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Article

Drivers and probability of outward foreign divestment in Eastern European Countries

Justice Gameli Djokoto

TALI Graduate School, Dominion University College, Accra GA027, Ghana; dgameli2002@gmail.com, j.djokoto@duc.edu.gh

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Abstract: The study investigated drivers of divestment and the probability of divestment of outward foreign direct investment (DOFDI) in Eastern European Countries (EEC) from 1991 to 2021. The average likelihood of DOFDI for the EEC is 12%, with notable drivers including low economic growth and minor differences in general price levels of countries when denominated in the market exchange rate. Developed EEC countries showed a propensity towards a higher likelihood of DOFDI. Interestingly, a decrease in trade seemed to encourage DOFDI. Increased political regime characteristics and transitions were found to escalate the probability of DOFDI potentially. The study paved the way for understanding DOFDI for the EEC. It also sheds light on this concept for the region. The innovative measure of DOFDI as a probability measure, coupled with using a probit model to identify the drivers, brought to the fore new contributions to the scholarly domain. The probability of DOFDI was calculated, and the factors influencing it within the EEC were uncovered. This provides a fresh perspective by comparing transition and developed countries within the same region.

Keywords: complementary log-log analysis; determinants of divestment; Eastern Europe; foreign divestment; marginal probability

1. Introduction

Outward foreign direct investment (OFDI) refers to the injection of capital, skills, technology, and resources from domestic economies into foreign territories [1–4]. This economic strategy serves to foster technology transfer, stimulate employment, and accumulate investments within the host countries, as well as promote growth and market diversification in source countries [5–11]. However, despite these potential benefits, the Eastern European Countries (EEC) have been grappling with the challenge of divestment in OFDI (DOFDI), a strategic move that entails the reduction or withdrawal of these investments [12–17]. This phenomenon, prevalent in 22 of the EEC, has sparked concerns over the reduction of the benefits that OFDI offers to both the host and source countries. Episodes of DOFDI have been experienced in various countries such as Estonia, Montenegro, and Ukraine, and to a more significant extent, Romania, which underwent DOFDI for a third of the period between 1991 and 2019. Intriguingly, a few countries like Albania, Azerbaijan, Lithuania, Russia, and Serbia have managed to evade DOFDI during the same period. This trend elicits questions regarding the factors that precipitate DOFDI and the probability of its occurrence in the EEC.

The topic of divestment has primarily been analysed at the firm level, with minimal focus on macroeconomic perspectives [18–27]. Recent studies have explored the determinants of divestment, although the lens has predominantly been trained on inward foreign direct investment (IFDI) and divestment intensity or value [17,28–35].

Furthermore, even as the influence of host-country economic metrics on firms' OFDI is acknowledged, the specific impact on the likelihood of OFDI divestment remains largely unexplored.

In this context, we study the causes of DOFDI and estimate its likelihood in EEC. To this end, our investigation diverges from existing literature by focusing on the occurrence and probability of DOFDI in the EEC, examining data spanning from the introduction of the market economy in the EEC in 1991 to the most recent available data from 2019. We specifically focus on EEC, recognizing its late entry into OFDI and the diversity of economic statuses within the region. The EECs have transitioned from a command to a market economy at various times and at different rates using diverse methods. Countries like Hungary, Czechia, Poland, Slovakia, Estonia, and Latvia made rapid progress towards a market economy, while others, such as Albania, Azerbaijan, Belarus, and Ukraine, were slower [36–38]. These differences notwithstanding, the transitions had witnessed an influx of foreign direct investment, taking away resources from East Asia, Latin America, and Africa to the EEC. Consequently, there were declines and divestments. The average observable divestment is 13%, like the average predicted probability of divestment of 12%. Analysing the ECC could be interesting.

Considering OFDI's benefits to the source country in terms of growth, trade expansion, market access, and investment diversification, DOFDI represents a contraction of these advantages. The potential repercussions are numerous, affecting firm growth, trade and market access, business portfolio, and even the level of globalization. DOFDI's impact also extends to macroeconomic indicators, such as balance of payments, national income accounts, and gross domestic product, influencing overall economic growth.

By illuminating the drivers of DOFDI, this study offers a guide for policymakers to understand these dynamics better and incorporate them into their economic strategies. A better grasp of the factors leading to divestment may also inspire policies to discourage such actions. Estimating the probability of DOFDI could provide yearly assessments of risk and potential impact levels for each EEC country.

The subsequent sections of this paper are organized as follows: a review of divestment theory and relevant empirical evidence; data presentation and model formulation; discussion of empirical results and policy implications; and, finally, concluding remarks.

