Working Paper 3/2024

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Giacomo Boffi, Eduard Suari-Andreu, Olaf van Vliet

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Decomposing the net fiscal position of migrants in Europe[i]

Giacomo Boffi[ii], Eduard Suari-Andreu[iii], Olaf van Vliet[iv]

ABSTRACT

In this study, we are the first to employ the Oaxaca-Blinder decomposition to analyse the difference between the net fiscal positions of migrants and native-born individuals in 15 EU countries from 2007 to 2018. We combine EU-SILC cross-sectional data on individual background characteristics, personal income, and welfare benefits with OECD information on personal income taxes and social security contributions. Our findings reveal crucial determinants of the direct fiscal gap between migrants and natives. To varying degrees, age, education, and country effects are the largest contributors to the observed differential between the net fiscal positions of natives (more negative) and migrants (more positive). We observe important differences between intra-EU and extra-EU migrants. More specifically, education has a significant positive effect on the net fiscal position of intra-EU migrants, while it is nearly irrelevant for extra-EU migrants. By shedding light on the factors explaining differences in the net fiscal impact, our study offers valuable insights for policymakers aiming to design interventions to foster inclusivity and reduce inequality between migrants and natives in Europe.

Keywords: net fiscal position; immigration; Oaxaca-Blinder decomposition; European Union;

JEL classification: I31, J15, O5

[i] We would like to thank participants at the 64th Annual Conference of the Italian Economic Association on October 20, 2023, participants at the annual State of the Art Conference of the Directorate General for Migration of the Dutch Ministry of Justice on November 14, 2023, and participants at the Annual Social Citizenship and Migration Symposium at Leiden University on January 17, 2024, for the useful comments on earlier versions of this paper. We also thank Vincent Bakker for help with analysing tax data from the OECD. Van Vliet thanks Institute Gak for financial support. This study is part of the Horizon Europe project TransEuroWorkS (N. 101061198) and of Leiden University's research programme Social Citizenship and Migration. This study is based on data from Eurostat, EU Statistics on Income and Living Conditions (EU-SILC, 2007-2018).

[ii] Giacomo Boffi, corresponding author: PhD Candidate at the Department of Economics, Leiden University and Leiden University College. Leiden-Delft-Erasmus Centre Governance of Migrations and Diversity (LDE-GMD). Email: g.boffi@law.leidenuniv.nl. Tel: +31 71 527 6265. Orcid iD: https://orcid.org/0000-0002-3296-7705.

[iii] Leiden University, Department of Economics; Leiden-Delft-Erasmus Centre Governance of Migrations and Diversity (LDE-GMD). E-Mail: e.suari.andreu@law.leidenuniv.nl. ORCID iD: https://orcid.org/0000-0001-8528-7976.

[iv] Leiden University, Department of Economics and Institute of Public Administration; Erasmus University Rotterdam, Erasmus School of Social and Behavioural Sciences; Leiden-Delft-Erasmus Centre Governance of Migrations and Diversity (LDE-GMD). E-Mail: o.p.van.vliet@law.leidenuniv.nl. ORCID iD: https://orcid.org/0000-0002-5539-1761.

1. Introduction

In recent years, migration to and within the European Union (EU) and its impact on the welfare systems of the host countries have become topics of intense debate, both among policymakers and the general public (Ruist, 2020). As globalization and international mobility continue to reshape the demographics of many countries, understanding differences between migrants and natives and the assimilation of the former into host societies is crucial for governments and researchers (Fiorio et al., 2023; OECD and European Commission, 2023). In this study, we contribute to the existing literature by examining the net fiscal position (NFP) of migrants and natives in 15 EU countries from 2007 to 2018. We do so by employing the Oaxaca-Blinder decomposition, which allows us to assess the underlying factors contributing to differences in NFP between migrants and natives.

Free movement of people within the EU and immigration from extra-EU countries have significant implications for both the economies and societies of the member states. As a result of push and pull factors that ultimately determine who migrates (and who stays after migration), migrants arrive in host societies with diverse sets of skills, education levels, and socioeconomic backgrounds. These differences affect their economic integration and their potential reliance on welfare programs. Importantly, since the early 2000s, intra- and extra-EU migration flows have considerably changed in magnitude, composition, and countries of origin (Ruist, 2020). Therefore, it is crucial to consider a long-term perspective and possible future developments. Furthermore, European welfare systems vary widely in their design, generosity, and accessibility, making it relevant to conduct multi-country analyses when studying the fiscal impact of immigration.

The existing literature on the NFP of migrants in Europe primarily consists of country-specific studies yielding somewhat mixed results. Generally, intra-EU migrants tend to make more positive fiscal contributions compared to extra-EU migrants, often due to higher employment rates among the former (Bogdanov et al., 2014; Dustman and Frattini, 2014; Hansen et al., 2017; Ruist, 2014).[5] The results in the literature often demonstrate that the NFP also depends on the generosity of the welfare system of the host country. For instance, Scandinavian countries with more generous welfare states often show a relatively negative fiscal impact of immigrants compared to less generous Southern European countries, where migrants with a more positive NFP help alleviate the fiscal burden of the ageing native population (Chojnicki et al., 2018; Furlanetto and Robstad, 2019; Izquierdo et al., 2010).

Differences in empirical results between country-specific studies are related to variation in migrant populations and tax and benefit systems on the one hand, and to differences in methodologies and data sources on the other hand (Clemens, 2021). International comparative studies would solve

[5] People who move within the EU are most often not categorized as migrants in official EU migration statistics. That is because the EU is a single supranational entity in which citizens of the member states do not require visas for internal cross-country movements. They are most often referred to as 'EU mobile citizens'. For the purpose of the present study, as commonly done in the literature, we refer to them as 'intra-EU migrants'.

methodological and data-related inconsistencies, but large cross-country surveys of the resident European population have become available only relatively recently. For this reason, the available comparative evidence is scarce (Boeri, 2010; Boffi et al., 2024; Christl et al., 2022; Fiorio et al., 2023; Nyman and Alshkog, 2018; Österman et al., 2023).

In the present study, we contribute to the literature on the fiscal impact of immigration by being the first to provide a rigorous assessment of the factors explaining the differences between the NFP of migrants and natives for as many as 15 EU countries and as long as 12 years. This contribution is significant for both academics and policymakers. For academics, by employing the Oaxaca-Blinder decomposition, our study advances the methodological approaches used in the literature on the fiscal impact of immigration, offering a nuanced understanding of the endowment and coefficient effects that drive fiscal disparities. This allows us to isolate the impact of specific background characteristics, such as age and education, on the NFP of different migrant groups.

For policymakers, this study offers three main contributions. First, it provides crucial insights for informed migration policy design, enabling integration strategies to address the specific factors driving fiscal disparities between migrants and natives. Second, it allows for the assessment of the adequacy of social safety nets and long-term fiscal planning with a better understanding of the net fiscal impact of immigration. Third, it helps ground the public perception of the direct fiscal effects of immigration in robust empirical evidence. In other words, it aids in understanding who the migrants contributing to the European welfare states are and how they differ from natives and among themselves.

The 15 EU countries selected for this study represent a diverse range of economic, demographic, and migration profiles. These include both traditional destination countries for migrants, such as Germany and France, as well as countries with a more recent history of emigration patterns, such as Czechia, Estonia, Latvia, and Slovenia. By examining a geographically and economically diverse set of EU member states, we provide a comprehensive overview of the welfare disparities experienced by migrants and natives across the EU. The timeframe of the analysis, spanning from 2007 to 2018, captures the impact of the global financial crisis which started in 2008, the European sovereign debt crisis of 2011, and the peak in refugee inflow of 2015. This period has seen significant changes in the economy and demography of the EU, which in turn have influenced the welfare dynamics among migrants and natives differently in each country.

To conduct our analysis, we employ repeated cross-sectional data at the individual level from the European Union Statistics on Income and Living Conditions (EU-SILC) for (gross) personal income and recipiency of contributory (education, unemployment, retirement, sickness, survival) and non-contributory benefits (children, housing, social exclusion). We combine them with information from the OECD on rates, thresholds, maximum contributions, and allowances for personal income taxes and social security contributions at the national and local levels. We use these data to calculate the NFP of natives and migrants at the individual level. We adopt a static, direct, and bottom-up approach that consists of subtracting welfare benefits received from taxes and social security contributions paid at the

individual level. In doing so we adopt the same approach as Boffi et al. (2024), who present the evolution of the NFP of migrants and natives in Europe extensively across countries, welfare state types, and over time, but without a decomposition analysis of the driving factors.

We start the empirical analysis by running an OLS regression of the individual NFP on migration background. First, we consider migration background without controls. Second, we include country and year effects (and their interactions), and finally we also add background characteristics (age, gender, civil status, household size, number of children at home, education, and health). We initially study the general group of migrants and then run separate regressions for intra-EU and extra-EU migrants. The findings show that an intra-EU migration background always has a statistically significant positive effect on the individual NFP, whether including country and year effects and background characteristics or not. Instead, an extra-EU migration background has a significant positive effect when excluding controls but turns negative and statistically significant when including background characteristics.

Furthermore, we apply an Oaxaca-Blinder decomposition to assess the contributions of the background characteristics to the differences between the NFP of natives and migrants. This method enables us to dissect the NFP disparities between migrants and natives into two main components: the 'endowment effect' and the 'coefficient effect'. The endowment effect (or explained part) captures the part of the gap that is explained by differences in endowments of background characteristics between migrants and natives, such as age, education, and family structure. The coefficient effect (or unexplained part) captures the part of the gap explained by differences in the returns or coefficients associated with these characteristics and differences in unobservables. Because it is impossible to disentangle coefficient effects and returns to unobservables, the unexplained part of the difference is harder to interpret (Blinder, 1973; Jann, 2008; Oaxaca, 1973).

The findings of the decomposition reveal that age and education are the personal characteristics contributing the most to the explained part of the difference between the NFP of migrants and natives. However, we observe important differences between intra- and extra-EU migrants. For instance, both age and education show large and statistically significant contributions to the gap between intra-EU migrants and natives. Instead, for extra-EU migrants, while the contribution of age becomes even more substantial, the effect of education becomes close to zero and statistically insignificant. This latter finding indicates that there is little positive impact of extra-EU education and training on the economic integration of migrants in Europe. This is in line with previous findings in the literature on skill mismatches and employment gaps between intra-EU and extra-EU migrants (Bevelander and Pendakur, 2014; OECD and European Commission, 2023; Rosso and Gaeta, 2019).

The rest of the paper is structured as follows. Section 2 discusses the available evidence on the NFP of migrants in Europe. It also pays special attention to previous contributions using the Oaxaca-Blinder decomposition in migration studies. Section 3 presents the data and summary statistics. Section 4 discusses the methodology employed in the analysis. Section 5 presents the results. Section 6 concludes.

2. Literature Review

2.1 The Net Fiscal Position of Migrants in Europe

Mostly due to reasons of data availability, the empirical evidence on the NFP of migrants from a European-wide perspective is relatively recent. Based on EU-SILC data, Boeri (2010) conducts the first multi-country work on the fiscal impact of migrants in Europe. Using repeated cross-sections from 2004 to 2007, he finds that migrants are over-represented among recipients of non-contributory transfers, with indications that education and family structure affect the individual fiscal balance. Nyman and Alshkog (2018) extend the use of EU-SILC data from 2004 to 2015, combining them with information from national accounts and focusing exclusively on intra-EU migration. They show that intra-EU migrant households, on average, are higher net fiscal contributors than native households across most European countries, generating net fiscal contributions of around €5,000 per year. Using the same data, Österman et al. (2023) build on previous results by studying the net fiscal contributions of intra-EU migrants in different welfare state regimes. Their evidence suggests that migrants fiscally contribute more than natives in all welfare regimes in Europe, with a particularly strong effect in Southern European countries, where social expenditure is relatively lower and more oriented towards retirement benefits for the ageing native population.

