. Therefore, while the continuous variables are included in their logarithmic form, the squared terms of logarithmic forms of age and income are also included in the estimations. This allows us to show the concavity of the relationships in order to infer conclusions on the maximum potential age to migrate.

4. Descriptive Statistics

Table 3 presents the frequency and share of individuals with their migration decision outcomes in the first stage, categorised by origin country. Across all origin countries, 9,401 respondents (out of a total of 10,102 surveyed individuals) provided an answer regarding their migration decision. The majority, comprising 6,347 individuals (67.5%), expressed no desire to migrate, while 3,054 individuals (32.5%) expressed a desire to migrate. When examining specific countries, the distribution varies. For instance, in Albania, 41.9% of individuals opted against migration, while 58.1% expressed a desire to migrate. In contrast, countries like Czechia and Hungary had higher percentages of individuals not interested in migration (87.4% and 83.4%, respectively) compared to those desiring to migrate.

Table 3 / The frequency and share of individuals providing an answer about the migration decision in the first stage

Origin Country	No		Yes		Total	
	Frequency	Share	Frequency	Share	Frequency	Share
Albania	403	41.9%	558	58.1%	961	10.2%
Bosnia and Herzegovina	653	71.4%	261	28.6%	914	9.7%
Bulgaria	550	64.2%	307	35.8%	857	9.1%
Croatia	738	73.7%	263	26.3%	1,001	10.6%
Czechia	777	87.4%	112	12.6%	889	9.5%
Hungary	797	83.4%	159	16.6%	956	10.2%
North Macedonia	556	57.9%	404	42.1%	960	10.2%
Poland	645	71.1%	262	28.9%	907	9.6%
Romania	719	73.0%	266	27.0%	985	10.5%
Serbia	509	52.4%	462	47.6%	971	10.3%
Total	**6,347**	**67.5%**	**3,054**	**32.5%**	**9,401**	**100.0%**

Source: OeNB Euro Survey in 2019; authors' calculations

Table 4 displays the frequency and share of individuals specifying their migration destinations in the second stage, categorised by origin country and destination group. Of the surveyed individuals, a total of 2,876 provided responses regarding potential migration destinations. The majority of individuals (71.2%) expressed a preference for destinations among the EU15 countries, followed by 24.8% opting for destinations categorised as EU-Extra. Only a small percentage (4.0%) indicated preferences for EU-CEE destinations. Examining individual origin countries reveals variations in destination preferences. For example, respondents in Hungary showed the highest preference (89.2%) for EU15 destinations and the lowest (8.8%) for EU-Extra destinations among all countries in the sample. On the other side, in Poland, only 57.5% of respondents indicated a desire to migrate to the EU15, whereas 36.2% indicated a desire to migrate to an EU-Extra country.

Table 4 / The frequency and share of individuals providing an answer about migration destination in the second stage

Origin Country	EU15		EU-CEE		EU-Extra		Total	
	Frequency	Share	Frequency	Share	Frequency	Share	Frequency	Share
Albania	423	77.3%	7	1.3%	117	21.4%	547	19.0%
Bosnia and Herzegovina	176	74.6%	14	5.9%	46	19.5%	236	8.2%
Bulgaria	222	80.4%	5	1.8%	49	17.8%	276	9.6%
Croatia	68	63.0%	4	3.7%	36	33.3%	108	3.8%
Czechia	189	74.1%	2	0.8%	64	25.1%	255	8.9%
Hungary	132	89.2%	3	2.0%	13	8.8%	148	5.1%
North Macedonia	246	62.4%	20	5.1%	128	32.5%	394	13.7%
Poland	127	57.5%	14	6.3%	80	36.2%	221	7.7%
Romania	205	81.3%	8	3.2%	39	15.5%	252	8.8%
Serbia	260	59.2%	38	8.7%	141	32.1%	439	15.3%
Total	**2,048**	**71.2%**	**115**	**4.0%**	**713**	**24.8%**	**2876**	**100.0%**

Source: OeNB Euro Survey in 2019; authors' calculations

Table 5 presents descriptive statistics for key determinants of migration and destination that were defined in Table 2. It includes the number of observations, mean values and standard deviations as well as minimum and maximum values for various individual, household, financial and experiential factors. The average age of respondents is 46.9 years, with a notable standard deviation of 15.9, indicating variability in age distribution. Gender representation is relatively balanced, with males and females each comprising roughly half of the sample. Approximately half of the respondents are identified as heads of their households. Marital status leans towards married individuals, with a mean value of 0.7. Education levels vary, with a mean value indicating a predominantly medium level of educational attainment. Unemployment is reported by a small fraction of respondents. Regarding household characteristics, the average household size is three members, with some households having as many as 15 members. Around 30% of respondents have close relatives residing or working abroad. Household composition includes relatively few children aged 0-6 or 7-15. However, a majority of households (mean of 0.6) own both a car and a house/apartment. Financially, approximately 30% of households report an income exceeding expenses. Among respondents with available data, average monthly personal income is EUR 481.3, while household income averages EUR 848.1 per month. In terms of expectations and past experiences, roughly half of the respondents express optimism about the local economic situation. However, the majority anticipate higher local inflation. Around 20% of households experienced an unexpected significant reduction in income over the past year. In Table A1of the appendix, we provide similar statistics with a breakdown on having an intention to migrate or not.

Table 5 / The descriptive statistics of main determinants of a migration decision in the survey

Variables	Observations	Mean	Standard Deviation	Min	Max
Individual Characteristics					
Age	9,401	46.9	15.9	18	90
Gender	9,401	0.5	0.5	0	1
HH Head	9,401	0.5	0.5	0	1
Marital Status	9,334	0.7	0.5	0	1
Education Level	9,393	1.9	0.7	1	3
Unemployed	9,401	0.1	0.3	0	1
Household Characteristics					
HH Size	9,367	3.0	1.4	1	15
Relative Abroad	9,401	0.3	0.4	0	1
Child 0-6	9,401	0.1	0.4	0	1
Child 7-15	9,395	0.2	0.4	0	1
Tie	9,401	0.6	0.5	0	1
Financial Situation					
HH Income Exceeds Expenses	9,401	0.3	0.4	0	1
Monthly Personal Income in US dollars	5,542	538.3	420.8	11.8	10,418
Expectations and Past Experiences					
Better Local Economy	8,964	0.5	0.5	0	1
Higher Local Inflation	9,126	0.8	0.4	0	1
Income Reduction Experience	9,036	0.2	0.4	0	1