2. Materials and methods

The study employs data from a panel of 19 EECs as classified by the United Nations Department for General Assembly and Conference Management (Appendix), spanning from 1991 to 2021. Panel data is employed to capture the time (years) and cross-sectional (country) dimensions of the data. Divestment in OFDI (DOFDI) is the focus of the analysis. On the other hand, DOFDI, as a strategic decision of foreign affiliates of multinational enterprises in a host country, leads to changes in the business portfolio, culminating in a reduction in the level of assets [12–14,30,39]. The OFDI comprises a. the acquisition of equity capital, including the initial equity transaction that meets the 10% threshold and all subsequent financial transactions and positions

between the direct investor and the direct investment enterprise; b. the reinvestment of earnings that are not distributed as dividends; and c. inter-company debt [40]. DOFDI is the negative of the aggregate OFDI recorded by a country [14,17,41–45]. The aggregate analysis of this firm-level phenomenon allows for analysis of the concept of divestment at the national and supranational levels, permitting policies and strategies at these levels. According to the United Nations [39], DOFDI can be gauged using two methods: the balance of payments (BOP) and directional approaches (DA). While the BOP approach categorises investments as either an asset or a liability for the reporting country, the DA approach sorts investments based on their direction, i.e., inward or outward. The DA approach is adopted in this study, considering its greater relevance for policymaking.

The annual growth rate of the gross domestic product at constant 2015 prices (GDPGR) was used to reflect the market size or macroeconomic performance. Data for DOFDI and GDPGR were obtained from the United Nations [3]. The ratio of total imports and exports to nominal GDP was computed to determine economic openness (TO). The purchasing power parity market exchange rate (PPP_MXRATE) and additional data from the World Development Indicators of the World Bank were drawn. Data on political regime characteristics and transitions (POLITY2) were extracted from the Centre for Systematic Peace. A dummy variable was constructed for transition EEC countries (TRS = 1) and developed EEC countries (TRS = 0) using data from the United Nations [3,46]. As the unit of analysis is country/economy, country-level data was used. Thus, industry-level determinants are unwarranted.

Table 1. Descriptive statistics.

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
DOFDI	553	0.1284	0.3348	0.0000	1.0000
GDPGR	553	3.1599	5.2425	−22.9000	34.5000
XRATE	553	47.4205	100.2963	0.0004	578.7630
INFLA	553	21.9894	124.4571	−1.5448	2221.0166
PPP_MXRATE	553	0.4528	0.1536	0.1357	0.9321
TO	553	102.7204	32.2492	39.1352	190.6986
TRS = 1	553	0.4467	0.4976	0.0000	1.0000
POLITY2	553	6.8481	4.7276	−7.0000	10.0000

Note: 1. DOFDI: Divestment of outward foreign direct investment. GDPGR: Annual growth rate of GDP at constant 2015. XRATE: Nominal exchange rate. INFLA: Annual inflation based on the consumer price index. TO: The ratio of total imports and exports to nominal GDP. PPP_MXRATE: The purchasing power parity market exchange rate. POLITY2: Political regime characteristics and transitions. TRS: Transition EEC countries (TRS = 1) and developed EEC countries (TRS = 0); 2. Source—Authors' calculations. EEC countries have exhibited extreme economic growth rates, fluctuating from a low of −22.9% (Ukraine, 1994) to a high of 34.5% (Azerbaijan, 2006). These extremes give rise to an average growth rate of 3.16%, comparable to Estonia's performance in 2016. The GDPGR showcases overdispersion, as indicated by a variance greater than the mean. The mean value of the PPP_MXRATE variable stands at approximately 0.45, spanning from a minimum of 0.14 (Moldova, 1999) to a maximum of 0.93 (Slovenia, 2008).

The descriptive statistics for all variables utilized in this research are presented in **Table 1**. The mean DOFDI of 0.1284 implies that approximately 13% (71 out of a total of 553) of the observations represented divestments. This is somewhat low, particularly given that divestment is a common occurrence in most developed

countries [15]. However, this is not entirely surprising considering the relatively late entry of EEC countries into OFDI and globalization, half of which (11 out of 22) are developed countries as per our study (see Appendix).

In assessing economic openness, Slovakia leads the way, registering a TO of 190.70 in 2018. Conversely, Romania showcased the least openness, with a TO of 39.14 in 1991. Contextually, it's crucial to note that the early 1990s marked the transition of the EEC to a market economy. Given that this period covers three decades (1991 to 2021), significant transformations in trade are expected within the EEC. The POLITY2 scores varied, with several countries, including Czechia, Hungary, Lithuania, Poland, Slovakia, and Slovenia, achieving the highest score of 10. In contrast, Azerbaijan and Belarus recorded the lowest POLITY2 score of −7. When examining the control variables, only TRS displayed signs of under dispersion.