Relying on the tax-benefit simulation model Euromod and EU-SILC data for 2015, Christl et al. (2022) examine present and future contributions of natives, intra-EU, and extra-EU migrants. In their analysis, all population groups appear as net fiscal recipients, but the NFP of migrants is less negative than that of natives. Furthermore, when estimating lifetime net fiscal contributions, they foresee that the average NFP of natives will worsen in the coming years due to the rapid ageing of the native European population. Fiorio et al. (2023) focus on the period immediately before and after the large influx of refugees in 2015-2016. They select the 14 EU member countries prior to the eastern enlargement (excluding the United Kingdom) for the period 2014 to 2018 and find that, on average, migrants make larger net fiscal contributions than natives across most countries and years, even when compared to natives in the same position of the national income distribution.

Finally, using EU-SILC cross-sectional data for 15 EU countries for the period 2007 to 2018, Boffi et al. (2024) corroborate the finding that intra-EU migrants are the population group with the relatively most positive NFP across most EU countries and years. Furthermore, they illustrate how the gap between the NFP of migrants and natives has been widening since the 2008 global financial crisis. Finally, they show that migrants tend to make relatively higher fiscal contributions in Southern European countries, where the welfare state model is characterized by lower social expenditure and is greatly devoted to pensions.

Overall, these results highlight the complex relationship between immigration and fiscal outcomes, influenced by various factors including the duration of stay in the host country and its welfare

state model, year effects, and the migration background of individuals (whether intra-EU or extra-EU).[6] Most of the aforementioned studies provide extensive descriptive evidence on the NFP of different groups of migrants and natives in various European countries and years (Boffi et al., 2024; Hennessey and Hagen-Zanker, 2020; OECD, 2021). Some include also empirical evidence by regressing the NFP of migrants on variables like the years since migration, the individual skill level, and the welfare state type (Boeri, 2010; Fiorio et al., 2023; Österman et al., 2023). However, there is a substantial knowledge gap in the analysis of the factors determining the difference between the NFP of migrants and natives across countries and over time. What factors determine the generally more positive NFP of migrants in Europe? Are these country and year characteristics or personal characteristics? What variations can we observe across countries and over time? To answer these questions, we employ an Oaxaca-Blinder decomposition.

2.2 The Oaxaca-Blinder Decomposition

The Oaxaca-Blinder decomposition, originally developed by Oaxaca (1973) and extended by Blinder (1973), is a widely employed analytical tool in labour economics and discrimination studies.[7] It is often used to disentangle the sources of wage or income gaps between two groups, such as migrants and natives. To do so, it calculates estimates of the contributions of two main components to the wage or income gap: differences in endowments and differences in coefficients. Endowments refer to observable characteristics such as education, labour market experience, and civil status, while coefficients refer to the unexplained portion of the gap attributed to the returns to such characteristics and to unobservables, like discrimination and/or labour market segmentation. The features of the decomposition make it a particularly relevant tool for assessing the socioeconomic position of migrants compared to native-born individuals.

Several studies have applied the Oaxaca-Blinder decomposition to analyse various gaps between migrants and natives. These works have often revealed substantial wage or income gaps in favour of native-born individuals. Among the earliest adopters of this method in migration studies, Chiswick (1978) analyses the earnings gap among immigrants in the United States, finding a considerable portion of the gap attributable to differences in endowments, particularly education. Borjas (1993) reaches a similar finding on the critical importance of education for migrants in the United States. Within this

[6] For more, Hennessey and Hagen-Zanker (2020) provide a recent state-of-the-art literature review of most empirical evidence on the NFP of migrants and natives based on the data, methods, and findings of each study. OECD (2021) is another good starting point for an overview of the literature.

[7] There is a debate in the social sciences regarding the origin of the decomposition technique. Kitagawa (1955) proposed an earlier method to decompose differentials in outcome variables for two demographic groups by controlling for differences in selected characteristics between these groups. Consequently, some scholars refer to the decomposition as the Kitagawa-Oaxaca-Blinder (KOB) decomposition. While the Kitagawa decomposition is mostly applied in sociology, the Oaxaca-Blinder decomposition remains widely used in economics. Therefore, we refer to it as the Oaxaca-Blinder decomposition. For more on this debate, see Oaxaca and Sierminska (2023).

literature, it has become clearer over time that it is important to consider diversity within migrant populations, such as differences in the country of origin, migration status, and skill level (Altonji and Card, 1991; Borjas, 1993).

In Europe, most studies employing the decomposition are country-specific and have looked at wage disparities between migrants and natives. For Sweden, Hammarstedt and Palme (2012) find that migrants experience less intergenerational mobility than natives and that their earnings remain lower in the following generations, based on their analysis of detailed administrative data. Employing EU-SILC data for 2005, Kahanec and Zaiceva (2009) find that foreign origin is of key importance in determining wage levels in Western EU states. They also find that both foreign origin and citizenship matter more in Eastern EU member states, their roles depending on gender.

Using EU-SILC cross-sectional data for 2009, Huber and Oberdabernig (2016) are the first to employ the Oaxaca-Blinder decomposition to study the recipiency of welfare benefits, in the form of cash transfers, by migrants in Europe. Their findings show that differences in benefit receipt between migrants and natives diminish or disappear altogether after controlling for differences in observable characteristics. The largest part of this gap is explained by differences in benefit receipt rather than benefit levels conditional on receipt. For contributory benefits, age is the personal characteristic contributing the most to native-immigrant differences. For non-contributory benefits, differences in household size and composition appear to be the most important. Using the EU-SILC cross-sections from 2010 to 2015, Jakubiak (2020) finds that migrants rely on social assistance less often and receive lower amounts than natives. Those conclusions are reversed, however, when old-age benefits are not considered, especially in the case of extra-EU migrants. Using administrative data for the Netherlands from 2004 to 2014, with a special focus on migrants from Central and Eastern Europe, Suari-Andreu and Van Vliet (2023) find in their decomposition that the factors contributing the most to the differences in benefit receipt between migrants and natives are age and family structure. Furthermore, they conclude that the gap between the two groups gradually closes the longer the migrants stay in the host country.

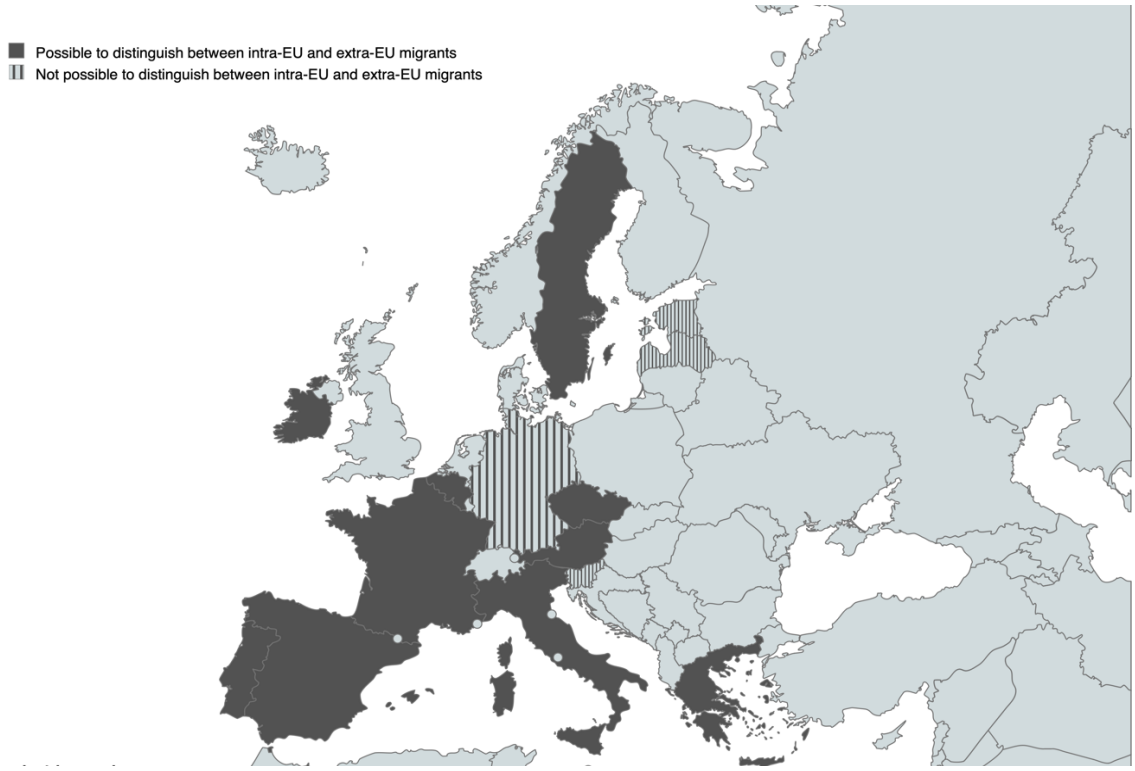
In the present study, we contribute to the literature by being the first to employ an Oaxaca-Blinder decomposition to analyse the factors contributing to the differences in NFP between migrants and natives in Europe, thus not focusing exclusively on benefit receipt, for as many as 15 EU countries and as long as 12 years.

3. Data

All the individual-level data on benefits and gross personal income come from the European Union Statistics on Income and Living Conditions (EU-SILC). The EU-SILC collects individual-level survey data from all EU member countries from 2003 onwards, and we select those for the period from 2007 (when most countries joined the dataset) to 2018. All the countries reporting full information on gross

personal income and welfare benefits for the years selected are included. These are Austria, Belgium, Czechia, Estonia, France, Germany, Greece, Ireland, Italy, Latvia, Luxembourg, Portugal, Slovenia, Spain, and Sweden. Four countries do not allow to distinguish between intra-EU and extra-EU. These are Estonia, Germany, Latvia, and Slovenia. For them, only the overall 'migrant' category is available.[8] For a map of the countries included in the sample, see Figure 1 below.

Figure 1: Countries included in the sample.



Income tax-related information, including thresholds, rates, contributions, surtaxes, and deductibles at the national and local levels, is drawn from the OECD database *Taxing Wages*.[9] All these are combined with EU-SILC gross income data to calculate the yearly taxes and social security contributions paid by each individual. Different rates are applied to employees and self-employed. We only make an exception for wealth taxes, which are directly reported by the EU-SILC and thus do not require complementary information from the OECD.

Regarding benefits, the EU-SILC categorizes cash transfers as contributory or non-contributory. Contributory benefits are linked to individuals' previous payments to the government, such as old-age or unemployment benefits. Non-contributory benefits, like child or housing benefits, are not dependent

[8] Unfortunately, the data do not provide information on the reason for migration. Therefore, it is not possible to distinguish asylum seekers, for example, from family reunification migrants. Since country residents are the population of reference of this survey, seasonal and short-stay migrants are excluded from the sample.