Source: OeNB Euro Survey in 2019; authors' calculations

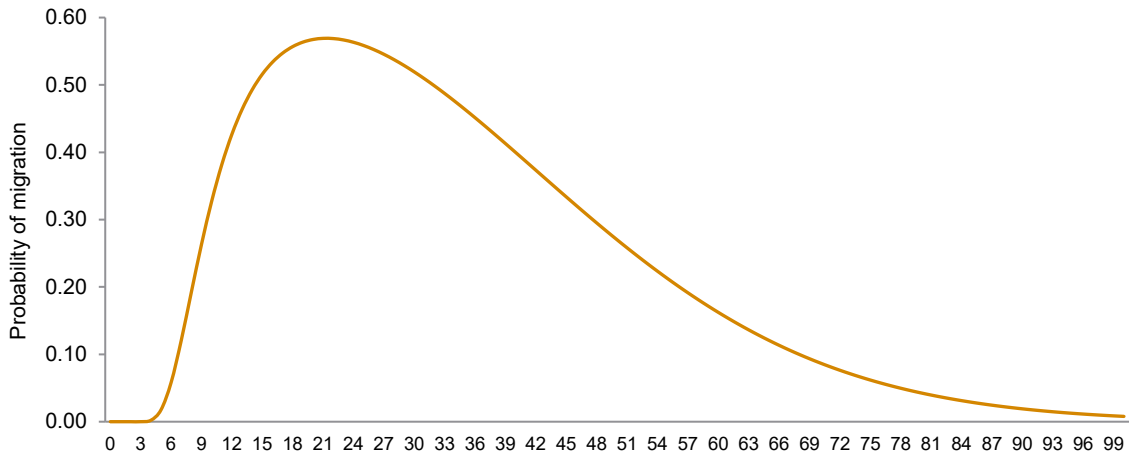
5. Estimation Results

5.1. FIRST STAGE: ASPIRATION TO MIGRATE

Table 6 presents the estimation results of the first stage using the probit technique on the sample of individuals aged between 18 and 65 years. Model 1 through Model 6 include different sets of explanatory variables in the estimation, leading to varying sample sizes across columns. For each model, a column with the header 'W/O sq' includes age and GDP per capita of the home country as single variables, while the other column with the header 'W sq' includes these variables along with their squared terms. For the same sample size (i.e. Model 1 through Model 4), Model 4 with the squared terms presents the lowest values for the Akaike information criterion (AIC) and Bayesian information criterion (BIC), which indicates that it is the most fitting model.

In all models, age negatively impacts the aspiration for migration. However, considering a non-linear relationship between age and the desire to migrate reveals a concavity. This suggests that the intention to migrate increases with age up to a certain point, after which it tends to decrease. Figure 1 illustrates the relationship between age and the probability of migration, showing that the aspiration to migrate peaks (with a probability of 56.42%) when the individual is 22 years old and decreases thereafter. The probability of migration drops to less than 10% when the individual is older than 66 years.

Figure 1 / Relationship between age and the probability of migration



Note: Authors' computations based on Model 4 in Table 6, which includes squared terms.

Table 6 / The probit estimation of migration decision (first stage) for individuals between 18 and 65 years of age

	(1)		(2)		(3)		(4)		(5)		(6)	
Dep. Var.: Migration Decision	**W/O sq**	**W sq**	**W/O sq**	**W sq**	**W/O sq**	**W sq**	**W/O sq**	**W sq**	**W/O sq**	**W sq**	**W/O sq**	**W sq**
Log (Age)	-1.00***	5.15***	-1.00***	5.46***	-1.16***	6.49***	-1.16***	6.64***	-1.02***	5.89***	-1.19***	7.54***
	(0.054)	(1.07)	(0.054)	(1.07)	(0.056)	(1.09)	(0.056)	(1.09)	(0.057)	(1.14)	(0.059)	(1.17)
Log (Age)^2		-0.86***		-0.90***		-1.06***		-1.08***		-0.96***		0.14***
		(0.15)		(0.15)		(0.15)		(0.15)		(0.16)		(0.037)
Gender=1	0.17***	0.18***	0.17***	0.18***	0.12***	0.13***	0.12***	0.14***	0.18***	0.19***	0.13***	-0.19***
	(0.034)	(0.034)	(0.034)	(0.034)	(0.035)	(0.035)	(0.035)	(0.035)	(0.036)	(0.036)	(0.037)	(0.044)
Marital Status=1	-0.18***	-0.23***	-0.17***	-0.22***	-0.14***	-0.20***	-0.14***	-0.19***	-0.17***	-0.22***	-0.13***	-0.052
	(0.039)	(0.040)	(0.039)	(0.041)	(0.040)	(0.042)	(0.040)	(0.042)	(0.041)	(0.042)	(0.043)	(0.041)
HH Head=1	-0.064*	-0.090**	-0.055	-0.083**	-0.014	-0.051	-0.010	-0.047	-0.065*	-0.096**	-0.011	0.015
	(0.038)	(0.038)	(0.038)	(0.038)	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)	(0.040)	(0.041)	(0.041)
Education Level=2	0.16***	0.15***	0.17***	0.15***	0.079**	0.043	0.087**	0.052	0.13***	0.12***	0.047	0.075
	(0.037)	(0.037)	(0.037)	(0.037)	(0.038)	(0.038)	(0.038)	(0.038)	(0.039)	(0.039)	(0.040)	(0.051)
Education Level=3	0.29***	0.25***	0.32***	0.28***	0.13***	0.068	0.16***	0.093*	0.29***	0.24***	0.14***	-0.046
	(0.045)	(0.046)	(0.046)	(0.046)	(0.047)	(0.048)	(0.047)	(0.049)	(0.048)	(0.048)	(0.050)	(0.048)
Unemployed=1	0.17***	0.16***	0.15***	0.14***	0.056	0.035	0.049	0.029	0.099**	0.090*	-0.028	0.029*
	(0.044)	(0.044)	(0.044)	(0.045)	(0.045)	(0.045)	(0.045)	(0.045)	(0.047)	(0.047)	(0.048)	(0.016)
HH Size	0.080***	0.088***	0.078***	0.087***	0.014	0.024*	0.015	0.026*	0.086***	0.094***	0.019	-0.050
	(0.014)	(0.014)	(0.014)	(0.014)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.016)	(0.048)
Child 0-6=1	-0.037	-0.080*	-0.037	-0.081*	0.0042	-0.039	0.0036	-0.042	-0.044	-0.089*	-0.0017	0.057
	(0.044)	(0.045)	(0.044)	(0.045)	(0.045)	(0.045)	(0.045)	(0.045)	(0.047)	(0.047)	(0.048)	(0.044)
Child 7-15=1	0.080**	0.022	0.075*	0.014	0.13***	0.059	0.13***	0.053	0.096**	0.030	0.14***	-0.092**
	(0.040)	(0.041)	(0.040)	(0.041)	(0.041)	(0.042)	(0.041)	(0.042)	(0.042)	(0.044)	(0.043)	(0.038)
Tie=1	-0.11***	-0.12***	-0.096***	-0.10***	-0.10***	-0.12***	-0.092**	-0.11***	-0.096***	-0.10***	-0.078**	0.40***
	(0.035)	(0.035)	(0.035)	(0.035)	(0.036)	(0.036)	(0.036)	(0.036)	(0.037)	(0.037)	(0.038)	(0.037)
Relative Abroad=1	0.43***	0.44***	0.44***	0.45***	0.40***	0.42***	0.40***	0.42***	0.41***	0.41***	0.38***	-1.21***
	(0.034)	(0.034)	(0.034)	(0.034)	(0.035)	(0.035)	(0.035)	(0.035)	(0.036)	(0.036)	(0.037)	(0.16)
HH Income Exceeds Expenses=1			-0.27***	-0.28***			-0.17***	-0.17***			-0.091**	-0.087**
			(0.035)	(0.035)			(0.036)	(0.036)			(0.038)	(0.039)
Log GDP Per Capita Origin					-0.70***	5.75***	-0.67***	5.06***			-0.70***	4.03**
					(0.033)	(1.61)	(0.034)	(1.62)			(0.036)	(1.75)
Log GDP Per Capita Origin^2						-0.36***		-0.32***				-0.26***
						(0.089)		(0.090)				(0.097)
Better Local Economy (Expectation)=1									-0.17***	-0.17***	-0.22***	-0.20***
									(0.033)	(0.033)	(0.034)	(0.034)
Higher Local Inflation (Expectation)=1									0.18***	0.18***	0.16***	0.16***
									(0.038)	(0.038)	(0.039)	(0.039)
Income Reduction Experience=1									0.31***	0.32***	0.31***	0.32***
									(0.042)	(0.042)	(0.044)	(0.044)
Constant	2.95***	-7.95***	2.98***	-8.45***	10.1***	-32.3***	9.85***	-29.6***	2.92***	-9.36***	10.1***	-26.5***
	(0.20)	(1.90)	(0.20)	(1.91)	(0.41)	(7.52)	(0.41)	(7.56)	(0.22)	(2.04)	(0.44)	(8.15)
Observations	7,810	7,810	7,810	7,810	7,810	7,810	7,810	7,810	7,074	7,074	7,074	7,074
Pseudo R-squared	0.100	0.103	0.106	0.109	0.143	0.149	0.145	0.151	0.106	0.110	0.151	0.158
AIC	9,314.3	9,282.8	9,254.1	9,219.5	8,873.5	8,811.3	8,852.7	8,792.1	8,371.0	8,336.3	7,954.8	7,894.8
BIC	9,404.8	9,380.3	9,351.6	9,323.9	8,971.0	8,922.7	8,957.1	8,910.5	8,480.8	8,453.0	8,078.4	8,032.1

