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DETERMINANTS OF GLOBAL MIGRATION: THE IMPACT OF ESG INVESTMENTS AND FOREIGN DIRECT INVESTMENT

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ABSTRACT. In response to global economic, social, and environmental problems, ESG investment principles have changed the approach to directing and structuring foreign direct investment. Additionally, they are becoming an essential factor in attracting migrants. This article aims to determine the impact of foreign direct investment on global migration trends and their peculiarities with the introduction of ESG investment principles. For this purpose, global foreign direct investment flows, global ESG investment flows, and global migration trends have been analyzed from 1995 to 2022. Pairwise correlation calculation was used as the primary analysis method through R-Studio software with integrated R programming language. The results indicated a 35% correlation between the volume of global ESG investment flows and the number of international migrants (as a percentage of the total population, which varies between 3.2% and 3.6%) for 2010-2022. Subsequently, regression analysis was conducted to explore the relationship between critical variables: investment flows and the level of migration in four European countries (France, Poland, the Czech Republic, and Germany). It was determined that investment inflows led to new jobs, accelerated economic growth, and improved business climate, thus encouraging reduced outflow and increased inflow of migrants. Investments based on ESG principles also reduce emigration as they enhance the quality of life in the host country, provide better environmental protection, and promote more transparent corporate management. However, it should be noted that investments have no apparent impact on migration caused by external factors such as wars or political conflicts, so such analysis should not include periods of global economic and political unrest.

Keywords: international migration, foreign direct investment, ESG investment principles, correlation analysis, regression analysis, ESG investing

Introduction

In the context of uncertainty arising in the global and national markets due to economic crises, military conflicts, climate change, and intensified migration processes, the issue of identifying the interdependence of investment, migration, and the transition to ESG investment principles is becoming more relevant. Investments significantly impact the economy, driving innovation, increasing production volumes, enhancing the quality of goods and services, and improving the standard of living. Investments also boost a country's competitiveness. Various direct and indirect legal, economic, and political factors influence the amount of investment in the economy. At the same time, the impact of a single factor, even if it is short-term, can significantly diminish the country's appeal to investors and result in a reduced investment.

The amount of attracted investments, particularly ESG investments, depends on various factors such as current economic development, exchange rates, stability of financial and political systems, infrastructure development, and the quantity and quality of the labour force. Investments impact the development and innovativeness of the country's economy. Low rates of investment lead to low innovative development, which in turn contributes to increased unemployment. In conditions of high unemployment caused by a lack of jobs and low wages, the country's population seeks employment outside its borders. Therefore, there is an indirect relationship between the level of investment in the national economy, particularly investments based on ESG criteria, and migration processes.

The article aims to determine the impact of foreign direct investment on global migration trends and their peculiarities due to the introduction of ESG investment principles. The hypothesis is that the FDI net inflows and migration processes are strongly interconnected and influence a country's economic and social development. The transition to ESG investing, which correlates with the Sustainable Development Goals and creates additional benefits for the country's attractiveness for migrants, is impossible without public support from national governments and at the level of directives and incentives from the EU.

The ascendancy of multinational corporations as primary drivers of economic development has engendered an accompanying surge in concerns regarding their ethical, social, and environmental impacts. From deforestation and habitat destruction to exploitative labour practices and human rights violations, the rapacious pursuit of profit often takes a heavy toll on both the environment and indigenous communities. Consequently, the imperative to recalibrate prevailing investment and corporate governance paradigms has assumed heightened urgency.

Against this backdrop, the emergence of Environmental, Social, and Governance (ESG) investing principles represents a seminal departure from conventional approaches to investment management. By integrating environmental, social, and governance criteria into investment decisions, ESG frameworks seek to align financial returns with broader societal imperatives, thereby fostering sustainable development and equitable prosperity. Despite the growing traction of ESG investing within financial markets, the nexus between ESG principles and global migration trends remains conspicuously underexplored, even though both topics are prominent in recent literature.

1. Literature review

Many articles agree that ESG investment has emerged as a predominant focus in contemporary society, reflecting a paradigm shift in financial priorities. This shift is propelled by mounting awareness of the interconnectedness between corporate behaviour, societal well-being, and environmental sustainability. The urgency of addressing pressing global challenges, such as climate change, social inequality, and corporate governance scandals, underscores the criticality of integrating ESG principles into investment strategies. As stakeholders increasingly demand accountability and ethical responsibility from corporations, ESG investment has evolved into a vital mechanism for driving positive change, promoting sustainability, and safeguarding long-term financial stability, as mentioned previously. Its pervasive influence underscores its significance in shaping modern society's and worldwide economies' trajectory (Matos, 2020; Kotsantonis, Pinney & Serafeim, 2016).

The study by Didenko, I., and co-authors employed a bibliometric approach to analyze research at the intersection of migration, environment, and safety. They utilized the Scopus database to examine publications from 1965 to 2019. Authors underscore the burgeoning interest and the increasing importance of studying the interrelated issues of migration, environment, and security. With a notable rise in scholarly attention, particularly from researchers in the United States and the United Kingdom, it is evident that this field of inquiry has become a focal point in contemporary discourse. The same authors have highlighted the link between environmental changes and population movement, which can be indirectly tied to safety concerns. Their other study emphasizes that internal displacement is primarily driven by climatic factors like floods and storms, implying that individuals are likely migrating to escape the physical dangers and potential loss of life associated with these environmental hazards. It suggests that environmental factors, while not always explicitly framed as safety concerns, can significantly influence migration patterns due to their security risks (Didenko et al., 2020; Didenko et al., 2021).

In examining the Ukrainian migration phenomenon, Nikolaiets et al. (2023) underscore the pivotal role of safety and financial assistance as primary drivers behind the exodus of Ukrainians to Western Europe amidst the Russian-Ukrainian conflict. The protracted nature of the war and its disruptive impact on daily life compelled many to seek refuge abroad, where the relative stability and security offered respite from the turmoil gripping their homeland. Moreover, the availability of financial aid and social support networks in EU countries provided crucial lifelines for those displaced by the conflict, incentivizing their decision to embark on the arduous journey of migration, which if Ukraine could implement comparable policies in terms of financial and housing help, could seriously drive re-emigration back to Ukraine.