[9] Some countries apply different personal income tax rates and thresholds depending on demographic characteristics (e.g., age, civil status) and labour market parameters (e.g., hours of work). We distinguish between self-employed and employees. Our data do not allow us to make these distinctions.

on prior contributions but may consider other variables like household size. In the EU-SILC, contributory benefits are measured at the individual level and include benefits for unemployment, disability, old-age, sickness, survival, and education. Non-contributory benefits are instead measured at the household level and include benefits for child support, housing, and social assistance. Given that our analysis is at the individual level, as common practice in the literature, individual non-contributory benefits are calculated by dividing the amount received at the household level by the number of adults in the household (Christl et al., 2022). Finally, we use Eurostat databases on price levels to adjust benefits and contributions for inflation and differences in purchasing power across countries.

After dropping observations for individuals younger than eighteen (-94,862) and for those not reporting information on migration background, gross disposable income, and personal characteristics (age, female, civil status, number of children at home, household size, education level, and health status) (-380,840), our final sample consists of 2,785,244 observations corresponding to adult individuals in 15 EU countries, from 2007 to 2018. Migrants, which we define as foreign-born residents, make up 10.7% (3.8% intra-EU and 6.9% extra-EU) of the observations (299,040).[10] Table 1 below presents the summary statistics for the selected sample.

Table 1: Summary statistics by migration background, across countries and years (2007-2018).

	Native-born	Intra-EU migrant	Extra-EU migrant*
Net fiscal position (€, mean)	-1619.7	-70.4	-1411.6
Age: 18-25 (%)	12.7	18.3	15.6
Age: 25-34 (%)	16.6	23.8	20.8
Age: 35-44 (%)	18.3	20.5	19.8
Age: 45-54 (%)	17.5	15.0	15.5
Age: 55-64 (%)	25.7	15.9	21.8
Age: 65 and older (%)	9.2	6.5	6.5
Female (%)	52.8	54.6	55.8
Civil status: never married (%)	27.6	23.4	19.1
Civil status: married (%)	55.7	60.1	62.0
Civil status: separated (%)	1.4	1.8	1.9
Civil status: widowed (%)	8.9	5.7	8.4
Civil status: divorced (%)	6.5	8.9	8.6
N. of children at home (mean)	0.4	0.7	0.7
Household size (mean)	2.8	2.9	3.0

[10] The alternative approach would be to define as migrants all foreign nationals resident in a country. However, citizenship laws and naturalization procedures differ greatly among the countries in the sample.

Health: very good (%)	19.7	25.8	18.5
Health: good (%)	45.1	46.4	41.6
Health: fair (%)	24.8	19.1	26.8
Health: bad (%)	8.4	7.0	10.5
Health: very bad (%)	2.1	1.6	2.5
Education: primary (%)	17.8	19.4	12.7
Education: secondary (%)	59.4	50.5	61.3
Education: higher (%)	22.9	30.0	26.1
N	2,486,204	106,020	193,020

Notes: *Estonia, Germany, Latvia, and Slovenia do not distinguish between intra-EU and extra-EU migrants. In these cases, the value for extra-EU migrants refers to the whole group of migrants. For this reason, the differences in the values between intra-EU and extra-EU migrants would be more marked if these countries would be excluded from the sample.

Regarding the personal characteristics, on average, both intra-EU and extra-EU migrants are younger than natives, less likely to have been never married, with more children at home and bigger households, and more likely to have higher education. Interestingly, intra-EU and extra-EU migrants are only different with regard to health. A lower percentage of intra-EU migrants defines their health as 'very bad' than natives and a higher percentage defines it as 'very good'. The opposite is true for extra-EU migrants. It is important to remind that Estonia, Germany, Latvia, and Slovenia do not distinguish between intra-EU and extra-EU migrants. In these cases, the values for extra-EU migrants refer to the whole group of migrants. For this reason, the differences between the average values for intra-EU and extra-EU migrants would be more marked were these countries excluded from the sample.[11]

The summary statistics vary greatly across countries. Migrants may self-select into specific destination countries (and decide whether to stay or migrate again) based on historical ties, previously-established migrant communities, linguistic closeness, geographical proximity, labour market opportunities, and cultural heritage, among other factors. Figure 2 shows that in Estonia, France, Germany, Ireland, and Sweden, migrants tend to be older, more educated, and more likely to be married than in Greece, Italy, and Spain. In Figure 3 we do not of observe major difference between migrants in different years. However, the later years in the sample show more marked differences between migrants and natives. In 2018, migrants tend to be younger, with more children, and healthier than

[11] If Estonia, Germany, Latvia, and Slovenia were excluded from the sample for the summary statistics, extra-EU migrants would then appear to be even younger, with a higher average number of children at home, with bigger households, more likely to be in bad health conditions, and relatively less likely to have higher education.

natives compared to 2007. This descriptive evidence is line with the reported rapid ageing of the native European population (Eurostat, 2023b).[12]

4. Methodology

The individual NFP is generally defined as the difference between the taxes paid to the government and the monetary value of public services and benefits received. The most elaborate calculations of this parameter include indirect effects (i.e., fiscal effects via the influence of the individual's behaviour on national economic activity, unemployment, and prices, among others) and dynamic effects (i.e., present value of future fiscal effects based on assumptions about future labour market participation and outmigration, among others) (Clemens, 2021; Hinte and Zimmermann, 2014). Estimating indirect and dynamic effects requires strong assumptions on demographics, labour market participation, and economic activity for migrants and natives, which are hardly testable across the large number of countries and years in our dataset. For this reason, in the present study, we choose to adopt a static, direct, and bottom-up approach (i.e., starting from individual data) that consists of subtracting welfare benefits received in the form of cash transfers from taxes and social security contributions paid at the individual level. Even if we leave out dynamic effects, we do employ a dataset covering a long period of time. This feature is not common in the literature, and it allows us to gauge important changes in the NFP over time. For a more detailed overview of all the methods available for the calculation of the NFP, see Boffi et al. (2024).

Summary statistics for the average individual NFP of migrants and natives across countries and years are included in Table 1. In line with previous evidence, all three population groups appear as net fiscal recipients, to different degrees. On average, natives have the relatively most negative NFP, while intra-EU migrants have the relatively most positive NFP. Extra-EU migrants have a NFP more negative than intra-EU ones, but less so than natives. To calculate the impact of having a migration background on the individual NFP, we estimate by means of OLS regression the following equation:

$$NFP_i = \beta_0 + \beta_1 MB_i + \boldsymbol{X}_i'\boldsymbol{\beta}_2 + \varepsilon_i \quad (1)$$

where NFP_i is the net fiscal position of individual i, MB_i is a dummy variable for the individual migration background (migrant or native), $\boldsymbol{X}_i$ is a vector of control variables including personal characteristics (age in categories, gender, civil status, household size, number of children in the

[12] Summary statistics across countries and years have also been estimated for intra-EU and extra-EU migrants separately, for the countries that allow to do so. For concision, they are not discussed in the main text. They are presented in Figures 10 and 11 in the Appendix.

household, education level, and health condition) and year and country effects for individual i, and ε_i is the individual error term.

As a baseline we estimate Equation (1) for the general pool of migrants compared to natives, and then estimate the effect for intra-EU and extra-EU migrants separately. We do so by using the OLS estimator with the standard errors clustered at the household level to avoid collinearity between the results of individuals from the same household. We expand on the baseline analysis by employing the Oaxaca-Blinder decomposition to disentangle the contributions of all the controls included in $\boldsymbol{X}_i$ to the differentials between the NFP of native-born individuals and migrants. The Oaxaca-Blinder decomposition consists of two steps. First, the estimation of the baseline equations separately for migrants (m) and natives (n), second, the subtraction of the expected value of the latter from the former. In their simplest form, these two steps can be written as:

$$NFP_{mi} = \beta_{0m} + \boldsymbol{X}'_{mi}\boldsymbol{\beta}_m + \mu_{mi} \quad (2)$$

$$NFP_{ni} = \beta_{0n} + \boldsymbol{X}'_{ni}\boldsymbol{\beta}_n + \mu_{ni} \quad (3)$$

and

$$E(NFP_{mi}) - E(NFP_{ni}) = E(\boldsymbol{X}_{mi})'\boldsymbol{\beta}_m - E(\boldsymbol{X}_{ni})'\boldsymbol{\beta}_n, \quad (4)$$

where NFP_i is the individual net fiscal position for either migrants (m) or natives (n), $\mathbf{X}_i$is the vector of controls for each of the two groups, and $\boldsymbol{\beta}$ is a vector containing all parameter estimates for each of the two groups. By adding and subtracting $E(\mathbf{X}_{mi})'\boldsymbol{\beta}_n$, Equation (4) can be rewritten as:

$$E(NFP_{mi}) - E(NFP_{ni}) = [E(\boldsymbol{X}_{mi}) - E(\boldsymbol{X}_{ni})]'\boldsymbol{\beta}_n + E(\boldsymbol{X}_{mi})'(\boldsymbol{\beta}_m - \boldsymbol{\beta}_n). \quad (5)$$

The first summand on the right-hand side of Equation (5) captures the difference in the expected outcome corresponding to the differences in observables weighted by the coefficients of the equation for natives. The second summand captures the part of the difference in the expected outcome that corresponds to the differences in coefficients weighted by the expected value of the observables for migrants. The first summand is interpreted as the explained part of the difference, since it captures the part that is explained by differences in endowments of the observables between migrants and natives. The second summand can be interpreted as the unexplained part of the difference, since it captures the part that is explained by differences in the returns or coefficients associated with the observables and other possible differences in unobservables. In its current formulation, Equation (5) uses the vector of

coefficients for natives as a weight for the effect of the differences in observables, assuming that the coefficients are the same for both groups.

However, it is possible, if not likely, that the two groups present different returns or coefficients. For this reason, we use a variation of the decomposition proposed by Oaxaca and Ransom (1994) and applied by Fortin (2008) and Suari-Andreu and van Vliet (2023), among others. Therefore, instead of adding and subtracting $E(\mathbf{X}_{mi})'\boldsymbol{\beta}_n$ to Equation (4), we add and subtract $[E(\boldsymbol{X}_{mit}) - E(\boldsymbol{X}_{nit})]'\boldsymbol{\beta}_p$, where $\boldsymbol{\beta}_p$ is a vector of coefficients from the pooled model in Equation (1), where the dummy variable MB_i for the migration background of the individual is included. In this way, we obtain Equation (6) below:

$$E(NFP_{mi}) - E(NFP_{ni}) = [E(\boldsymbol{X}_{mi}) - E(\boldsymbol{X}_{ni})]'\boldsymbol{\beta}_p + E(\boldsymbol{X}_{mi})'(\boldsymbol{\beta}_m - \boldsymbol{\beta}_p) - E(\boldsymbol{X}_{ni})'(\boldsymbol{\beta}_n - \boldsymbol{\beta}_p) \quad (6)$$

where the unexplained part is divided into two further components, the first capturing the impact of differences in the coefficients associated with observable characteristics for migrants compared to the pooled group, and the second doing the same but for natives. Equation (6) has the additional advantage of drawing a direct connection between the OLS model used to perform the baseline analysis and the one used to estimate the Oaxaca-Blinder decomposition.

5. Results

5.1 Baseline

Tables 2 to 4 present the baseline results estimated by OLS. Table 2 shows the estimates we obtain for the general migrant group. That is, not separating between intra-EU and extra-EU.

Table 2: Baseline analysis (OLS) for the general pool of migrants.