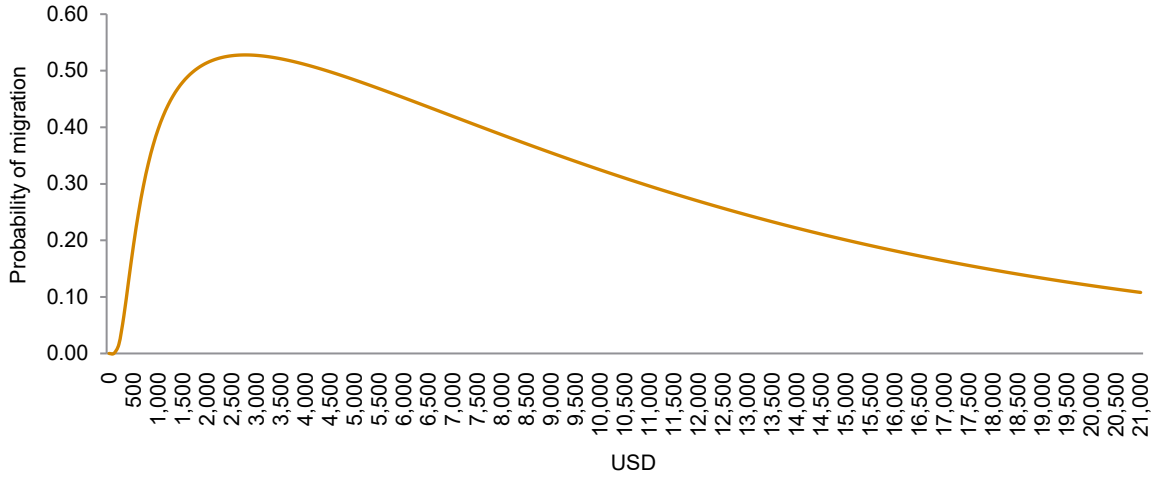
Robust standard errors in parentheses: * p<0.1, ** p<0.05, *** p<0.01.

The results indicate that males are more inclined than females to migrate across all specifications except for the last one. Married individuals, heads of households, those with ties at home (such as owning cars or properties), those whose incomes exceed their costs, and those with optimistic expectations for the local economy show a lower willingness to migrate. Conversely, individuals with higher educational attainment, the unemployed, those with larger household sizes, those with more children aged over seven years, those with relatives living abroad, those anticipating higher local inflation, and those who have experienced a significant reduction in income are more inclined to migrate.

GDP per capita negatively affects the desire to migrate. However, incorporating the squared value of GDP per capita into the model reveals a concave relationship between the probability of migration and the average real income level in the country of residence. Figure 2 illustrates this concavity, showing a sharp increase in the probability of migration, which peaks at 44.3% when income reaches approximately USD 2,700. Beyond this point, the probability of migration decreases. This indicates that in order to migrate, the individual would need to incur a certain fixed cost of migration. However, it is important to note that since the data represents the intention rather than the realisation of migration, and since income data does not come from registered data, the mechanism of sunk cost is what we expect, but the values should be interpreted with caution.

Table A2 in the appendix presents the estimation results for the entire sample of individuals. Although the number of observations increases by about 19%, the findings remain robust and consistent with those presented in Table 1. The notable difference is that the '*Tie*' variable becomes statistically weakly significant. This change could be attributed to the inclusion in the whole sample of individuals over the age of 65, whose aspiration to migrate might be less dependent on their assets in the home country.

Figure 2 / Relationship between GDP per capita of the home country and the probability of migration

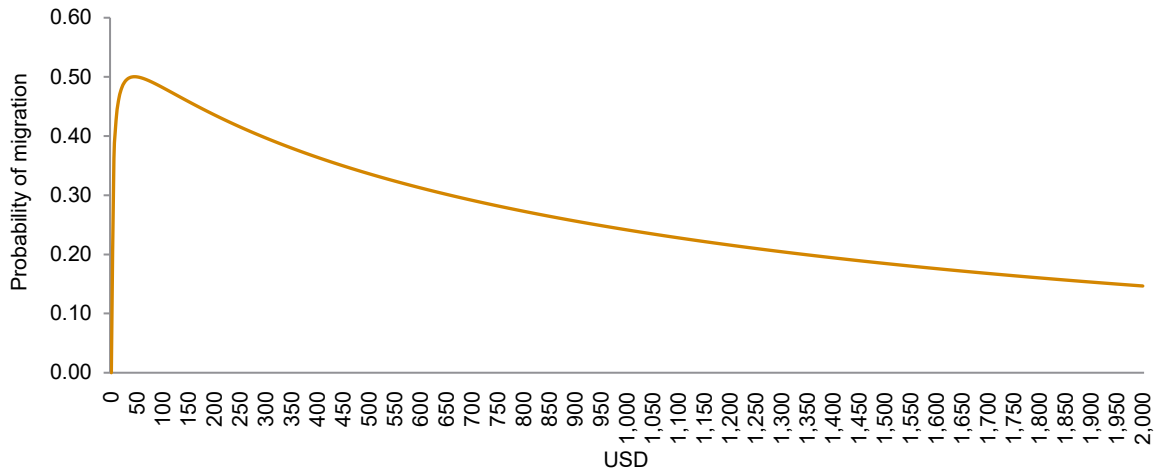


Note: Authors' computations based on Model 4 in Table 6, which includes squared terms.