Another two studies (Zatonatska et al., 2022, 2023) further broaden these findings but from an alternative side, underscoring the profound impact of migration on government expenditures and societal structures in Ukraine. While one study focuses on healthcare expenditure forecasting amidst the backdrop of mass migration resulting from the Russian-Ukrainian conflict, the other examines the ramifications of migration on government spending in education. Despite their differing focal points, both studies converge on several vital conclusions. Firstly, they highlight the substantial influence of migration on demographic shifts, particularly in altering the population's age composition. Secondly, both studies underscore the necessity for proactive governmental responses to address the population's evolving needs, especially in sectors such as healthcare and education, which are profoundly affected by demographic shifts.

Additionally, other articles converge on a common conclusion regarding the primary factors influencing immigration inflows to a country. While one study focuses on the econometric modelling of immigration processes in the United Kingdom (Kravchenko & Zhuk, 2022) and the other (Zatonatska et al., 2023) examines the wave of migration from Ukraine to European countries, both identify job opportunities and living conditions being amongst the primary pull factors for migrants. Despite differences in geographic focus and methodological approaches, both articles underscore the significance of employment prospects and adaptability to living conditions in attracting migrants to a host country. These shared findings highlight the critical role of economic and social factors in shaping migration patterns and emphasize the importance of addressing these factors in formulating effective immigration policies and integration strategies.

The findings above underscore migration's intricate and multifaceted nature, revealing its complexity as a phenomenon shaped by many factors. From the econometric modelling of immigration processes to the analysis of migration waves triggered by conflict in Ukraine to bibliometric analysis, these articles (Dobson & Sennikova, 2007; Oliinyk et al., 2021; Becic et al., 2019) illuminate the complexity of migration dynamics. They reveal that migration stems from many interrelated factors, from economic opportunities and living conditions to geopolitical instability, environmental hazards, and socio-political unrest. Notably, many also emphasize the significant impact of governmental policies on migration flows. Migration can affect governments as they grapple with its social, economic, and political ramifications and simultaneously shape migration patterns through their policies and interventions. This nuanced understanding underscores the importance of comprehensive approaches to migration management that address a wide array of interconnected factors while recognizing the dynamic interplay between governmental actions and migration dynamics.

Governmental policymaking concerning migration must be effective and sustainable, considering social, economic, and environmental dimensions. Environmental, Social, and Governance (ESG) principles ensure that migration policies are socially responsible, economically beneficial, and environmentally sustainable. ESG-informed policymaking promotes inclusive societies, protects migrant rights, and fosters economic resilience through skill-based migration and entrepreneurship support. It addresses environmental impacts by mitigating climate-related migration drivers and promoting sustainable infrastructure development. By integrating ESG considerations into policymaking, governments can create holistic approaches that balance societal needs, economic goals, and environmental preservation, fostering long-term sustainability in migration management (Li et al., 2021; Widyawati, 2020; Zatonatska et al., 2024).

Authors of one study (Chipalkatti, Le & Rishi, 2021) employed econometric analysis using a sample of 161 countries to investigate the association between Environmental, Social, and Governance factors and Foreign Direct Investment (FDI). Their findings reveal significant insights into how ESG factors can impact FDI inflows and contribute to Sustainable Development Goals (SDGs). The study identifies that while certain traditional economic variables such as domestic investment climate, per capita GDP growth, and trade openness play a role in attracting FDI, ESG factors and outstanding governance also significantly influence investment decisions. Notably, the study suggests that higher levels of governance quality positively affect FDI inflows, indicating that good governance is an attractive feature for investors. Additionally, the analysis highlights the importance of sustainable reporting requirements, which enhance transparency and attract FDI, particularly in commodity-exporting countries. Furthermore, the results suggest that ESG factors, including sustainability reporting, can help countries attract FDI inflows, aiding their progress towards achieving SDGs while fostering economic growth. Therefore, the study underscores the potential of ESG considerations to drive FDI and contribute to long-term sustainable development efforts in countries worldwide.

Another study (Singh & Pandey, 2023) aimed to synthesize existing empirical research on Sustainable Development Goals in India, identifying research gaps and proposing policy frameworks for further action, and came to a similar conclusion. The study provided background information on SDGs, emphasizing the importance of addressing climate change, environmental preservation, health, education, inequality, and poverty based on the comprehensive literature review of 100 academic articles published between 1995 and 2022. It examined India's progress towards sustainable development, aligning SDGs with its development priorities and highlighting the need for multi-stakeholder collaborations. The methodology employed a systematic literature review, outlining procedures such as defining research questions, search strategies, data synthesis, and policy implications drawing. The findings identified knowledge gaps, strengths, weaknesses, and areas for additional research regarding SDGs in India, closely related to ESG. They also emphasized the need for new policies relying on ESG factors to increase the country's prosperity.

The literature about the impact of ESG on migration is very sparse. Authors of one article (Lopushynskyi et al., 2023) delve into the concept of migration attractiveness of regions and its correlation with investment attractiveness and associated influencing factors, focusing on Ukraine as a unique case. Despite experiencing critical deteriorative influences like hybrid wars or active hostilities, Ukraine's regions exhibit distinct migration attractiveness. The article proposes leveraging methodologies to assess investment attractiveness and shape the migration attractiveness of the country's regions. It advocates for a matrix systemic approach, considering factors such as sustainability (ESG) patterns. The article emphasizes the importance of areas appealing to various groups like businesses, investors, tourists, students, and skilled individuals amid increasingly significant global relationships and flows. The article advocates for a comprehensive analytical technique, proposing the creation of a synthetic index that evaluates territorial attractiveness from a multidimensional perspective. This approach offers a novel angle to understanding and enhancing regional migration attractiveness, ultimately contributing to informed policy design and regional development strategies.