VARIABLES	(1) NFP	(2) NFP	(3) NFP
Migrant	683.6***	481.5***	-207.8***
	(23.76)	(23.80)	(21.30)
Age: 25-35			1,365***
			(15.91)
Age: 35-45			1,682***
			(19.73)
Age: 45-55			-3,541***
			(27.24)
Age: 55-65			-10,621***
			(24.73)

Age: over 65			-1,534***
			(13.91)
Female			185.0***
			(11.14)
Civil status: married			393.0***
			(16.47)
Civil status: separated			-513.0***
			(45.24)
Civil status: widowed			-831.9***
			(25.58)
Civil status: divorced			-282.9***
			(27.96)
N. children in the household			-362.1***
			(9.776)
Household size			46.84***
			(5.437)
Education: secondary			-1,040***
			(15.05)
Education: higher			980.7***
			(24.09)
Health: good			-962.3***
			(16.83)
Health: fair			-1,831***
			(19.92)
Health: bad			-2,102***
			(24.01)
Health: very bad			-2,343***
			(35.77)
Country, year, and country-and-year fixed-effects	No	Yes	Yes
Constant	-1,620***	-2,089***	1,746***
	(7.514)	(116.3)	(94.65)
Observations	2,785,244	2,785,244	2,785,244
R-squared	0.000	0.021	0.289

Notes: Robust standard errors clustered at the household level in parentheses. Country effects include Austria, Belgium, Czechia, Estonia, France, Germany, Greece, Ireland, Italy, Latvia, Luxembourg, Portugal, Slovenia, Spain, and Sweden. Year effects include all the years from 2007 to 2018. *significant at the 10% level, **significant at the 5% level, ***significant at the 1% level.

In Column 1 the individual NFP is regressed on the individual migration background without controls. In this case, across countries and years, migrants present a more positive NFP than natives of €683.6, significant at 1%. This is consistent with recent findings in the literature on the more positive NFP of migrants in Europe (Boffi et al., 2024; Christl et al., 2022) and with the descriptive evidence from Table 1, where the general migrant group presents a relatively more positive average individual NFP to the same amount. In Column 2, country and year effects and their interactions are included. Notably, the effect size of having a migration background decreases to €481.5. This gives preliminary evidence that differences across countries and years contribute positively to the observed difference between the NFP of natives and migrants. Column 3 shows that, once we include the controls, the effect

of having a migration background becomes negative, indicating that migrants have a more negative NFP of -€207.8 on average compared to natives, significant at 1%. In other words, personal characteristics are able to fully explain most of the more positive NFP of migrants and there are remaining unobserved factors leading to a more negative NFP.[13]

In the last specification, the effects of all background characteristics are statistically significant at 1%. Among these, age categories appear to have the largest impact on the NFP. The effect peaks for the age group between 35 and 45 years. Being in that group has a positive effect of €1,682 on the NFP relative to individuals under 25. The estimate is the lowest for the age group between 55 and 65, with an effect of -€10,621 compared to individuals under 25. Being in the prime working age (25-54) is known in the literature as being an important determinant of the NFP of an individual (OECD, 2021; Suari-Andreu and Van Vliet, 2023).

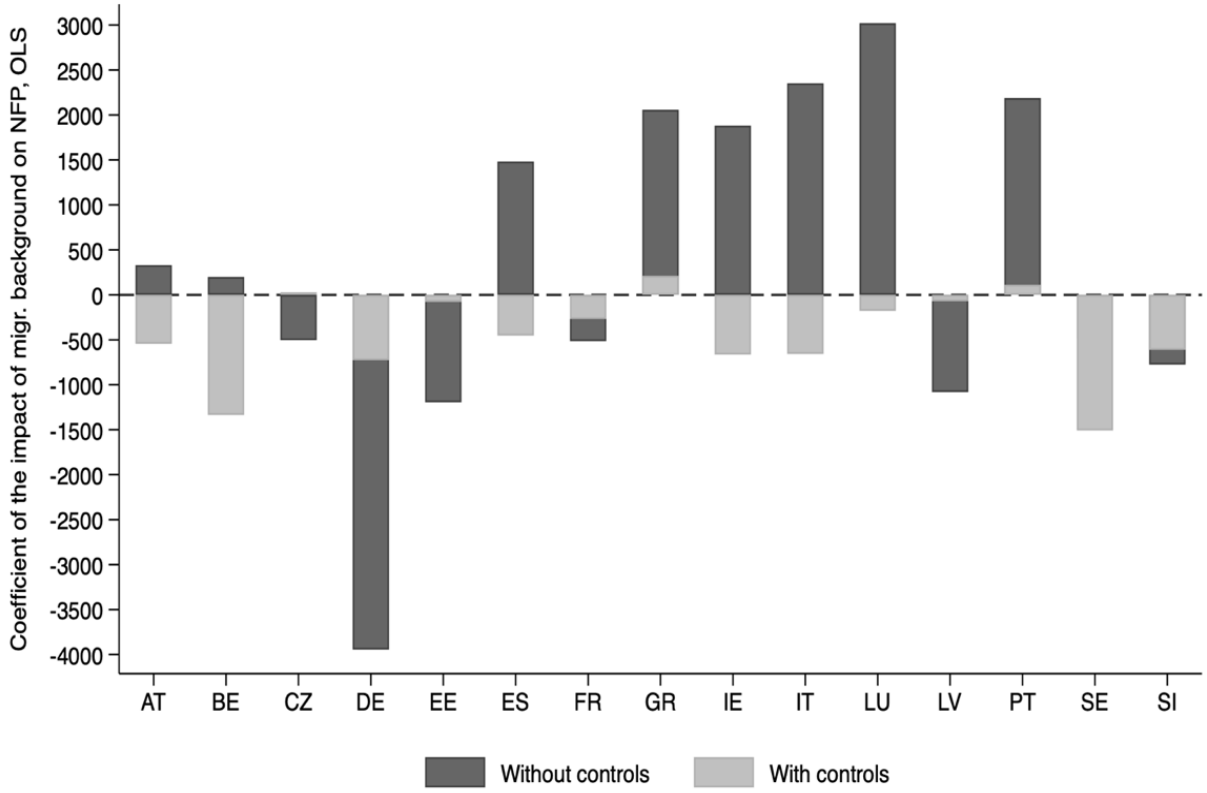
Regarding gender, females appear to have a more positive NFP of €185 compared to males. Being married is also associated with a more positive NFP of €393 compared to single individuals, while being divorced, separated, or widowed is associated with a more negative NFP. While the presence of an additional child in the household decreases the NFP by €362, a larger household size (i.e., also including spouses and other relatives) increases it by €46.8. Regarding education, individuals with higher education have a more positive NFP of €980 compared to those with just primary education. Finally, as expected, the NFP progressively declines with the deterioration of health. Individuals self-reporting 'very bad' health present a lower NFP of -€2,343 compared to those self-reporting 'very good' health.[14]

It is important to note that these background characteristics likely influence an individual's labour market position, which in turn affects their NFP. For instance, younger and more educated individuals typically have higher employment probabilities, leading to higher earnings and consequently a more positive NFP. Conversely, older individuals or those with poorer health may face lower employment probabilities, reducing their earnings and increasing their reliance on welfare benefits, resulting in a more negative NFP (Boeri, 2010; Brell et al., 2020; Fiorio et al., 2023; OECD, 2021; Rosso and Gaeta, 2019).

Figure 4: Country-specific impact of a general migration background on the NFP, OLS (2007-2018).

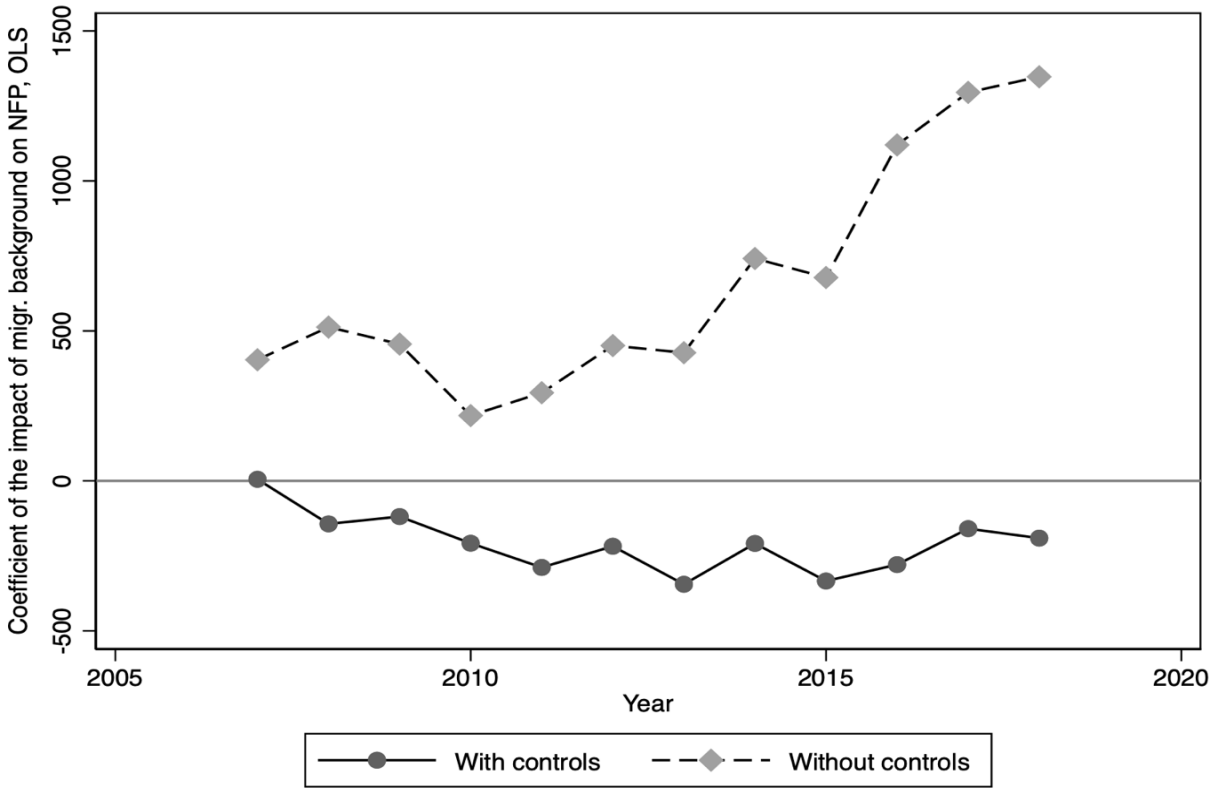
[13] OLS baseline results have been estimated also for every country and year in the sample. For reasons of conciseness, not all countries and years are discussed in the main text. They are available upon request.

[14] As an additional specification (not reported), the baseline results have been estimated also by including all background variables except for country, year, and country-and-year effects (the opposite of what we do in Column 2 of Table 2). The estimates from this additional specification do not present major differences from the ones in Column 3 of Table 2. This can be interpreted as a further indication that individual background characteristics play a bigger role than country and year effects in explaining the NFP of migrants.



As pictured in Figure 4 above, these findings vary by country. When excluding controls, having a migration background shows a significant positive impact on the individual NFP in Austria, Belgium, Greece, Ireland, Italy, Luxembourg, Portugal, and Spain. It is noteworthy that, as found in studies on the fiscal impact of immigration in various European welfare state regimes, Southern European countries appear as those where having a migration background has the most positive impact on the individual NFP (Boffi et al., 2024; Nyman and Ahlskog, 2018; Österman et al., 2023). When including controls, the effect turns negative everywhere, except for Greece and Portugal. In addition to the aforementioned crucial role of background characteristics in explaining the more positive NFP of migrants, this also suggests that our findings are considerably influenced by the country-specific composition of the migrant population, as visible in Figure 2, and by differences in tax and benefit systems across countries, as recently shown by Boffi et al. (2024) and Österman et al. (2023).