Table 7 presents the estimation results, including the log of an individual's personal income in USD and its squared term instead of the GDP per capita of the country in which the individual resides. The binary variable indicating the individual's unemployment status is now excluded, as all individuals reporting income are employed. Due to missing information on individual personal income, the sample size has

substantially decreased. However, most coefficients remain consistent with the benchmark results presented in Table 1. The status of being the household head and the '*Tie*' variables are now statistically insignificant, while the impact of higher education on migration aspirations has become more pronounced. Interestingly, a pattern similar to that observed for the GDP per capita of the home country is noted for individuals' personal income: the higher the income, the lower the probability of desiring to migrate. Furthermore, the relationship between the two exhibits concavity. In fact, as Figure 3 illustrates, the probability of migrating is zero without income. With increasing income up to USD 45, the probability substantially increases up to a peak of 50%, after which point the aspiration to migrate gradually declines. The value of personal income at this peak is much smaller than the value of GDP per capita at its peak, where it stood at USD 2,700. To understand why such a large difference occurs, we estimate the two models on the same sample of individuals and present their results in Table A4 in the appendix. As observed, the coefficient of GDP per capita is about 14 times larger than the coefficient of personal income in the model that includes their squared terms. Moreover, the size of the coefficient of the squared term of GDP per capita is about 6.5 times larger than that of the squared term of personal income. This difference could mainly result from the fact that the same GDP per capita is used for all individuals of a country, while personal income is more heterogeneous. Furthermore, as Table A5 in the appendix (displaying the summary statistics of personal income of individuals across 10 home countries) shows, the GDP per capita of these countries is more than 10 times larger than the average personal income reported by individuals. The GDP per capita of eight countries is much larger than the maximum personal income reported by respondents. It is important to note that the GDP per capita is the average value during the 2014-2018 period, while the survey was conducted in 2019. Assuming the random selection of respondents in the survey, it could be assumed that the capital income in these countries is much larger than personal income, leading to a substantially larger GDP per capita.

Figure 3 / Relationship between the individuals' monthly personal income in US Dollars and the probability of migration



Note: Authors' computations based on Model 4 in Table 6, which includes squared terms.

Table 7 / The probit estimation of migration decision (first stage) including personal income

	Full Sample (7)		Sample 18-65 (8)	
Dep. Var.: Migration Decision	**W/O sq**	**W sq**	**W/O sq**	**W sq**
Log (Age)	-1.34***	11.5***	-1.08***	10.2***
	(0.065)	(1.31)	(0.076)	(1.63)
Log (Age)^2		-1.74***		-1.55***
		(0.18)		(0.22)
Gender=1	0.12***	0.15***	0.16***	0.18***
	(0.043)	(0.043)	(0.045)	(0.046)
Marital Status=1	-0.075	-0.19***	-0.13**	-0.19***
	(0.048)	(0.050)	(0.052)	(0.053)
HH Head=1	0.075	0.031	0.053	0.028
	(0.047)	(0.047)	(0.049)	(0.050)
Education Level=2	0.17***	0.14***	0.17***	0.15***
	(0.046)	(0.047)	(0.050)	(0.051)
Education Level=3	0.32***	0.26***	0.34***	0.30***
	(0.057)	(0.058)	(0.060)	(0.061)
HH Size	0.090***	0.085***	0.075***	0.080***
	(0.019)	(0.019)	(0.020)	(0.020)
Child 0-6=1	-0.12**	-0.13**	-0.081	-0.12**
	(0.058)	(0.058)	(0.059)	(0.059)
Child 7-15=1	0.14***	0.039	0.14***	0.049
	(0.052)	(0.053)	(0.053)	(0.055)
Tie=1	0.011	-0.021	-0.054	-0.072
	(0.045)	(0.045)	(0.047)	(0.047)
Relative Abroad=1	0.41***	0.42***	0.38***	0.40***
	(0.042)	(0.043)	(0.045)	(0.046)
Log (Personal income)	-0.24***	0.61**	-0.28***	0.56*
	(0.030)	(0.29)	(0.032)	(0.31)
Log (Personal income) ^ 2		-0.075***		-0.073***
		(0.025)		(0.026)
Constant	5.47***	-20.2***	4.84***	-17.7***
	(0.34)	(2.54)	(0.37)	(3.06)
Observations	5,503	5,503	4,457	4,457
Pseudo R-squared	0.138	0.155	0.095	0.106
AIC	5,872.8	5,763.7	5,304.3	5,247.9
BIC	5,958.8	5,862.9	5,387.5	5,343.9

Robust standard errors in parentheses: * p<0.1, ** p<0.05, *** p<0.01.

5.2. SECOND STAGE: DESTINATION CHOICE

In the second step of the analysis, we utilise the inverse Mills ratio (IMR) from the first step, focusing on a subset of the data comprising individuals who also provided a response about the migration destination they would select. This phase involved categorising the destinations into three distinct groups: EU15, EU-CEE and Extra-EU. This procedure was conducted using a choice model, specifically, a conditional logit analysis based on McFadden's approach, which is rooted in the random utility model (RUM) theory. The conditional logit model incorporated a set of case-specific variables, such as age, household size, gender, marital status, educational attainment level and employment status, alongside alternative-specific variables representing various destination options. The results are presented in

Table 8 for the sample of individuals aged between 18 and 65 years. The results of the second-stage estimation for the whole sample are presented in Table A3 in the appendix. The highly significant coefficients of the IMR in almost all models indicate that the first-stage models successfully captured the sample selection bias for the choice of no migration.