In conclusion, while the literature extensively explores the multifaceted impacts of Environmental, Social, and Governance (ESG) investment across various domains of society, there remains a significant shortage of research on its implications for global migration. ESG principles have undeniably demonstrated their capacity to enhance prosperity and foster investment-friendly environments within nations. As the importance of ESG continues to burgeon in today's world, its relevance transcends conventional financial metrics, extending into realms such as safety, social well-being, and economic stability, which, as mentioned, can significantly impact migration. Given the intricate interplay between these spheres and the complex nature of migration, it is imperative to recognize the potential influence of ESG implementation on global migration patterns. By addressing underlying factors such as social inequality, environmental degradation, and economic disparities, ESG investment can indirectly shape migration dynamics, underscoring the need for further interdisciplinary research to elucidate these interconnected relationships and inform holistic policy approaches (Chen, Chen & Zhang, 2022; Friede, Busch & Bassen, 2015).

Increased awareness of ESG issues has sparked a growing demand for ESG-related information, serving as a comprehensive metric to assess business performance from different aspects. It has led to the adoption of mandatory ESG disclosure rules in many countries (Krueger et al., 2021). Accordingly, implementing such regulations aims to enhance transparency regarding companies' ESG activities because those not prioritizing ESG management practices are potentially exposed to reputational risks. Even for companies that adhere to minimal ESG standards, such as compliance with environmental and labour laws, mandatory ESG disclosure creates a more competitive landscape for ESG performance. It has been driven by heightened awareness of ESG issues in the investment community. Managers may be concerned that full disclosure of ESG-related information could adversely affect firm value, potentially deterring existing and potential ESG-conscious investors. Previous research has highlighted positive capital market effects associated with voluntary ESG disclosure (Dhaliwal et al., 2012). Prior research also indicates that financially constrained firms may face higher regulatory costs related to ESG-related policies (Bartram et al., 2022). The overall landscape underscores the evolving significance of ESG considerations and the intricate interplay between disclosure requirements, financial performance, and investor perceptions in the contemporary business environment.

Chen et al. (2018) investigated the influence of mandatory ESG disclosure on social externalities by examining China's 2008 mandate that compelled companies to disclose Corporate Social Responsibility (CSR) information. Their findings revealed that firms required to report on CSR experienced a decrease in profitability, but cities most affected by disclosure also experienced a decrease in pollution.

The susceptibility of firms' supply chain practices to such pressures is noteworthy. Existing research posits that firms' supply chain management has significant ESG implications, particularly environmental and social issues (Quarshie et al., 2016; Yawar & Seuring, 2017). The research by Lu et al. (2023) examines companies' global supply chain strategies after the phase-in of mandatory ESG disclosure across various countries. The authors observed that mandatory ESG disclosure correlates with selecting more new suppliers from countries with weaker ESG-related regulatory activities and opaque corporate ESG-related information environments.

The research by Zhang & Liu (2022), using panel data, examines the influence of foreign direct investment (FDI) and migration on the sustainable development of outward FDI (OFDI), as well as the relationship between OFDI and migration. The authors proved that the influence of migration on OFDI in high- or upper-middle-income countries is not significant. However, migration negatively affects OFDI for lower-middle and low-income countries. Burchardi et al. (2019) investigate the causal effect of ancestry on FDI sent and received by local companies in the USA using a simple reduced-form migrations model. Investment and migration policies are often uncoordinated, leading to contradictory processes: while companies need to recruit labour across borders, migration authorities work tirelessly to limit the immigration of job seekers. However, as transportation, communication, and travel costs have fallen along with reducing trade barriers, it is now more accessible for people to cross borders (Cottier & Sieber-Gasser, 2015). Thus, under the influence of the development of innovation potential and investment processes, migration is increasing, and border crossings are happening faster than ever. So, the analysis of the impact of ESG investment on migration is quite essential and was not investigated in the previous research. Despite significant scientific achievements in the field of ESG, the impact of investments on migration remains unsolved and is an essential scientific problem for the formation of economic and migration policies.

2. Methodological approach

Based on the yearly statistical data from the Refinitiv Lipper and International Organisation for Migration (IOM) from the period 2010 to 2022, we investigate the causality and interdependence between flows of ESG investments (nominal values) and indicators of migration processes in the world (total number of international migrants in nominal values and as a percentage to total population in the world). Data of flows of ESG investments and migration as a percentage to the total population in the world are stationary with 75% probability (considering the results of the Augmented Dickey-Fuller Test p-values are ~0.22 and 0.01, respectively, which is less than 25%). There is complete data for the analyzed period and no missed values. We use pairwise correlation calculation using R-Studio software with integrated R programming language as a primary analysis method.

$$correl\ (x, y) = \frac{\sum(x-\bar{x})(y-\bar{y})}{\sqrt{\sum(x-\bar{x})^2(y-\bar{y})^2}}$$

where $\bar{x},\ \bar{y}$ average value of x and y.

Based on the methods of analysis and synthesis, as well as historical and logical, we describe the character and direction of the influence of the ESG investment on migration in the country and, vice versa, the influence of migration on ESG investment. The main scientific hypothesis of the investigation is that there is a strong connection between migration and ESG, so it is relevant to examine these processes.

Currently, EU legislation on implementing ESG principles in companies' activities is one of the most developed, consisting of several levels - international and national. The primary EU-wide documents establish general principles and norms binding on all member states. Among them are the following:

The Nonfinancial Reporting Directive (NFRD). EU companies must disclose ESG data related to business operations; more detailed ESG disclosures are being considered.

Second Shareholder Rights Directive (SRD II). The buy-side is to integrate ESG and the long-term sustainable interests of clients into investment strategies and engagement activities.