Figure 5: Year-specific impact of a general migration background on the NFP, across countries (OLS).



The impact of having a migration background on the individual NFP evolves through the years as well. Figure 5 above shows that across countries, when excluding controls, the impact of migration background on the NFP is more positive in more recent years, with a marked increase from 2016 onwards. This is in line with recent descriptive evidence pointing at a widening fiscal gap between migrants and natives (Boffi et al., 2024). Instead, when including controls, the effect turns negative and progressively more so from 2007 until 2015 (after 2015, it becomes slightly less negative). Among all the controls included, this effect is largely driven by age, which seems to explain a large part of the more positive NFP of migrants. Also, the widening gap between migrants and natives is driven by the increasing average age of natives, while the age of migrants remains rather constant. As visible in Figure 3, the average age of natives in the sample is 48 in 2007 and gradually increases to 53 by 2018.

To scrutinize the effects of different migration backgrounds, Tables 3 and 4 replicate the baseline analysis for intra-EU and extra-EU migrants separately. That is, for only the eleven countries that allow making such distinction. Table 3 shows that having an intra-EU migration background leads to a more positive NFP regardless of the specification considered. The estimate is €1,590 when including just year and country effects and their interactions, and €329.8 when also including personal characteristics, all significant at 1%. The estimates of the effects of the background variables show signs, effects sizes, and significance levels similar to the ones in Table 2. Figure 6 shows that, when excluding controls, Czechia, France, and Sweden are the only countries where the impact of an intra-EU migration background on the NFP is negative. Instead, when including controls, the number of such countries

increases to eight. We can interpret this as an additional sign that background characteristics and compositional effects are fundamental for the more positive NFP of migrants in most countries.

Furthermore, Figure 8 reveals how, when excluding controls, the value for the estimated impact of an intra-EU migration background on the NFP greatly fluctuates in the years considered. When including controls instead, it exhibits a rapid deterioration from 2007 to 2013, even though it always remains positive, and then shows a partial recovery. There are multiple possible explanations behind these fluctuations. First, time effects may play a role as the impact of having an intra-EU migration background declines during the global financial crisis of 2008-2009 and remains at low levels during the European sovereign debt crisis of 2011-2012. Second, intra-EU migration flows changed significantly in the years considered. Increased mobility, particularly from Eastern to Western Europe, and to a lesser extent from Southern to Northern Europe, the global financial crisis, and Brexit significantly influenced migration patterns. Finally, more specifically, after the entry of their countries in the EU, migrants from Central and Eastern Europe often had to wait for a transitional period of up to seven years before gaining full access to the welfare benefits in older member states. This may explain why they appear as net fiscal contributions to a higher degree in the years before enjoying full access to welfare benefits. For an extensive discussion of the time trends of contributions, benefits, and the NFP of migrants and natives in Europe, see Boffi et al. (2024).

Extra-EU migrants present several differences compared to intra-EU migrants regarding their NFP and the factors influencing it. Column 2 of Table 4 shows that, when including only year and country effects and their interactions, the impact of having an extra-EU migration background on the individual NFP is similar to that of having an intra-EU one. However, when background characteristics are included (Column 3 of Table 4), the estimate of the effect becomes strongly negative, -€992.3, significant at 1%. The changes in the sign and the estimated effect size suggest that background characteristics are crucial in determining the positive NFP of extra-EU migrants. We can also derive that there are unobserved factors, possibly discrimination, leading to their more negative NFP. Regarding the background characteristics in the last specification, most of them appear with similar effect sizes and statistical significance as they do for intra-EU migrants. Only the impact of having higher education shows a lower estimated effect size compared to the same variable in the intra-EU migrant specification, €810.2 versus €980.7, both significant at 1%.

As pictured in Figure 7, including controls makes the effect of having an extra-EU migration background on the average individual NFP more negative in all countries in the sample. Czechia, Greece, and Portugal are the only three countries where the effect remains positive, though to a lesser degree, after including controls. Finally, Figure 9 illustrates how, when excluding controls, the effect of having an extra-EU migration background on the NFP is continuously increasing for all the years from 2011 onwards, across countries. Once included, the estimated effect becomes negative for all years and remains rather constant over time, suggesting that personal characteristics of extra-EU migrants,

and in particular their younger age, are able to explain their more positive net fiscal position (compared to natives) regardless of the years considered.

To summarize, even though Table 1 shows that both migrants and natives have an average negative NFP, we consistently find that the NFP of migrants is more positive (less negative) than that of natives. However, Tables 2 to 4 show strong compositional effects in terms of the background characteristics that we observe. These explain most of the positive effect of having an intra-EU migration background, and fully explain the positive effect of having an extra-EU migration background. In the latter case, once we control for background characteristics we are left with a negative effect, indicating the presence of unobserved variables that are driving this difference. Importantly, Tables 2 to 4 show sizeable effects of variables such as age, gender, civil status, family structure, education, and health on the NFP. Given the relevant differences between migrants and natives in terms of these variables (shown in Table 1 and Figures 2 and 3), they are likely to be important drivers of the aforementioned composition effects. To further investigate their contributions, we delve into the decomposition analysis in the next section.

5.2 Oaxaca-Blinder Decomposition

To have a precise idea of which background characteristics contribute to the more positive NFP of migrants compared to natives, Tables 5,6, and 7 show the results of the Oaxaca-Blinder decomposition of the NFP gap between the two groups, across countries and years. First, for the general group of migrants, and then for intra-EU and extra-EU migrants separately.[15] Column 1 of Table 5 shows that the raw difference between the NFP of migrants and natives equals €683, consistently with the result reported in Column 1 of Table 2.

Table 5: Oaxaca-Blinder decomposition for the general pool of migrants.

VARIABLES	(1) Overall	(2) Explained	(3) Unexplained
Age		857.0***	505.2***
		(10.66)	(1.413)
Female		4.817***	-412.8***
		(0.157)	(0.522)
Civil status		25.29***	-198.8***
		(0.819)	(0.413)
N. children at home		-89.30***	-332.4***
		(1.015)	(1.146)
Household size		9.144***	171.1***
		(0.203)	(0.253)

[15] The Oaxaca-Blinder decomposition has been estimated also for every country and year in the sample. For concision, the specific findings for every year and country are not discussed in the main text. They are available upon request.

Health		8.247***	-406.0***
		(1.637)	(0.554)
Education		64.49***	2,056***
		(2.007)	(1.881)
Country		68.53***	1,147***
		(4.032)	(3.442)
Year		-3.556*	-831.3***
		(1.880)	(3.461)
Country × Year		-53.28***	436.2***
		(2.184)	(3.432)
Migrant	-936.1***		
	(10.95)		
Native	-1,620***		
	(4.577)		
Difference	683.6***		
	(11.58)		
Explained	891.4***		
	(11.77)		
Unexplained	-207.8***		
	(3.621)		
Constant			-2,342
			(0)
Observations	2,785,244	2,785,244	2,785,244

Notes: Robust standard errors clustered at the household level in parentheses. Country effects include Austria, Belgium, Czechia, Estonia, France, Germany, Greece, Ireland, Italy, Latvia, Luxembourg, Portugal, Slovenia, Spain, and Sweden. Year effects include all the years from 2007 to 2018. *significant at the 10% level, **significant at the 5% level, ***significant at the 1% level.

The explained part of this difference, i.e., the part explained by differences in endowments of background characteristics, adds up to €891.4, significant at 1% (Columns 1 and 2 of Table 5). Age, civil status, education, year, and country of residence positively contribute to the explained part of the difference, all significant at 1%. More specifically, age plays the main role in explaining the more positive NFP of migrants compared to natives, with a positive contribution of €857. Country of residence and education are the second and third variables with the highest positive contributions to the observed fiscal gap. This finding is consistent not only with previous findings in the literature, as individuals tend to migrate in their most productive years (Huber and Oberdabernig, 2016; OECD, 2021; Suari-Andreu and Van Vliet, 2023), but also with the summary statistics discussed in Section 3; the migrants in our sample are younger and more educated than natives in most of the countries and the years that we study (Figures 2 and 3). The number of children at home and country and year effects are the only background variables that negatively contribute to the explained part of the difference between the NFP of migrants and natives, aligning with findings from Boeri (2010) and Jakubiak (2020).

Regarding the unexplained part, it is negative and equals -€207.8 (Columns 1 and 3 of Table 5).[16] The unexplained part of the difference is of hard interpretation because it captures the differences in the coefficients associated to the observed background characteristics of migrants and natives. In addition, it may also capture the effect of differences in any relevant variable that we do not observe. These could be for instance differences in language skills, social capital, and/or discrimination. Among the background characteristics that we do observe, age, household size, education, country effects, and country-and-year effects positively contribute to the unexplained part of the difference between the NFP of migrants and natives (thus, improving the NFP of migrants). The returns to education and country effects are particularly large, €2,056 and €1,147 respectively, significant at 1%. On the contrary, being a female, civil status, number of children at home, and year effects show large negative contributions, all significant at 1%.

Focusing on the eleven countries that allow to separate intra-EU and extra-EU migrants, Column 1 of Table 6 shows that the difference between the NFP of intra-EU migrants and natives equals €1,638, significant at 1%. Contrary to the findings of the decomposition for the general pool of migrants (Table 5), both the explained and the unexplained parts of the difference between the NFP of intra-EU migrants and natives report positive values, €1,308 and €329.8 respectively, significant at 1%. All background characteristics are significant at 1%. Regarding the explained part, age and education are the ones making the largest positive contributions, €1,397 and €174.7 respectively. Country effects report instead the largest negative contribution, -€228.7. The negative sign does not tell us much about the cause of such country effects, but it indicates that there are large and significant. They could possibly include two complementary mechanisms. First, different EU countries might attract different types of intra-EU migrants; for example, some countries might attract lower-skilled or lower-wage workers, impacting the overall NFP negatively. Second, there may be strong variation in the tax and benefits systems across EU countries.

Regarding the unexplained part, education and country effects show very large positive contributions, €3,034 and €2,579. Unfortunately, as discussed above, the interpretation of the unexplained part is not straightforward as it involves making hypotheses on the different coefficients associated with the background characteristics of migrants and natives and possible unobservables.

For extra-EU migrants, Column 1 of Table 7 shows that the difference between their NFP and the one of natives equals €1,358. Unlike intra-EU migrants, while the explained part of this difference is strongly positive and equals €2,350, the unexplained part is negative and equals -€992.3, significant at 1%. As shown in Column 2, age appears to matter even more for the explained part of the difference between the NFP of extra-EU migrants and natives, compared to what find for intra-EU migrants (Table

[16] As explained in Section 4, Equation 6 divides the unexplained part of the difference into two components. The first captures the impact of differences in the coefficients associated with observable characteristics for migrants compared to the pooled group, while the second does the same but for natives. For simplicity, in Tables 5, 6, and 7, the two components of the unexplained part are reported together and are not separately displayed.

6); its positive contribution tops €2,281, significant at 1%. This may originate from the fact that extra-EU migrants are generally younger than intra-EU migrants and natives (Eurostat, 2023a). In our sample, considering only the eleven countries that allow to distinguish between intra-EU and extra-EU migrants, 48% of extra-EU migrants are under 35, compared to 42% of intra-EU migrants.