The case-specific variables and their coefficients in Table 8 can be interpreted to mean that EU15 countries serve as the benchmark region for migration destinations. Consequently, the results presented in the columns for EU-CEE and Extra-EU respectively represent outcomes for individuals who selected either EU-CEE or Extra-EU countries as their potential migration destination. Therefore, the coefficients in the EU-CEE column and the Extra-EU column should be seen as deviations from the benchmark (i.e. the EU15 destinations). For example, married individuals are less likely to choose EU-CEE and Extra-EU countries as their destination compared to EU15 countries. In general, no significant difference is observed in age, gender, household head status, tertiary education, unemployment status, having children, household size, or household income excess in determining the preference for EU15 destination countries over other EU destination countries in the majority of the specifications. Married individuals prefer EU15 destination countries over others. However, there are more signficiant coefficients for the Extra-EU destination countries. For instance, individuals with higher household size would prefer Extra-EU over EU15 destination countris. Individuals with middle education are indifferent between EU15 and Extra-EU destination countries, but they show a preference for EU15 over EU-CEE countries. Interestingly, those with university education are indifferent between EU15 and EU-CEE destinations, but they prefer Extra-EU over EU15 countries. The reason behind this observation is probably that highly educated individuals might find it difficult to accommodate themselves in an occupation in EU15 countries similar to what they can have in EU-CEE countries, but they may find better opportunities in Extra-EU countries. Additionally, the probability of being in the high tax bracket in the host country is another factor that makes them reluctant to migrate to EU15 countries compared to Extra-EU countries. Individuals with relatives abroad show no preference between EU15 and Extra-EU destinations, but they prefer EU-CEE over EU15 countries. Individuals with excess income over expenses are indifferent between EU15 and EU-CEE destinations, but they favour EU15 over Extra-EU countries. A concavity in the relationship between age, household size, and GDP per capita and preferences over certain regions is observed in some models.

The interpretation of coefficients for alternative-specific variables in each model is, however, not sensitive to the benchmark. The coefficient for the log difference in GDP per capita is consistently positive and statistically significant, at the 1% level. This indicates that as the difference in GDP per capita between the destination and origin countries increases, so does the probability of choosing a migration destination. The results of the estimation on the whole sample (presented in Table A3) also show a positive impact of the GDP ratio. The coefficient for the ratio of the unemployment rate is negative and statistically significant in all specifications in both tables. This suggests that an individual is more likely to choose a destination region when its unemployment rate decreases relative to that of the origin country.

Table 8 / Conditional logit estimation of migration destination decision in different specifications in the second stage (18-65 years old)

	Model 10.1			Model 10.2			Model 10.3			Model 10.4		
Choice Dep. Var.: Migration Destination (Base: EU15)	Region Var.	Extra-EU	EU-CEE	Region Var.	Extra-EU	EU-CEE	Region Var.	Extra-EU	EU-CEE	Region Var.	Extra-EU	EU-CEE
Case-specific Variables												
Inverse Mills Ratio		2.412***	4.598**		1.975***	4.557**		1.939***	4.611**		0.630	6.417***
		(0.748)	(1.884)		(0.708)	(1.954)		(0.704)	(1.973)		(0.880)	(2.063)
Log(Age)		13.23***	13.78		10.83**	13.65		10.40**	14.14		3.046	24.52**
		(4.727)	(10.78)		(4.506)	(11.28)		(4.483)	(11.41)		(5.353)	(12.43)
Log(Age)^2		-2.107***	-2.326		-1.727**	-2.304		-1.662**	-2.379		-0.500	-4.012**
		(0.721)	(1.670)		(0.685)	(1.748)		(0.681)	(1.769)		(0.823)	(1.926)
Gender=1		0.214*	0.0254		0.177	0.0188		0.162	0.0436		0.0504	0.189
		(0.113)	(0.293)		(0.112)	(0.299)		(0.112)	(0.300)		(0.121)	(0.308)
Marital Status=1		-0.514***	-0.944***		-0.453***	-0.940***		-0.462***	-0.932***		-0.276	-1.195***
		(0.161)	(0.331)		(0.156)	(0.339)		(0.156)	(0.343)		(0.175)	(0.352)
HH Head=1		-0.0425	0.307		-0.0348	0.307		-0.0224	0.293		0.00427	0.264
		(0.114)	(0.281)		(0.114)	(0.281)		(0.114)	(0.281)		(0.114)	(0.284)
Education Level=2		0.00693	-0.546**		0.00131	-0.560**		-0.0202	-0.522**		-0.0240	-0.524**
		(0.119)	(0.249)		(0.119)	(0.249)		(0.119)	(0.247)		(0.118)	(0.248)
Education Level=3		0.414***	0.161		0.395***	0.146		0.377***	0.181		0.339**	0.217
		(0.141)	(0.290)		(0.140)	(0.291)		(0.140)	(0.290)		(0.141)	(0.288)
Unemployed=1		-0.0237	0.452		-0.0318	0.456*		-0.0186	0.443		-0.0466	0.492*
		(0.129)	(0.276)		(0.129)	(0.276)		(0.129)	(0.276)		(0.129)	(0.277)
HH Size		0.292**	0.440		0.260**	0.431		0.261**	0.441		0.169	0.562*
		(0.132)	(0.292)		(0.131)	(0.293)		(0.131)	(0.296)		(0.137)	(0.294)
HH Size^2		-0.0272*	-0.0585		-0.0239	-0.0575		-0.0234	-0.0595		-0.0140	-0.0719*
		(0.0160)	(0.0371)		(0.0159)	(0.0370)		(0.0158)	(0.0378)		(0.0164)	(0.0373)
Child 0-6=1		-0.179	0.196		-0.172	0.191		-0.177	0.202		-0.145	0.168
		(0.134)	(0.283)		(0.134)	(0.284)		(0.134)	(0.283)		(0.134)	(0.285)
Child 7-15=1		0.157	0.301		0.141	0.296		0.139	0.302		0.0996	0.364
		(0.122)	(0.276)		(0.122)	(0.276)		(0.122)	(0.275)		(0.123)	(0.277)
Relative Abroad=1		0.269	1.110**		0.150	1.092**		0.145	1.106**		-0.201	1.589***
		(0.211)	(0.520)		(0.201)	(0.533)		(0.200)	(0.538)		(0.245)	(0.547)
HH Income Exceeds Expenses=1		-0.373***	-0.158		-0.324**	-0.151		-0.328**	-0.151		-0.185	-0.344
		(0.142)	(0.304)		(0.140)	(0.311)		(0.140)	(0.311)		(0.150)	(0.317)
Log GDP Per Capita Origin		-2.597*	1.595		8.556**	40.22***		9.314***	41.19***		-2.922	61.54***
		(1.473)	(2.952)		(3.509)	(11.22)		(3.533)	(11.61)		(6.104)	(13.77)
Log GDP Per Capita Origin^2		0.0169	-0.465***		-0.505**	-2.394***		-0.561***	-2.430***		0.151	-3.611***
		(0.0801)	(0.153)		(0.201)	(0.653)		(0.202)	(0.672)		(0.353)	(0.798)
Alternative-Specific Variables												
GDP Ratio	1.192***											
	(0.322)											
Unemployment Ratio	-2.271***			-2.299***								
	(0.847)			(0.846)								
Log GDP Per Capita Destination				181.6***			187.5***			194.5***		
				(54.94)			(56.01)			(58.81)		
Log Unemployment Rate Destination										544.9***		
										(203.4)		
Observations	8,244	8,244	8,244	8,244	8,244	8,244	8,244	8,244	8,244	8,244	8,244	8,244

Robust standard errors in parentheses: * p<0.1, ** p<0.05, *** p<0.01.