The Sustainable Finance Disclosure Regulation (SFDR) requires investment firms to conduct ESG risk analyses and publish ESG information at the product and firm levels.

Climate Benefit Regulation (CBR). New ESG disclosures for all FX dashboards and rate indices. Creation of two new climate benchmarks.

Corporate Sustainability Reporting Directive (CSRD). Requires large companies operating in the EU to disclose information on compliance with ESG standards.

In addition, at the national level, countries can adopt other regulations that do not contradict EU rules.

To further investigate the relationship between the migration trends and ESG investment, we also performed the regression analysis using linear regression for the proxy variables for the ESG investments, including the number of migrants, the volume of investments (current and lagged level), the level of internet sales, the share of e-commerce enterprises from 1995 to 2022, and 2 dummy variables describing the boost of migration as a result of full-scale Russian invasion in 2022 and migration crisis in 2015. Our choice of proxy variables stems from the fact that the ESG investments as a separate category are new, so there is no comprehensive, comparable database for a more in-depth analysis. Considering that institutional investors make most ESG investments in the form of foreign direct investments (FDI), we introduce several proxy variables to the analysis. The FDI represents the movement of capital across borders, and the level of internet sales represents the level and quality of life in the country, as we assume that ESG investments positively impact the social development of the host country. We used the data from *the OECD Database (https://stats.oecd.org/Index.aspx?DataSetCode=MIG), the World Bank Database (https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD), Eurostat Database.* We narrowed our research to the EU countries as the current legislation includes the norms that actively encourage the implementation of the ESG principles to the point that the FDI can be considered an investment based on the ESG principles. We concentrated on the four EU economies among the leaders for the FDI net inflows: Poland, Czechia, Germany, and France. In general, from 2010 to 2021, they accounted for about 1/5 of the total FDI inflows of the EU (Fig. 1).

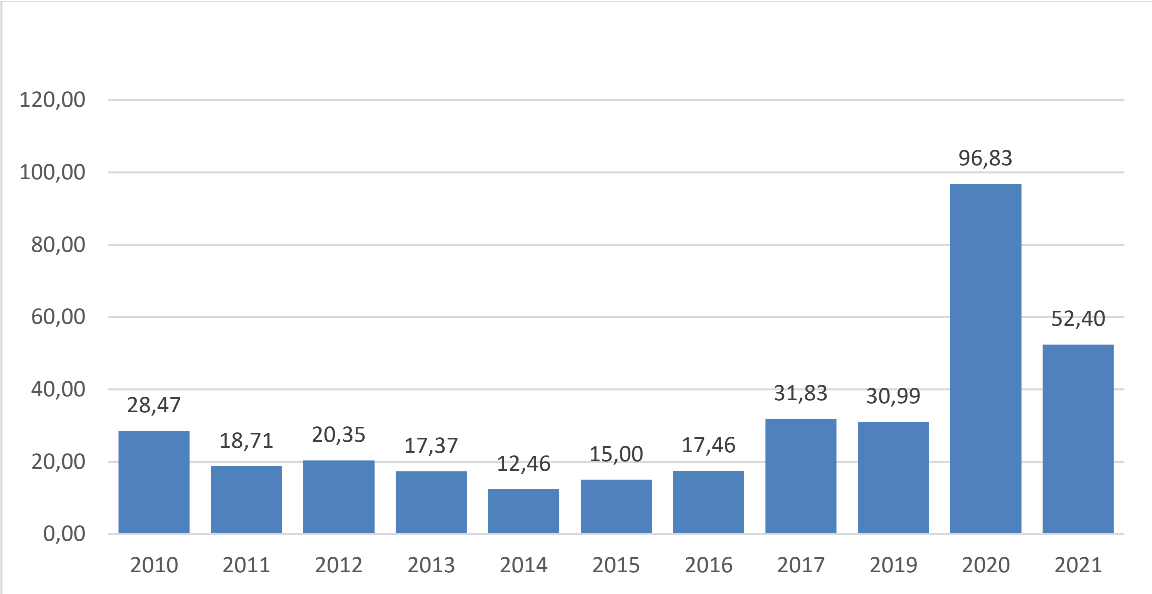

Figure 1. FDI net inflows of Poland, Czechia, Germany, and France as a % of the EU FDI inflows, 2010-2021*.
*We do not analyze 2018 as the net FDI inflows for the EU were negative.
Source: *author's calculation based on the data from the World Bank Database (https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD)*

Those economies accounted for more than half of all the migrants' inflow of the EU (Fig. 2).