The contribution of education to the explained part of the difference equals -€5.6 and is statistically insignificant. In other words, despite the summary statistics show that extra-EU migrants are on average more educated than natives for most countries and years in the sample (Table 1 and Figures 10 and 11 in the Appendix), education does not seem to increase their NFP. This interesting finding is in line with previous evidence demonstrating that extra-EU educational degrees, qualifications, and training have little positive impact on the economic integration of migrants in Europe (Bevelander and Pendakur, 2014; OECD and European Commission, 2023; Rosso and Gaeta, 2019). Similarly, the contribution of country effects to the NFP of extra-EU migrants is also very small in effect size (-€8.3) and statistically insignificant, suggesting that extra-EU migrants are a rather homogenous group of migrants across the countries in the sample.

Regarding the unexplained part of the difference (Column 3), most variables appear with the same sign and significance level as for intra-EU migrants. One notable exception is household size, which for intra-EU migrants has a large negative contribution (-€419.1), while for extra-EU migrants it holds a large positive contribution (€752.4). Given the nature of the unexplained part of the difference, it is impossible to provide a univocal interpretation of this asymmetry in the effect of household size for the two migrant groups. For instance, intra-EU migrants might have easier access to family benefits due to EU regulations compared to extra-EU migrants, which can result in higher benefit claims per household, particularly in larger households, leading to a negative fiscal impact.

6. Conclusion

In this study, we examine the differences between the NFP of migrants and natives in 15 EU countries from 2007 to 2018. To do so, we use repeated cross-sectional individual data on income and welfare benefits from the EU-SILC and combine these with information on personal income taxes and social security contributions from the OECD. We employ an Oaxaca-Blinder decomposition to dissect the factors which drive the differences between the NFP of intra-EU migrants, extra-EU migrants and natives. Our results provide a contribution to the understanding of the specific factors determining the different NFP of migrants and natives in Europe.

Overall, migrants tend to have a relatively more positive average individual NFP compared to natives, with the effect being dependent on the migration background considered and the personal characteristics included in the specification. When excluding controls, migrants exhibit a more positive NFP by €683.6. This is consistent with recent evidence indicating that migrants often make net fiscal

contributions to the host countries (Boffi et al., 2024; Christl et al., 2022; Fiorio et al., 2023). However, when controlling for country and year effects and personal characteristics, the effect becomes negative (-€207.8). Separating between intra-EU and extra-EU migrants, we find that having an intra-EU migration background has always a positive and statistically significant effect on the average individual NFP (€339.8, when including controls). Instead, having an extra-EU migration background has a negative and statistically significant effect (-€992.3, when including controls). The different effects for intra-EU and extra-EU migrants are a common finding in various single-country studies in the literature. They reflect not only the importance of investigating personal characteristics and the welfare state typology of the host country, but also that the countries and the years of selection matter as well (Bogdanov et al., 2014; Chojnicki et al., 2018; Dustman and Frattini, 2014; Furlanetto and Robstad, 2019; Hansen et al., 2017; Izquierdo et al., 2010; Österman et al., 2023; Ruist, 2014).

For this reason, we apply an Oaxaca-Blinder decomposition to dissect the differences between the NFP of migrants and natives into the factors contributing to its explained and an unexplained parts. The findings reveal that age, education, and country effects are the largest contributors to the difference between the NFP of migrants and natives. Among these, age is identified as the biggest contributor to the explained part of the difference. This is in line with previous evidence highlighting age as a key determinant for migrants' welfare receipt (Huber and Oberdabernig, 2016; Jakubiak, 2020; OECD, 2021; Suari-Andreu and Van Vliet, 2023). Education plays an important role as well, but only for intra-EU migrants (€174.5). The contribution of education to the explained part of the difference between the NFP of extra-EU migrants and natives is close to zero and statistically insignificant. Other personal characteristics such as gender, health, civil status, household size, and the number of children at home contribute to the explained and unexplained parts, with varying effect sizes. Overall, the personal characteristics of intra-EU migrants show more positive contributions to both the explained and unexplained parts of the difference. In contrast, extra-EU migrants exhibit a blurrier picture, with no common pattern among their personal characteristics.

The findings suggest that disentangling the specific variables influencing the relationship between immigration, welfare integration, and personal characteristics is of paramount importance for governments and researchers. For example, European policymakers should consider that, over a long period of time and across a large number of countries, migrants are (mostly) young individuals who do not represent a fiscal burden to the host country, especially if coming from another EU member state. Additionally, large country-effects suggest that certain mechanisms may be at work. One mechanism could be that different countries attract different types of migrants, which calls for more equitable and clearer attraction and retention policies. A second mechanism could be that there are significant differences between the tax and benefits systems of EU countries, which calls for a careful scrutiny of the imbalances between different fiscal regimes.

Another important result from a policy perspective is the divergence between the contribution of education to the NFP of intra-EU and extra-EU migrants. Education positively contributes to the NFP

of intra-EU migrants, while it is nearly irrelevant for extra-EU migrants. Better coordination between European and extra-European educational institutions could potentially reduce inefficiency in the allocation of human capital. At the macro level, the European labour market and the welfare states of the EU member states could benefit from this coordination. At the micro level, migrants would be better integrated into society and suffer less from skill mismatches between their jobs and their previous study and work experience.

A promising avenue for future research is to employ the increasing amount of longitudinal data becoming available to study how migrants with different personal characteristics integrate at different speeds in different European welfare state regimes. In conclusion, by analysing the personal characteristics of migrants and their fiscal differences from natives over time, it would be possible to develop effective integration strategies to address the challenges and opportunities that various population groups present to the welfare systems of the host countries and to the EU as a whole.

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Figures and tables

Figure 2: Country-specific summary statistics for the general pool of migrants (2007-2018).

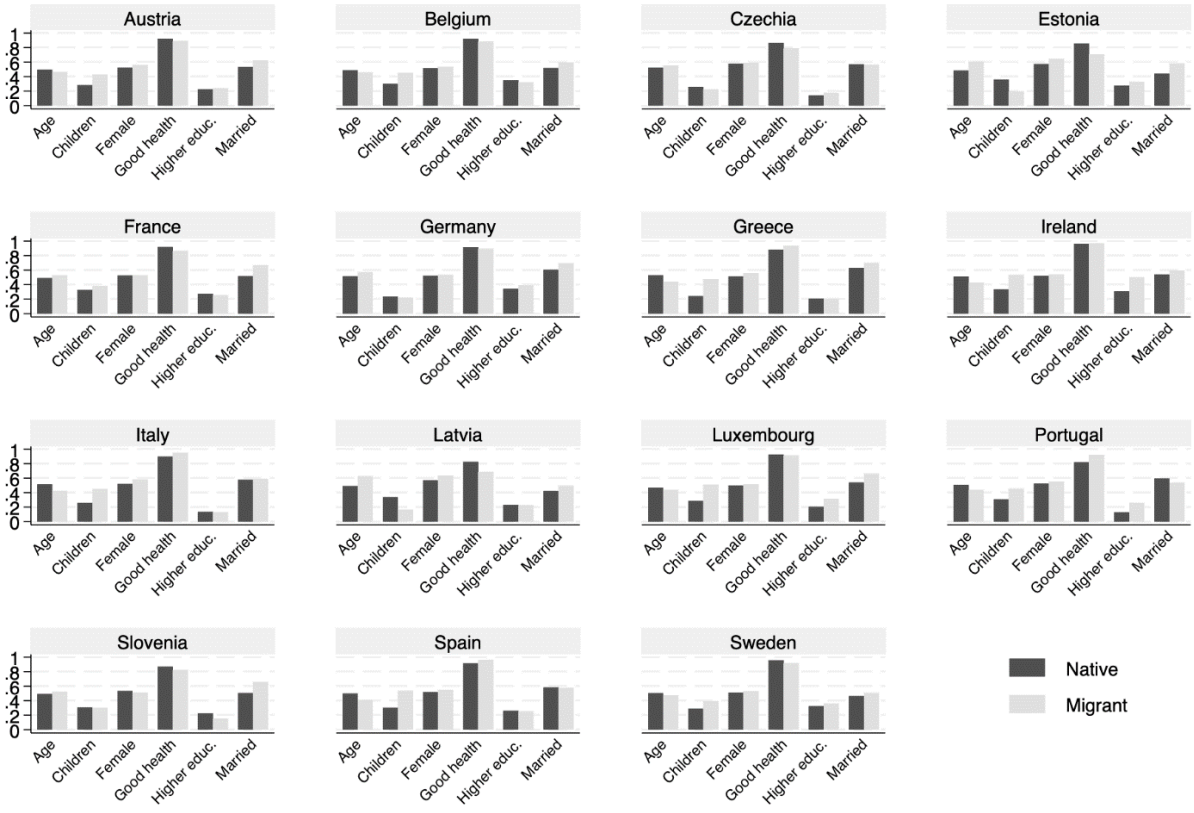

Figure 3: Year-specific summary statistics for the general pool of migrants, across countries.

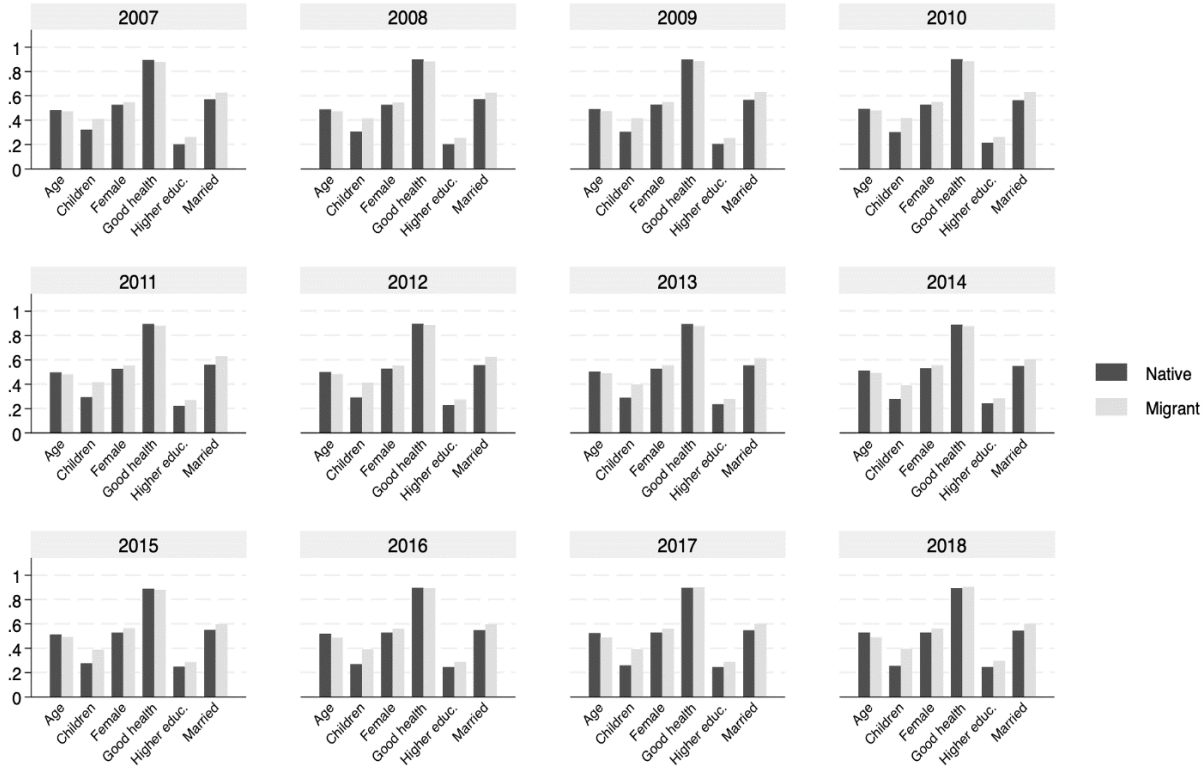

Figure 6: Country-specific impact of an intra-EU migration background on the NFP, OLS (2007-2018).