6. Summary and Concluding Remarks

Analysing migration aspirations is becoming more and more important given developments in the labour markets of individual countries (including demographic trends, technological change, climate conditions, etc.), which will further shape push and pull factors driving migratory flows. Thus, conducting analysis across various geographical contexts and socioeconomic characteristics of individuals (e.g. differences in occupations, skills and income levels) is important, especially for shaping information-based migration and public policies.

In this paper, we first investigate migration intentions in the CESEE countries. Our findings suggest that mostly younger people intend to migrate. However, results suggest that the willingness to migrate decreases beginning at age 22. Furthermore, while males are more inclined to migrate than females, individuals who are married, heads of households, or those who have ties at home (e.g. owning cars or property) are less willing to migrate. A higher willingness to migrate is found for individuals with higher levels of educational attainment, people who are unemployed, those with larger household sizes, and those with more children aged over seven years. In addition, the intention to migrate is also higher for people with relatives already living abroad, for those anticipating higher inflation in their home country, and for those who have experienced significant income reductions. Conversely, people with incomes that exceed their costs and those who are optimistic about their local economy show a lower intention to migrate. We also find that GDP per capita in the home country is generally negatively related to the intention to migrate. However, this is only the case when GDP per capita is above USD $2,700.

In a second step, we tested for the potential destination of migration (differentiating between EU15, EU-CEE and Extra-EU countries) while taking into account the sample selection bias. We did not find any significant differences in age, household head status, unemployment status, having children or household size that lead to a preference for EU15 destination countries over others. Significant effects are found for married individuals, who are less likely to prefer EU-CEE and Extra-EU countries as their destination compared to EU15 countries. Individuals with middle education are indifferent between EU15 and Extra-EU destination countries, but they show a preference for EU15 over EU-CEE countries. Interestingly, those with university education are indifferent between EU15 and EU-CEE destinations, but they prefer Extra-EU over EU15 countries. Individuals with relatives abroad show no preference between EU15 and Extra-EU destinations, but they prefer EU-CEE over EU15 countries. Individuals with excess income over expenses are indifferent between EU15 and EU-CEE destinations, but they favour EU15 over Extra-EU countries.

Although the results on the intention to migrate are as expected, the results concerning the potential destination countries is less obvious in some cases. Interpreting these results therefore requires some caution. The reliability of data on migration aspirations and the phrasing of surveys questions merit special attention, particularly as migration decisions are complex and there are factors that can intervene in this process (Gubert and Senne 2016). Additionally, migration intentions can depend on the time frame for decision making (Williams et al. 2018; Kahanec and Fabo 2013). Indeed, not everyone

expressing the desire to migrate actually will do so, as evident from the disparity between those aspiring to migrate and those who eventually do (IOM 2021; Gallup 2023).

Nonetheless, the insights in this paper derived from micro-level analysis of aspirations and intentions to migrate are valuable for understanding the intricate process behind migration decisions and for offering the benefits mentioned at the beginning of this section. In addition, the results point towards the need to establish a firmer link between the intention to migrate and actual migration, which again will be an important and interesting avenue for future research.

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Appendix

Table A1 / The descriptive statistics of the main determinants of migration decisions in the survey by the dependent variable in the first stage

	Yes					No				
Variables	*Observations*	*Mean*	*Standard Deviation*	*Min*	*Max*	*Observations*	*Mean*	*Standard Deviation*	*Min*	*Max*
Individual Characteristics										
Age	6,347	51.03	15.42	18	90	3,054	38.31	13.36	18	84
Gender	6,347	0.455	0.498	0	1	3,054	0.49	0.5	0	1
HH Head	6,347	0.564	0.496	0	1	3,054	0.441	0.497	0	1
Marital Status	6,302	0.705	0.456	0	1	3,032	0.6	0.49	0	1
Education Level	6,344	1.826	0.7	1	3	3,049	1.999	0.69	1	3
Unemployed	6,347	0.114	0.317	0	1	3,054	0.181	0.385	0	1
Household Characteristics										
HH Size	6,329	2.78	1.372	1	15	3,038	3.324	1.36	1	12
Relative Abroad	6,347	0.214	0.41	0	1	3,054	0.34	0.474	0	1
Child 0-6	6,347	0.124	0.33	0	1	3,054	0.189	0.392	0	1
Child 7-15	6,345	0.178	0.383	0	1	3,050	0.252	0.434	0	1
Tie	6,347	0.628	0.483	0	1	3,054	0.675	0.468	0	1
Financial Situation										
HH Income Exceeds Expenses	6,347	0.298	0.457	0	1	3,054	0.216	0.412	0	1
Personal Income in Euro	3,846	492.1	354.8	10.53	5,113	1,696	456.7	420	19.56	9,308
HH Income in Euro	3,755	874.8	747.8	24.45	15,592	1,783	791.9	769.2	11.41	13,962
Expectations and Past Experiences										
Better Local Economy	6,036	0.534	0.499	0	1	2,928	0.508	0.5	0	1
Higher Local Inflation	6,138	0.753	0.431	0	1	2,988	0.798	0.402	0	1
Income Reduction Experience	6,141	0.126	0.332	0	1	2,895	0.218	0.413	0	1

Table A2 / The probit estimation of migration decision (first stage) for all individuals