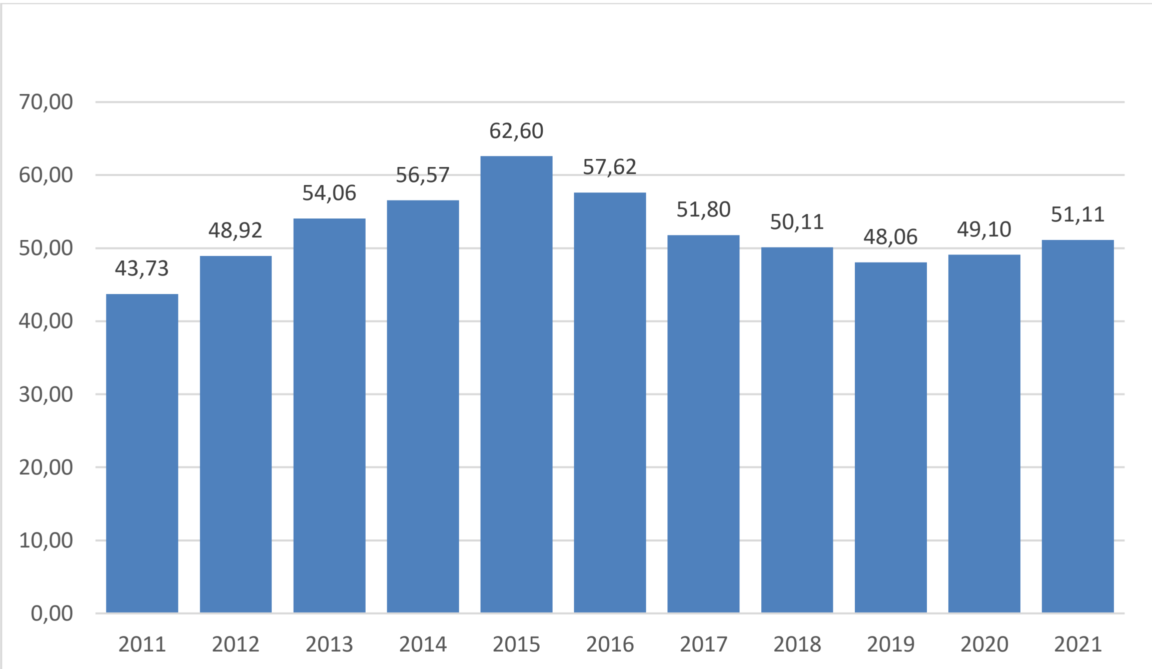

Figure 2 shows migrant inflows from Poland, Czechia, Germany, and France as a percentage of the EU migrant inflows, 2011-2021.
Source: *author's calculation based on the data from the OECD Database (https://stats.oecd.org/Index.aspx?DataSetCode=MIG).*

As a result, our analysis is limited to those four countries of the EU.

3. Conducting research and results

3.1. Interdependence between investment and migration

Investments have a significant impact on migration processes, both in large economies and in developing countries. Critical aspects of the impact of investments on migration can include:

1. *Economic development and labour markets*: attracting investment can create new jobs and economic development. It can reduce unemployment and raise living standards, affecting migration movements. People from other regions often migrate in search of better earning opportunities.

2. *Infrastructure and social services*: Investments contribute to developing infrastructure and social services that can attract migrants. Improving the quality of education, healthcare, and general infrastructure can make the region more attractive to new residents.

3. *Development of business and innovation*: investments contribute to developing entrepreneurship and innovation. It can attract talented specialists and entrepreneurs from other countries, which promotes migration to regions with a high level of business activity.

4. *Financial markets and capital investments* are usually accompanied by developing financial markets and capital investments. It can attract foreign investors who, in turn, can bring foreign capital and expertise.

5. *Socio-economic inequalities*: Depending on how investments are distributed, they can lead to socio-economic inequalities between regions or social groups. It can cause people to migrate, looking for better living conditions or opportunities for self-development.

Summing up, investments have a powerful impact on migration processes, which can be both positive, contributing to the development of regions and improving the quality of life, and negative, causing socio-economic imbalances and increasing migration pressures.

However, this relationship is bilateral; migration can affect investment. Key aspects that confirm how migration can affect investment include the following:

1. *Labor*: Migration can affect the labour market by providing certain regions with more labour. For example, the influx of highly qualified workers can attract companies looking for qualified personnel to develop technology and innovation. It, in turn, increases the region's investment attractiveness and ensures an inflow of investment resources.

2. *Cultural diversity*: Migration can create cultural diversity, positively impacting creativity, innovation, and entrepreneurship. Companies can benefit from diverse perspectives and experiences that stimulate the development of new ideas and approaches.

3. *International relations*: Migration can contribute to the development of international relations. People who migrate for work or study can become a connecting element between different cultures and business communities, which contributes to establishing international business connections, stimulating the flow of investment resources, and developing international business.

4. *Demand for housing and services*: The increase in population due to migration can determine the demand for housing, infrastructure, and various services. It can be an incentive for developing the construction sector and other sectors of the economy.

Thus, the relationship between migration and investment can be complex and depends on various factors, such as sectors of the economy, the level of development of the country, political stability, and many others.

3.2. Correlation between ESG investment flow and international migration

Global investors pulled a net $13.2 billion from ESG assets in 2022, the first net outflow since 2011 after several years of net growth, according to data published by Refinitiv Lipper (2022). Total net assets managed by ESG funds fell 29% in 2022, compared to a 21% drop in non-ESG fund assets (Wilkes & Murugaboopathy, 2022). The main reasons for the fall were the consequences of the war in Ukraine, the decline of financial markets, political reactions to specific sectors of industry, and the migration crisis in Ukraine and many European countries, which changed the focus of investment activity and the mood of investors. Thus, Russia's invasion of Ukraine, higher gas prices, and concerns about energy security have strengthened the attractiveness of the traditional oil and gas sector. As a result, interest in ESG issues such as climate change and social responsibility has somewhat declined (Figure 3, Figure 4).

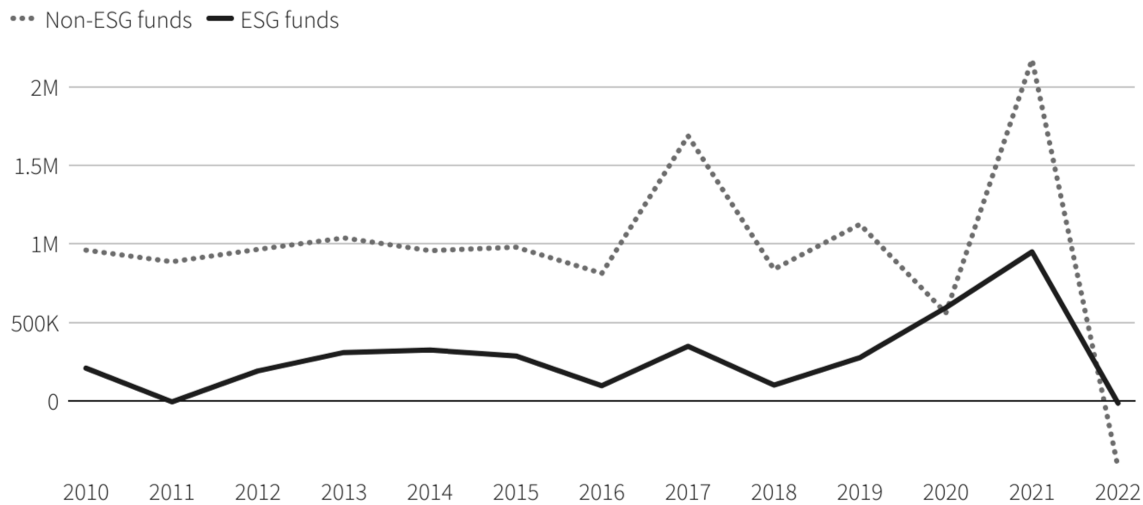

Figure 3. Flows into global ESG funds, millions of USD.
Source: *Refinitiv Lipper (2022).*