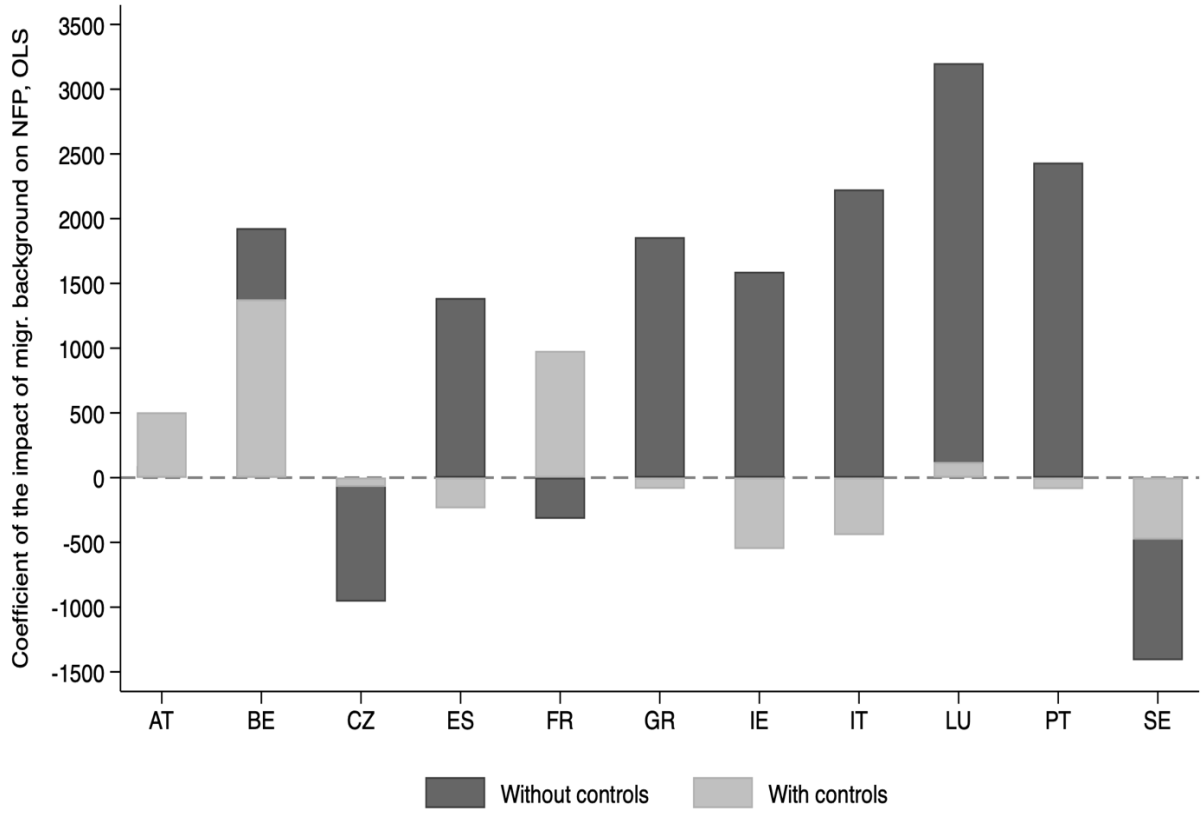

Figure 7: Country-specific impact of an extra-EU migration background on the NFP, (2007-2018).

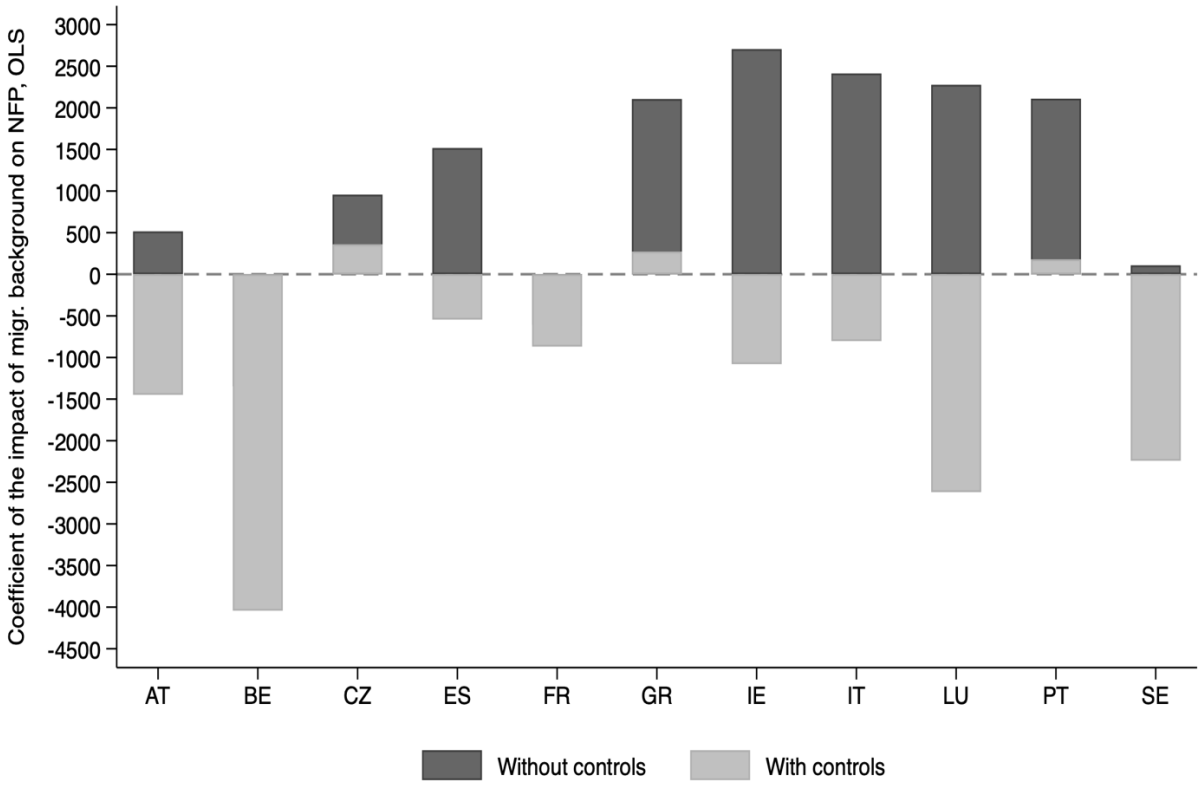

Figure 8: Year-specific impact of an intra-EU migration background on the NFP, across countries.

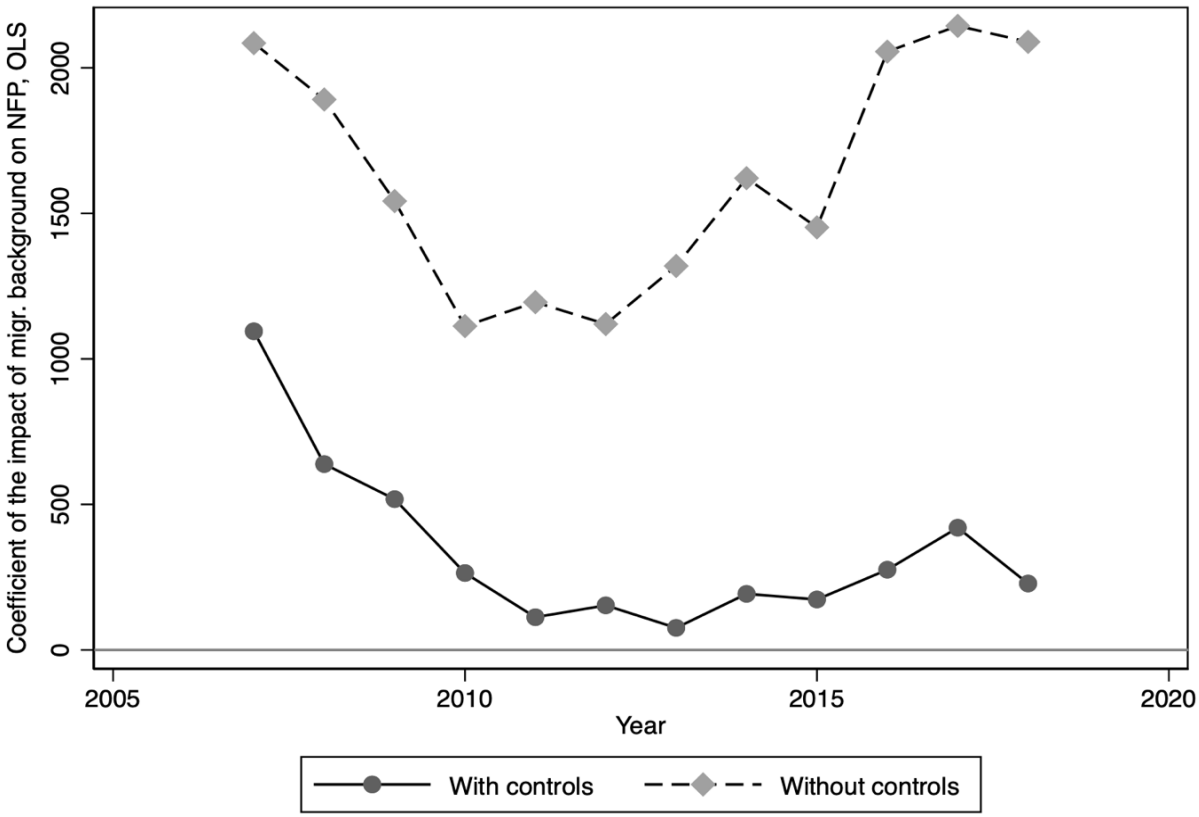

Figure 9: Year-specific impact of an extra-EU migration background on the NFP, across countries.