Dep. Var.: Migration	(1)		(2)		(3)		(4)		(5)		(6)	
Decision	W/O sq	W sq	W/O sq	W sq	W/O sq	W sq	W/O sq	W sq	W/O sq	W sq	W/O sq	W sq
Log (Age)	-1.21***	6.70***	-1.21***	7.03***	-1.35***	7.35***	-1.34***	7.53***	-1.24***	7.38***	-1.38***	8.24***
	(0.046)	(0.87)	(0.046)	(0.87)	(0.049)	(0.91)	(0.049)	(0.91)	(0.049)	(0.94)	(0.052)	(0.98)
Log (Age)^2		-1.08***		-1.13***		-1.19***		-1.21***		-1.18***		-1.32***
		(0.12)		(0.12)		(0.12)		(0.12)		(0.13)		(0.13)
Gender=1	0.14***	0.15***	0.14***	0.15***	0.097***	0.11***	0.10***	0.12***	0.15***	0.16***	0.11***	0.12***
	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.034)	(0.033)	(0.034)	(0.034)	(0.035)	(0.035)	(0.036)
Marital Status=1	-0.12***	-0.21***	-0.11***	-0.21***	-0.080**	-0.18***	-0.075**	-0.18***	-0.11***	-0.21***	-0.067*	-0.17***
	(0.036)	(0.038)	(0.036)	(0.038)	(0.037)	(0.039)	(0.037)	(0.039)	(0.038)	(0.040)	(0.039)	(0.041)
HH Head=1	-0.028	-0.076**	-0.018	-0.068*	0.013	-0.042	0.018	-0.038	-0.035	-0.086**	0.012	-0.047
	(0.036)	(0.037)	(0.036)	(0.037)	(0.037)	(0.038)	(0.037)	(0.038)	(0.038)	(0.039)	(0.039)	(0.040)
Education Level=2	0.17***	0.14***	0.18***	0.15***	0.096***	0.048	0.10***	0.057	0.13***	0.11***	0.058	0.014
	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.036)	(0.035)	(0.036)	(0.037)	(0.037)	(0.038)	(0.038)
Education Level=3	0.30***	0.23***	0.33***	0.26***	0.16***	0.080*	0.19***	0.11**	0.30***	0.23***	0.17***	0.087*
	(0.043)	(0.044)	(0.044)	(0.045)	(0.045)	(0.046)	(0.045)	(0.047)	(0.046)	(0.047)	(0.047)	(0.049)
Unemployed=1	0.21***	0.17***	0.19***	0.15***	0.100**	0.053	0.093**	0.046	0.13***	0.095**	0.0097	-0.034
	(0.044)	(0.044)	(0.044)	(0.044)	(0.045)	(0.045)	(0.045)	(0.045)	(0.047)	(0.047)	(0.048)	(0.048)
HH Size	0.086***	0.092***	0.085***	0.090***	0.026*	0.032**	0.027*	0.034**	0.090***	0.096***	0.029*	0.035**
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.015)	(0.015)	(0.015)	(0.015)
Child 0-6=1	-0.066	-0.10**	-0.065	-0.11**	-0.028	-0.062	-0.029	-0.065	-0.070	-0.11**	-0.032	-0.069
	(0.044)	(0.044)	(0.044)	(0.044)	(0.044)	(0.044)	(0.044)	(0.044)	(0.047)	(0.046)	(0.047)	(0.047)
Child 7-15=1	0.086**	0.0073	0.082**	-0.00031	0.13***	0.046	0.13***	0.039	0.10**	0.016	0.14***	0.044
	(0.040)	(0.041)	(0.040)	(0.041)	(0.040)	(0.041)	(0.040)	(0.041)	(0.042)	(0.043)	(0.042)	(0.043)
Tie=1	-0.057*	-0.076**	-0.041	-0.060*	-0.042	-0.072**	-0.032	-0.061*	-0.047	-0.067*	-0.024	-0.052
	(0.033)	(0.033)	(0.033)	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)	(0.035)	(0.035)	(0.036)	(0.036)
Relative Abroad=1	0.44***	0.45***	0.45***	0.46***	0.41***	0.43***	0.42***	0.44***	0.41***	0.43***	0.39***	0.41***
	(0.032)	(0.033)	(0.032)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.034)	(0.035)	(0.035)	(0.036)
HH Income Exceeds			-0.27***	-0.29***			-0.18***	-0.18***			-0.098***	-0.10***
Expenses=1			(0.034)	(0.034)			(0.035)	(0.035)			(0.037)	(0.037)
Log GDP Per Capita					-0.64***	5.18***	-0.62***	4.43***			-0.64***	3.41**
Origin					(0.032)	(1.54)	(0.032)	(1.55)			(0.034)	(1.68)
Log GDP Per Capita						-0.32***		-0.28***				-0.23**
Origin^2						(0.086)		(0.086)				(0.093)
Better Local Economy									-0.17***	-0.18***	-0.22***	-0.21***
(Expectation)=1									(0.031)	(0.032)	(0.032)	(0.033)
Higher Local Inflation									0.18***	0.18***	0.16***	0.16***
(Expectation)=1									(0.037)	(0.037)	(0.038)	(0.038)
Income Reduction									0.34***	0.33***	0.34***	0.34***
Experience=1									(0.041)	(0.041)	(0.042)	(0.042)
Constant	3.56***	-10.6***	3.62***	-11.2***	10.1***	-31.6***	9.86***	-28.6***	3.57***	-11.9***	10.2***	-25.2***
	(0.18)	(1.57)	(0.18)	(1.57)	(0.39)	(7.21)	(0.39)	(7.25)	(0.20)	(1.69)	(0.41)	(7.84)
Observations	9,293	9,293	9,293	9,293	9,293	9,293	9,293	9,293	8,395	8,395	8,395	8,395
Pseudo R-squared	0.141	0.149	0.147	0.155	0.176	0.186	0.179	0.188	0.148	0.156	0.185	0.196
AIC	10,080.0	9,996.6	10,015.6	9,925.8	9,671.4	9,563.6	9,647.1	9,538.6	9,031.3	8,946.5	8,641.3	8,536.2
BIC	10,172.8	10,096.5	10,115.5	10,032.8	9,771.3	9,677.8	9,754.1	9,660.0	9,143.8	9,066.1	8,768.0	8,676.9

Robust standard errors in parentheses: * p<0.1, ** p<0.05, *** p<0.01.

Table A3 / Conditional logit estimation of migration-destination decision in different specifications in the second stage (Full Sample)