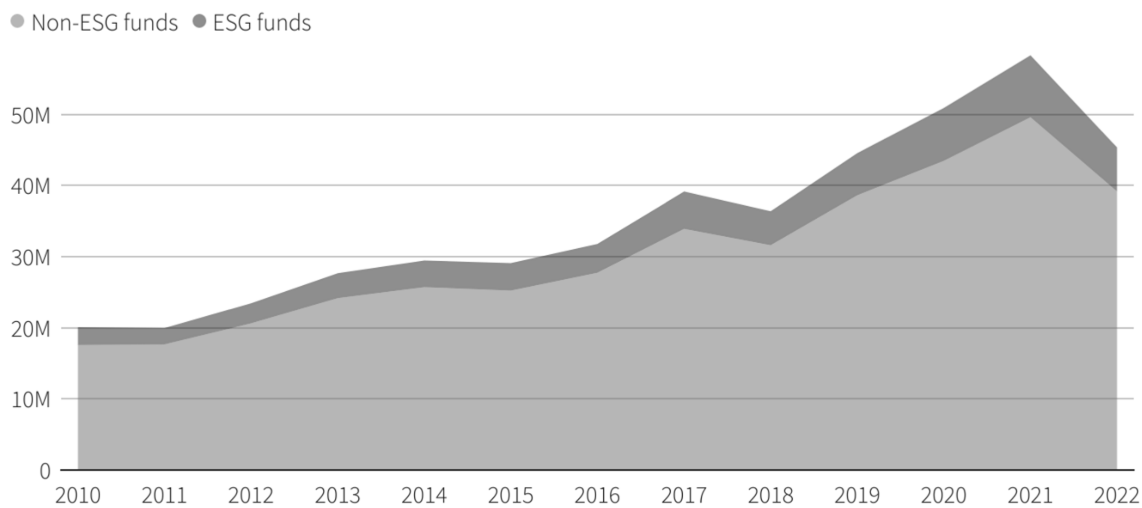

Figure 4. Net assets of ESG funds vs non-ESG funds, millions USD.
Source: *Refinitiv Lipper (2022).*

Based on the analysis of the correlation between ESG investment flows from 2010 to 2022 and, accordingly, the number of international migrants in the world (nominal value and as a percentage of the total world population), we investigated whether there is a relationship between these indicators.

The global migration processes were somewhat uneven (Fig. 5).

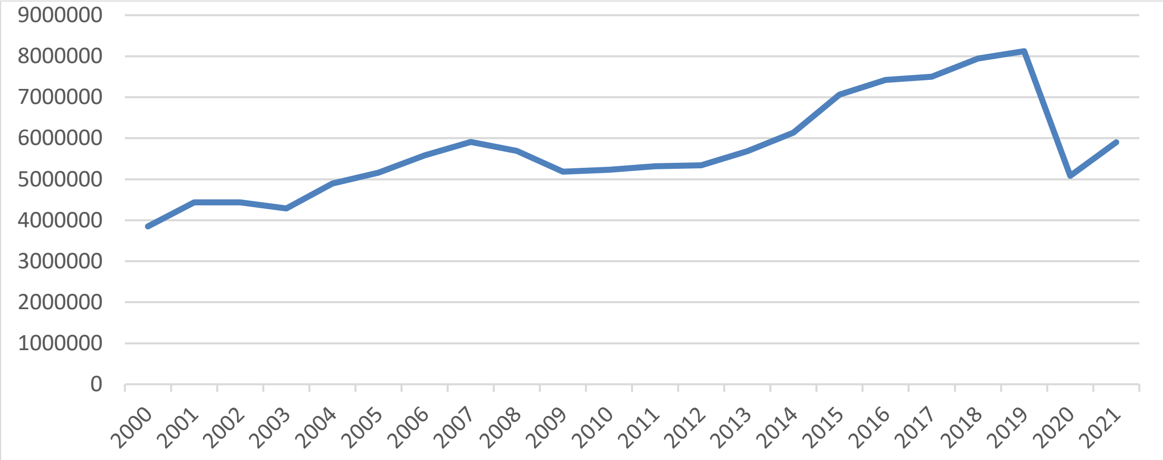

Figure 5. Inflows of foreign population, total, 2000-2021, persons
Source: *https://stats.oecd.org/Index.aspx?DataSetCode=MIG*

Thus, the correlation between the volume of ESG investment flows in the world, and the number of international migrants (as a percentage of the total population, which has fluctuations from 3,2% to 3,6%) from 2010 to 2022 is 35%. Considering only the period from 2010 to 2021 due to significant changes in 2022 due to the Russian-Ukrainian war (and the more decisive influence of other factors which led to switching investment focuses to other areas), there is a higher correlation – 71% (table 1).

Table 1. Correlation between ESG investment flow and international migration as a percentage of the total population in 2010-2022

	2010-2022	**2010-2021**
Pearson's correlation	35%	71%
Spearman's Rank correlation	30%	56%

Sources: *developed by the authors based on the yearly statistical data from the Refinitiv Lipper (2022) and IOM (2022).*

The analysis of the constructed correlations indicates a moderate relationship between the flows of ESG investments and global migration growth. It is explained by the fact that migration processes are one of the factors that impact the formation of the country's investment attractiveness, and the level of investment attractiveness, in turn, affects the course of migration processes in the world in general and in separate countries. That is, these concepts are interdependent. Of course, the influence of other factors on investigated indicators is higher, but their analysis and consideration are essential for a fuller overview of socio-economic trends.