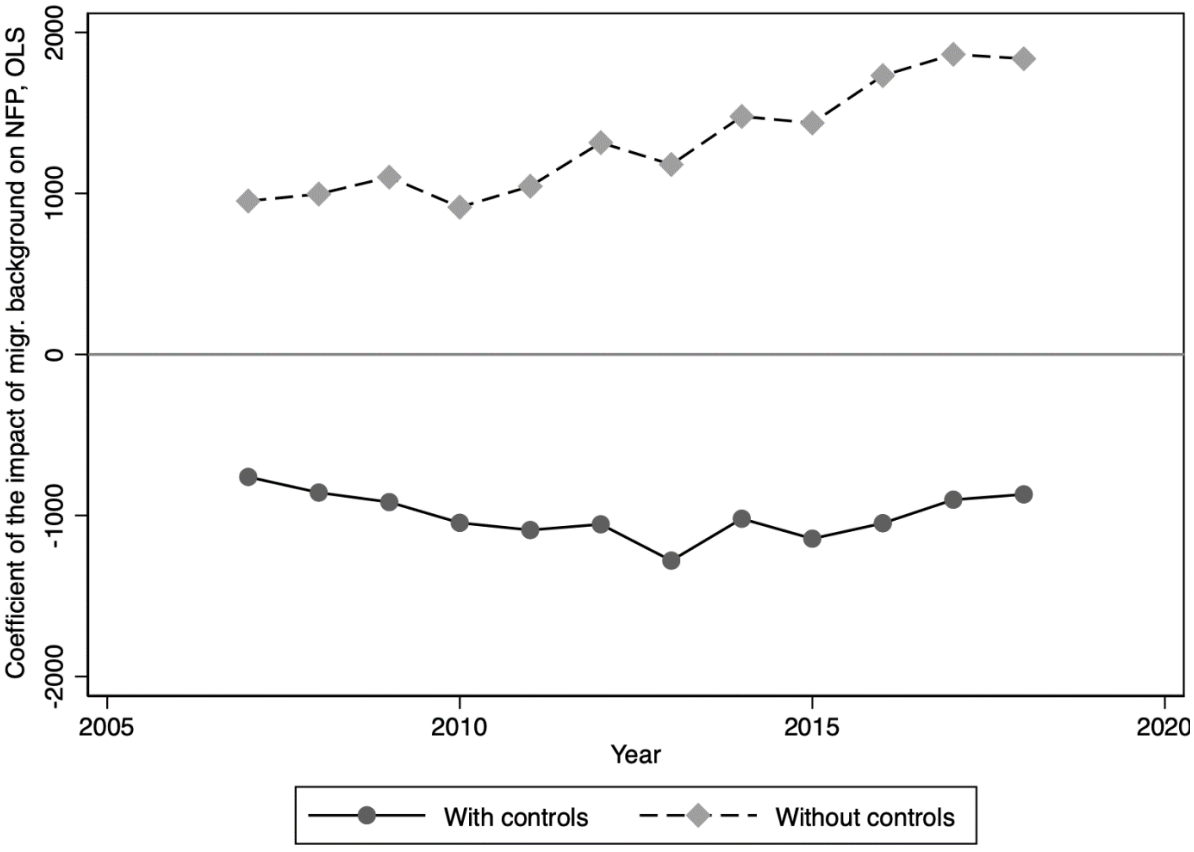

Table 3: Baseline analysis (OLS) for intra-EU migrants.

VARIABLES	(1) NFP	(2) NFP	(3) NFP
Migrant	1,638***	1,590***	329.8***
	(51.65)	(54.70)	(49.28)
Age: 25-35			1,324***
			(19.62)
Age: 35-45			1,719***
			(24.61)
Age: 45-55			-4,116***
			(34.52)
Age: 55-65			-11,119***
			(31.52)
Age: over 65			-1,466***
			(17.03)
Female			163.4***
			(13.73)
Civil status: married			441.5***
			(20.71)
Civil status: separated			-371.3***
			(60.37)
Civil status: widowed			-1,208***
			(31.68)
Civil status: divorced			-294.7***
			(37.39)
N. children in the household			-212.6***
			(12.38)
Household size			27.63***
			(6.797)
Education: secondary			-1,541***
			(17.24)
Education: higher			930.0***
			(30.08)
Health: good			-757.1***
			(19.64)
Health: fair			-1,617***
			(23.78)
Health: bad			-2,021***
			(29.14)
Health: very bad			-2,342***
			(42.88)
Country, year, and country-and-year fixed-effects		Yes	Yes
Constant	-1,708***	-2,185***	2,242***
	(8.840)	(125.6)	(102.7)
Observations	2,043,185	2,043,185	2,043,185
R-squared	0.001	0.022	0.293

Notes: Robust standard errors clustered at the household level in parentheses. Country effects include Austria, Belgium, Czechia, France, Greece, Ireland, Italy, Luxembourg, Portugal, Spain, and Sweden. Year effects include all the years from 2007 to 2018. *significant at the 10% level, **significant at the 5% level, ***significant at the 1% level.

Table 4: Baseline analysis (OLS) for extra-EU migrants.

VARIABLES	(1) NFP	(2) NFP	(3) NFP
Migrant	1,358***	1,226***	-992.3***
	(28.53)	(28.71)	(26.08)
Age: 25-35			1,283***
			(18.79)
Age: 35-45			1,612***
			(22.78)
Age: 45-55			-4,068***
			(31.69)
Age: 55-65			-11,047***
			(28.77)
Age: over 65			-1,449***
			(16.30)
Female			187.0***
			(13.07)
Civil status: married			408.0***
			(19.30)
Civil status: separated			-401.4***
			(56.98)
Civil status: widowed			-1,196***
			(30.23)
Civil status: divorced			-278.6***
			(35.79)
N. children in the household			-274.6***
			(11.66)
Household size			57.27***
			(6.496)
Education: secondary			-1,490***
			(16.55)
Education: higher			810.2***
			(28.79)
Health: good			-698.9***
			(18.06)
Health: fair			-1,565***
			(22.14)
Health: bad			-1,974***
			(27.55)
Health: very bad			-2,294***
			(41.47)
Country, year, and country-and-year fixed-effects		Yes	Yes
Constant	-1,708***	-2,062***	2,215***
	(8.840)	(116.5)	(95.80)
Observations	2,057,687	2,057,687	2,057,687
R-squared	0.001	0.022	0.302

Notes: Robust standard errors clustered at the household level in parentheses. Country effects include Austria, Belgium, Czechia, France, Greece, Ireland, Italy, Luxembourg, Portugal, Spain, and Sweden. Year effects include all the years from 2007 to 2018. *significant at the 10% level, **significant at the 5% level, ***significant at the 1% level.

Table 6: Oaxaca-Blinder decomposition for intra-EU migrants.

VARIABLES	(1) Overall	(2) Explained	(3) Unexplained
Age		1,397***	584.6***
		(17.29)	(2.713)
Female		3.676***	-855.0***
		(0.223)	(1.950)
Civil status		43.40***	82.29***
		(1.567)	(0.480)
N. children at home		-50.31***	-289.7***
		(0.888)	(1.634)
Household size		2.405***	-419.1***
		(0.170)	(0.794)
Health		83.47***	-669.8***
		(2.402)	(2.047)
Education		174.7***	3,034***
		(4.065)	(6.946)
Country		-228.7***	2,579***
		(6.606)	(6.253)
Year		-40.32***	-500.1***
		(2.864)	(3.584)
Country × Year		-77.13***	-168.9***
		(2.981)	(5.216)
Migrant	-70.45***		
	(23.92)		
Native	-1,708***		
	(5.395)		
Difference	1,638***		
	(24.36)		
Explained	1,308***		
	(19.89)		
Unexplained	329.8***		
	(9.130)		
Constant			-3,047
			(0)
Observations	2,043,185	2,043,185	2,043,185

Notes: Robust standard errors clustered at the household level in parentheses. Country effects include Austria, Belgium, Czechia, France, Greece, Ireland, Italy, Luxembourg, Portugal, Spain, and Sweden. Year effects include all the years from 2007 to 2018. *significant at the 10% level, **significant at the 5% level, ***significant at the 1% level.

Table 7: Oaxaca-Blinder decomposition for extra-EU migrants.

VARIABLES	(1) Overall	(2) Explained	(3) Unexplained
Age		2,281***	500.2***
		(13.75)	(4.384)
Female		3.593***	-586.0***
		(0.240)	(1.256)
Civil status		77.88***	-99.21***
		(1.321)	(0.378)
N. children at home		-133.8***	-672.6***
		(1.395)	(3.362)
Household size		33.05***	752.4***
		(0.436)	(1.571)
Health		91.77***	-39.87***
		(2.280)	(1.340)
Education		-5.610	1,584***
		(3.619)	(2.484)
Country		-8.348	588.8***
		(6.669)	(4.357)
Year		24.43***	-272.1***
		(2.920)	(4.059)
Country × Year		-13.37***	-331.8***
		(3.626)	(4.948)
Migrant	-350.2***		
	(13.75)		
Native	-1,708***		
	(5.395)		
Difference	1,358***		
	(14.66)		
Explained	2,350***		
	(16.55)		
Unexplained	-992.3***		
	(6.988)		
Constant			-2,416
			(0)
Observations	2,057,687	2,057,687	2,057,687

Notes: Robust standard errors clustered at the household level in parentheses. Country effects include Austria, Belgium, Czechia, France, Greece, Ireland, Italy, Luxembourg, Portugal, Spain, and Sweden. Year effects include all the years from 2007 to 2018. *significant at the 10% level, **significant at the 5% level, ***significant at the 1% level.

Appendix

Figure 10: Country-specific summary statistics across migration backgrounds (2007-2018).

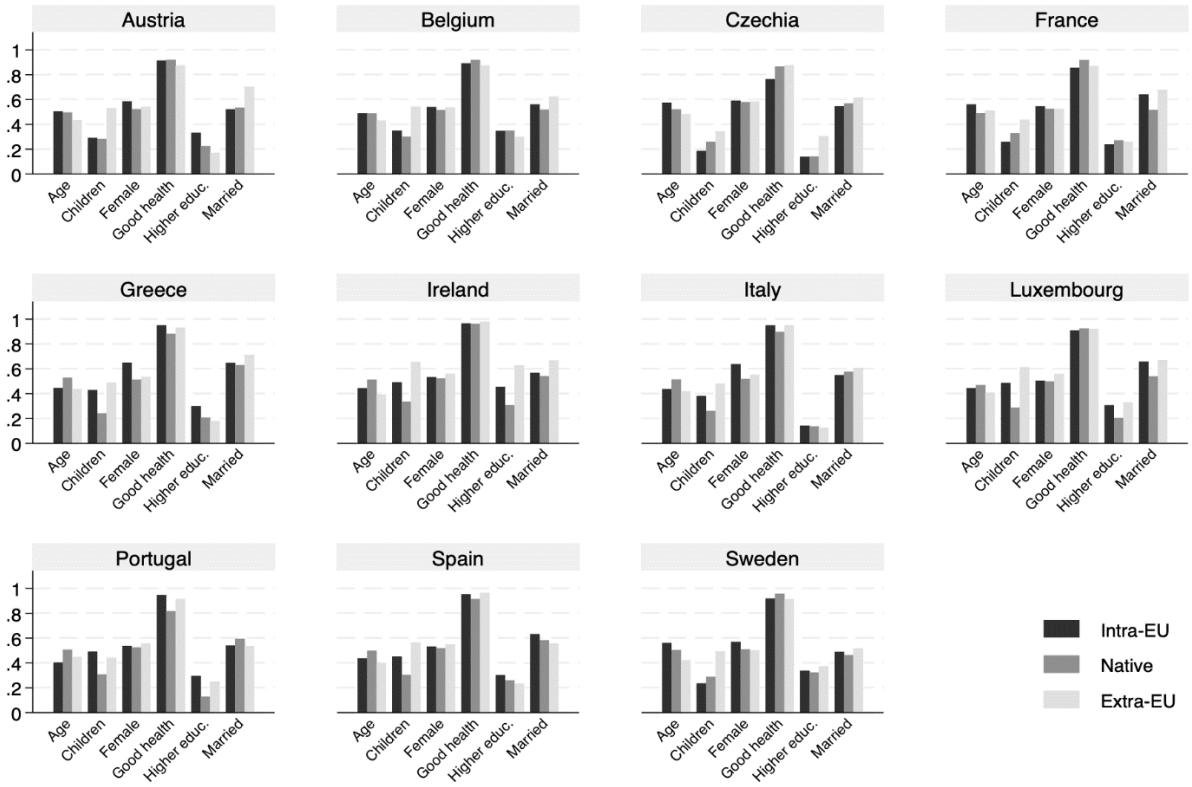

Figure 11: Year-specific summary statistics across migration backgrounds, across countries.