Choice Dep. Var.:	Model 10.1			Model 10.2			Model 10.3			Model 10.4		
Migration Destination (Base: EU15)	Region Var.	Extra-EU	EU-CEE	Region Var.	Extra-EU	EU-CEE	Region Var.	Extra-EU	EU-CEE	Region Var.	Extra-EU	EU-CEE
Case-specific Variables												
Inverse Mills Ratio		2.247***	4.563**		1.751**	4.395**		1.668**	4.577**		-0.127	6.934***
		(0.781)	(1.951)		(0.731)	(2.038)		(0.727)	(2.065)		(0.939)	(2.123)
Log(Age)		10.98**	21.63*		7.887	20.68		7.279	21.71		-4.096	37.56***
		(5.294)	(12.45)		(4.983)	(13.10)		(4.954)	(13.26)		(6.204)	(14.27)
Log(Age)^2		-1.766**	-3.468*		-1.281*	-3.318		-1.186	-3.483*		0.597	-5.948***
		(0.812)	(1.932)		(0.763)	(2.034)		(0.758)	(2.058)		(0.958)	(2.209)
Gender=1		0.194*	-0.0270		0.158	-0.0414		0.139	-0.00698		0.00816	0.153
		(0.109)	(0.279)		(0.107)	(0.285)		(0.107)	(0.285)		(0.116)	(0.289)
Marital Status=1		-0.463***	-0.842***		-0.398***	-0.823**		-0.404***	-0.827**		-0.166	-1.148***
		(0.155)	(0.317)		(0.149)	(0.326)		(0.149)	(0.331)		(0.171)	(0.336)
HH Head=1		-0.0786	0.307		-0.0731	0.308		-0.0596	0.294		-0.0367	0.271
		(0.111)	(0.275)		(0.111)	(0.274)		(0.111)	(0.273)		(0.111)	(0.276)
Education Level=2		0.0635	-0.515**		0.0544	-0.528**		0.0291	-0.484**		0.0107	-0.467*
		(0.117)	(0.245)		(0.117)	(0.245)		(0.117)	(0.242)		(0.117)	(0.244)
Education Level=3		0.460***	0.171		0.434***	0.152		0.411***	0.198		0.341**	0.276
		(0.140)	(0.285)		(0.140)	(0.285)		(0.140)	(0.284)		(0.141)	(0.284)
Unemployed=1		-0.0541	0.482*		-0.0676	0.482*		-0.0554	0.477*		-0.109	0.555**
		(0.129)	(0.274)		(0.129)	(0.274)		(0.129)	(0.274)		(0.130)	(0.275)
HH Size		0.300**	0.522*		0.252*	0.501*		0.248*	0.524*		0.0816	0.735**
		(0.139)	(0.301)		(0.136)	(0.302)		(0.136)	(0.306)		(0.148)	(0.303)
HH Size^2		-0.0294*	-0.0655*		-0.0246	-0.0631*		-0.0235	-0.0666*		-0.00685	-0.0878**
		(0.0166)	(0.0369)		(0.0164)	(0.0370)		(0.0163)	(0.0377)		(0.0174)	(0.0371)
Child 0-6=1		-0.174	0.0690		-0.157	0.0702		-0.162	0.0772		-0.0893	-0.00817
		(0.135)	(0.287)		(0.135)	(0.289)		(0.134)	(0.288)		(0.135)	(0.289)
Child 7-15=1		0.146	0.218		0.132	0.210		0.128	0.224		0.0892	0.280
		(0.119)	(0.269)		(0.118)	(0.269)		(0.118)	(0.269)		(0.119)	(0.270)
Relative Abroad=1		0.299	1.092**		0.159	1.038*		0.144	1.081*		-0.351	1.728***
		(0.226)	(0.545)		(0.213)	(0.562)		(0.212)	(0.568)		(0.271)	(0.564)
HH Income Exceeds Expenses=1		-0.378**	-0.169		-0.318**	-0.147		-0.316**	-0.163		-0.104	-0.439
		(0.148)	(0.315)		(0.144)	(0.324)		(0.144)	(0.325)		(0.160)	(0.332)
Log GDP Per Capita Origin		-2.002	-1.804		8.515**	33.83***		9.320***	34.49***		-5.393	58.55***
		(1.600)	(3.388)		(3.523)	(11.13)		(3.537)	(11.58)		(5.980)	(13.93)
Log GDP Per Capita Origin^2		-0.00307	-0.258*		-0.493**	-2.027***		-0.553***	-2.045***		0.306	-3.442***
		(0.0803)	(0.156)		(0.201)	(0.647)		(0.202)	(0.670)		(0.346)	(0.806)
Alternative-Specific Variables												
GDP Ratio	1.137***											
	(0.337)											
Unemployment Ratio	-2.559***			-2.569***								
	(0.830)			(0.828)								
Log GDP Per Capita Destination				167.1***			172.6***			179.6***		
				(57.09)			(58.16)			(61.27)		
Log Unemployment Rate Destination										686.2***		
										(209.3)		
Observations	8,514	8,514	8,514	8,514	8,514	8,514	8,514	8,514	8,514	8,514	8,514	8,514

Robust standard errors in parentheses: * p<0.1, ** p<0.05, *** p<0.01.

Table A4 / First-stage probit estimation of migration decision using personal income vs. GDP per capita

	GDP Per Capita		Personal Income	
	(7)		(8)	
Dep. Var.: Migration Decision	**W/O sq**	**W sq**	**W/O sq**	**W sq**
Log (Age)	8.83***	8.73***	10.2***	10.2***
	(1.64)	(1.64)	(1.64)	(1.63)
Log (Age)^2	-1.38***	-1.37***	-1.56***	-1.55***
	(0.23)	(0.23)	(0.23)	(0.22)
Gender=1	0.11**	0.12***	0.17***	0.18***
	(0.047)	(0.047)	(0.045)	(0.046)
Marital Status=1	-0.20***	-0.19***	-0.19***	-0.19***
	(0.054)	(0.054)	(0.053)	(0.053)
HH Head=1	-0.023	-0.027	0.024	0.028
	(0.050)	(0.050)	(0.049)	(0.050)
Education Level=2	0.065	0.040	0.15***	0.15***
	(0.052)	(0.053)	(0.051)	(0.051)
Education Level=3	0.027	0.023	0.29***	0.30***
	(0.064)	(0.064)	(0.061)	(0.061)
HH Size	0.020	0.024	0.080***	0.080***
	(0.020)	(0.020)	(0.020)	(0.020)
Child 0-6=1	-0.095	-0.084	-0.13**	-0.12**
	(0.059)	(0.059)	(0.059)	(0.059)
Child 7-15=1	0.080	0.081	0.045	0.049
	(0.055)	(0.055)	(0.054)	(0.055)
Tie=1	-0.11**	-0.12**	-0.068	-0.072
	(0.048)	(0.048)	(0.047)	(0.047)
Relative Abroad=1	0.36***	0.37***	0.40***	0.40***
	(0.046)	(0.046)	(0.046)	(0.046)
Log (Personal income)			-0.31***	0.56*
			(0.032)	(0.31)
Log (Personal income) ^ 2				-0.073***
				(0.026)
Log GDP Per Capita Origin	-0.74***	7.74***		
	(0.044)	(2.10)		
Log GDP Per Capita Origin^2		-0.47***		
		(0.12)		
Constant	-7.27**	-45.1***	-15.3***	-17.7***
	(2.97)	(9.90)	(2.93)	(3.06)
Observations	4,457	4,457	4,457	4,457
Pseudo R-squared	0.136	0.138	0.104	0.106
AIC	5,070.6	5,057.3	5,256.2	5,247.9
BIC	5,160.3	5,153.4	5,345.8	5,343.9

Robust standard errors in parentheses: * p<0.1, ** p<0.05, *** p<0.01.

Table A5 / Summary statistics of annual personal income and GDP per capita across 10 home countries (in USD)

	Personal Income 2019					Average GDP per
	Observation	Min	Max	Median	Mean	capita 2014-2018
Albania	743	327.6	49158.0	3823.2	3951.6	4,116.1
Bosnia and Herzegovina	372	267.6	68685.6	3640.8	4749.6	4,869.2
Bulgaria	418	549.6	25758.0	4670.4	5156.4	7,338.1
Croatia	754	906.0	45300.0	9060.0	9782.4	12,664.3
Czechia	466	523.2	26686.8	9418.8	10292.4	18,371.4
Hungary	470	578.4	33028.8	6853.2	7501.2	13,198.3
North Macedonia	538	261.6	87356.4	3276.0	4099.2	4,954.4
Poland	514	1094.4	125020.8	7501.2	8570.4	13,105.9
Romania	713	141.6	56631.6	4248.0	5041.2	9,561.8
Serbia	554	1140.0	22803.6	4561.2	5488.8	5,815.7

Sources: OeNB Euro Survey in 2019 and WDIs of the World Bank; authors' calculations

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