Regression analysis

To achieve the main goal of the research, linear regression analysis was performed. The experiment data consists of variables describing the number of migrants, the volume of investments (current and lagged level), the level of internet sales, and the share of e-commerce enterprises from 2010 to 2022, and 2 dummy variables describing the boost in migration as a result of the full-scale Russian invasion in 2022 and the migration crisis in 2015.

The Breusch-Pagan test rejects the heteroskedasticity in a linear regression at $\alpha = 0.05$ confidence level. So, we could estimate a linear relation between migration level and investment dynamics in separate countries.

The regression analysis was conducted to explore the relationship between key variables, including investment flows and level of migration in four European countries: Poland, Czechia, Germany, and France. The results of the modeling are presented in Table 2, Table 3, Table 4, and Table 5.

Table 2. The results of modelling migration level in Poland

$$Migration = \beta_0 + \beta_1 Investment + \beta_2 Ecommerce + \beta_3 Eenterprises + \beta_4 War + \varepsilon$$

Variable	Coefficient	Std Error	t-statistics	P-value
Intercept	-3 271,26	10 330,11	-0,32	0,75
War	1 418 448,81	34 842,22	40,71	0,00
Internet_Sales_Poland	1 928,09	256,62	7,51	0,00
Observations				28
R^2				0,988
Adj R^2				0,987
F-Statistics				1044,73
P-value				0,000

Source: author's calculation based on the data from the OECD Database (https://stats.oecd.org/Index.aspx?DataSetCode=MIG), the World Bank Database (https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD), Eurostat Database (https://ec.europa.eu/eurostat/databrowser/view/ISOC_EC_IB20__custom_9916821/default/table?lang=en; https://ec.europa.eu/eurostat/databrowser/view/isoc_ec_esels__custom_9916873/default/table?lang=en).

Table 3. The results of modelling migration level in Czechia

$$Migration = \beta_0 + \beta_1 Investment + \beta_2 Ecommerce + \beta_3 Eenterprises + \beta_4 War + \varepsilon$$

Variable	Coefficient	Std Error	t-statistics	P-value
Intercept	6 712,80	8 317,75	0,81	0,43
War	1 063 055,84	20 207,71	52,61	0,00
Investments_Czechia	4,41	1,03	4,29	0,00
Observations				28
R^2				0,992
Adj R^2				0,991
F-Statistics				1472,21
P-value				0,000

Source: author's calculation based on the data from the OECD Database (https://stats.oecd.org/Index.aspx?DataSetCode=MIG), the World Bank Database (https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD), Eurostat Database (https://ec.europa.eu/eurostat/databrowser/view/ISOC_EC_IB20__custom_9916821/default/table?lang=en; https://ec.europa.eu/eurostat/databrowser/view/isoc_ec_esels__custom_9916873/default/table?lang=en).

Table 4. The results of modelling migration level in Germany

$$Migration = \beta_0 + \beta_1 Investment + \beta_2 Ecommerce + \beta_3 Eenterprises + \beta_4 War + \beta_5 Mig\_crisis + \varepsilon$$

Variable	Coefficient	Std Error	t-statistics	P-value
Intercept	- 281 940,03	234 137,37	- 1,20	0,24
Migration crisis 2015	889 874,92	249 295,07	3,57	0,00
War	438 744,56	250 662,50	1,75	0,09
Internet_Sales_Germany	17 116,02	3 434,48	4,98	0,00
Observations				28
R^2				0,698
Adj R^2				0,6604
F-Statistics				18,46
P-value				0,000

Source: author's calculation based on the data from the OECD Database (https://stats.oecd.org/Index.aspx?DataSetCode=MIG), the World Bank Database (https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD), Eurostat Database (https://ec.europa.eu/eurostat/databrowser/view/ISOC_EC_IB20__custom_9916821/default/table?lang=en; https://ec.europa.eu/eurostat/databrowser/view/isoc_ec_esels__custom_9916873/default/table?lang=en).

Table 5, The results of modelling migration level in France

$$Migration = \beta_0 + \beta_1 Investment + \beta_2 Ecommerce + \beta_3 Eenterprises + \beta_4 War + \beta_5 crisis + \varepsilon$$

Variable	Coefficient	Std Error	t-statistics	P-value
Intercept	- 1 469,98	13 017,84	- 0,11	0,91
Crisis 2006 and 2013-2018	69 703,37	9 139,63	7,63	0,00
War	86 459,62	21 751,74	3,97	0,00
Investments_France	0,51	0,15	3,29	0,00
Internet_Sales_France	2 195,27	228,43	9,61	0,00
Observations				28
R^2				0,9494
Adj R^2				0,940
F-Statistics				106,35
P-value				0,000

Source: author's calculation based on the data from the OECD Database (https://stats.oecd.org/Index.aspx?DataSetCode=MIG), the World Bank Database (https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD), Eurostat Database (https://ec.europa.eu/eurostat/databrowser/view/ISOC_EC_IB20__custom_9916821/default/table?lang=en; https://ec.europa.eu/eurostat/databrowser/view/isoc_ec_esels__custom_9916873/default/table?lang=en).

For Poland, investment demonstrated an insignificant influence on migration with a probability of 90% and was deleted from the model. In the Czechia context, the investments variable exhibited a significant favourable influence on migration with a probability of 90% ($\beta = 4{,}41$, $p = 0.00 < 0.1$). In Germany, a level of investment also displayed an insignificant relationship with migration and was deleted from the model. In France, the level of investment displays an insignificant positive relationship with migration (β = 0.51, $p = 0 < 0.1$).

Across all models, the R^2 Values indicate the proportion of variance in migration explained by the predictors. The models for Czechia, Poland, France, and Germany demonstrated high R^2 values, ranging from 70% to 100%, suggesting a good quality of the received results.

These findings highlight the varying impact of predictors on migrations across European countries. The significance levels and coefficients underscore the nuanced nature of these relationships, emphasizing the importance of considering country-specific factors in understanding the influence of investment on migration dynamics, especially after the significant growth of the number of migrants since the start of the full-scale Russian-Ukrainian war.

Considering the impact of ESG investments on migration processes, it is essential to note that specific ESG investment initiatives can increase the number of high-quality jobs and expand trade and investment opportunities for countries. This initiative and program operates in North American countries. It encourages international businesses to cooperate with local companies to promote ESG reporting. The benefits and opportunities of implementing structural reporting on ESG are conveyed. The Partnership for Central America, starting in 2021, aims to eliminate the root causes of migration by promoting economic opportunities in the region and implementing ESG investments practically. The ESG initiative aims to enhance the region's socio-economic development and environmental sustainability, which is expected to impact migration processes positively. Many regional companies are part of extensive value-added chains that demand more corporate practices and standards, leading to an increased need for labour and migration growth. The integration of ESG capabilities with investor requirements drives economic growth, resulting in the inclusion of new labour forces through migration. Creating a favourable environment to attract investors and new businesses is crucial for job creation in the region and for employing migrants. (WeForum, 2022).

Migration is emerging as an essential aspect of ESG investing, particularly as a solution to improve migration driven by climate change. Global warming, primarily associated with an increase in the temperature of the environment, threatens the mass displacement of millions of people worldwide (Romaniuk, 2020). Investors committed to climate action have a unique opportunity to consider migration and migrant rights as ethical, material, and systemic issues (Preventable Surprises, 2022). Investors must act, as the effects of climate change are already felt. Migration will be the default adaptation strategy. Investors must join governments and cities to act on safe pathways to a target of one billion migrants by 2050 (Preventable Surprises, 2022b).

Immigration ethics intersect with ESG criteria to evaluate companies from various perspectives. Through a social lens, one can directly assess how well and fairly companies treat immigrants and non-citizens, including their employees, consumers, and local community members. It includes immigrants of various statuses, such as H-1B workers, undocumented immigrants, refugees, and naturalized immigrants. A company's environmental record can also be scrutinized in terms of its impact on immigration, as environmental damage, such as pollution, can displace people and even create environmental refugees. Finally, from a governance perspective, companies can be judged on, for example, whether they fairly compensate immigrant and non-citizen workers and whether they provide their lowest-paid workers with a living wage (Santa Clara University, 2022). The International Convention on the Protection of the Rights of All Migrant Workers and Members of their Families (1990) requires states to ensure the protection of the rights and prevention and avoidance of the exploitation of working migrants and their families during the migration.

In response to the restrictive immigration policies introduced by governments in various countries, it is necessary to assess the impact of geopolitical factors on employees, their well-being, and retention rates. In addition, it is worth evaluating how best to use each country's rules to support the mobility of the company's employees. On the other hand, against the backdrop of growing competition for labour in the international market, it is worth assessing the flexibility and effectiveness of mobility programs and immigration policy and how handy it is to be competitive. On the third hand, in the conditions of high digitization and ongoing digital transformation, it is necessary to ensure that there is a correct management structure for the migration of talent and labour to support effective decision-making and protect the business from possible increased responsibility from the government (Johannes, 2023).

Thus, considering migration processes and reviewing the company's migration policy within the framework of ESG criteria is a necessary condition for the company's future development, as both areas are rapidly developing and strongly influence each other.

Conclusion

We analyzed global FDI flows, global ESG investment flows, and global migration trends from 1995 to 2022. Based on the analysis of the correlation between ESG investment flows in the period 2010-2022 and the corresponding number of international migrants in the world (in nominal terms and as a percentage of the total world population), we investigated the existence of a relationship between these indicators. The correlation between the volume of global ESG investment flows and the number of international migrants (as a percentage of the total population, which varies between 3.2% and 3.6%) from 2010 to 2022 is 35%.

The results of our analysis showed that introducing ESG principles into companies' activities, particularly the attraction of foreign direct investment in compliance with the ESG principles, stimulates the inflow of migrants to the country. In general, EU countries face a labour shortage, exceptionally skilled workers in industrial sectors. Countries should encourage multinational companies operating in the EU to adhere to ESG principles in their operations to stimulate the migration of skilled workers. Creating an appropriate investment climate through the implementation of the EU Directives on the use of ESG principles and strategies in investment, as well as the dissemination of relevant standards in national legislation, will create a more favourable investment environment that takes into account the interests of sustainable development of countries and the attraction of migrants.

The regression analysis from 1995 to 2022 was conducted to explore the relationship between key variables, including investment flows, and the level of migration in four European countries: France, Poland, the Czech Republic, and Germany. The results highlight the strong relationship between migration and net FDI inflows. The significance levels and coefficients underscore the nuanced nature of these relationships, highlighting the importance of considering country-specific factors in understanding the influence of investment on migration dynamics. The results suggest that investment inflows can reduce migration outflows and attract migration inflows by creating new jobs, accelerating economic growth, and improving the business climate. Investments based on ESG principles can also help reduce emigration by improving the quality of life in the host country, protecting the environment, and promoting transparent corporate governance. It is important to note that investments may not clearly impact migration caused by external factors such as war or political conflict. Any analysis should, therefore, exclude periods of global economic and political turmoil.

The limitation of our study is that there is currently no unified international database on ESG investment statistics, so we had to use proxy variables to build a regression model of the relationship between investment and migration. In the future, as the volume of ESG investments increases globally due to companies' initiatives and increased national regulation, global databases might be created that will allow us to explore the direct relationship between ESG investment and migration. Also, the ESG phenomenon has only recently started to gain global significance, so this does not allow for meaningful statistical time series. This limitation will disappear in a few years.

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