Given the limited evidence concerning determinants of the likelihood of DOFDI, the analysis draws upon existing studies on DOFDI and OFDI determinants. Most of these studies have focused on OFDI intensity/value [17,29,32], and considered factors such as market size/macroeconomic performance (GDPGR), economic openness (TO), inflation (INFLA), exchange rate (XRATE), and political regime characteristics and transitions (POLITY2).[1] However, recognising that the official exchange rate might not fully reflect market conditions, which are more pertinent to investors, we propose replacing INFLA and XRATE with a custom variable—the purchasing power parity market exchange rate (PPP_MXRATE). This metric, which represents the ratio of a purchasing power parity (PPP) conversion factor to the market exchange rate, offers an effective measure of price level variations between countries.

Although host country factors may be important determinants of outward foreign direct investment, many studies have modelled determinants of outward foreign direct investment using investor or home country factors and not investment or host country factors [47–65]. Further, divested funds return to their country [12–14]. Also, the use of home-country determinants would allow the formulation and implementation of relevant domestic policies, which are under the control of managers of the domestic economy. This is almost impossible to do in the case of host-country factors over which the home-country economic managers do not have control. Thus, home-country factors are worth assessing as determinants of divestment. Following these and the numerous empirical evidence for both European and non-European countries, we model home-country determinants of outward divestment.

Given the binary dependent variable and the nature of our panel data, the model DOFDI is as follows:

$$\mathrm{DOFDI}_{it} = \beta_0 + \beta_1 \mathrm{GDPGR}_{it} + \beta_2 \mathrm{TO}_{it} + \beta_3 \mathrm{PPP\_MXRATE}_{it} + \beta_4 \mathrm{POLITY2}_{it} + \beta_5 \mathrm{TRS}_{it} + u_i + \varepsilon_{it} \quad (1)$$

here, i and t subscripts denote country and year respectively, u_i signifies the unobserved time-invariant country effect, ε_{it} is the idiosyncratic error term, and the β's are parameters awaiting estimation.

At the aggregate level, the divestment of OFDI shows as a negative OFDI (negative of net OFDI) [4,17,30,31,33,66–68]. The primary interest of the study lies in the probability that DOFDI = 1 in a binary choice model of this kind. Hence, the cumulative distribution function of the standard normal distribution, or the link function (probit, logit, or cloglog), to the right-hand side of Equation (1) [69–75] was

applied. The presence of unobserved time-invariant country effect (u_i) also necessitated the estimation of Equation (1) via a panel data estimator (i.e., random effects, fixed effects, or population-averaged). The strength of the estimators lies in constraining the dependent variables within 0 and 1. In the case of fractional regression analysis, the interval between 0 and 1 applies to the estimator. The weakness, however, is that not one link function encompasses the model, but several link functions. The weakness was surmounted by selecting among various link functions and panel estimators for the model using the Akaike Information Criterion (AIC). Based on these diagnostics and the interest in estimating propensity scores, the discussion focuses on the cloglog random effects model. However, it has been shown that the core findings are robust to the selection of link function and panel data estimator.

Using the parameters estimated from Equation (1), the probability of a positive outcome (i.e., the occurrence of DOFDI) was computed and split based on country and level of development. Further, the descriptive statistics for these subsets and the total sample were calculated. The probability of DOFDI in the EEC is the mean propensity score of the sample, given the covariates in the chosen model.

3. Results

Appendices B–E show the estimations with logit, probit, and cloglog estimators based on Equation (1). The primary configuration, Model (1) in **Table 2**, uses the purchasing power parity market exchange rate (PPP_MXRATE) as the representative variable to demonstrate price level disparities across different countries. Alternative models, Model (2) and Model (3), separately employ the variables inflation (INFLA) and exchange rate (XRATE), respectively, to underscore these variations in price levels. Model (4) incorporates both INFLA and XRATE. Models (5) and (6) add homogenous and heterogenous (by country) annual trends to Model (1), respectively. Each model exhibits satisfying diagnostic results. A consistent observation across all models is the panel-level variance component's contribution to the total variance is small, ranging from near zero to 16%. This contribution is statistically insignificant, suggesting that the panel estimator is equivalent to the pooled estimator.

Table 2. Random-effects estimation results of the relationship between economic growth and divestment of outward foreign direct investment in Eastern Europe.

	Model (1) ††	**Model (2)**	**Model (3)**	**Model (4)**	**Model (5)**	**Model (6)**
	Estimated parameters					
GDPGR	−0.069***	−0.070***	−0.078***	−0.078***	−0.068***	−0.059***
	(0.020)	(0.020)	(0.022)	(0.022)	(0.020)	(0.021)
PPP_MXRATE	−2.471**				−2.366*	−1.038
	(1.146)				(1.236)	(1.518)
XRATE		0.000		0.000		
		(0.002)		(0.002)		
INFLA			−0.001	−0.001		
			(0.001)	(0.001)		

Table 2. (*Continued*).

	Model (1) ††	**Model (2)**	**Model (3)**	**Model (4)**	**Model (5)**	**Model (6)**
	Estimated parameters					
TO	0.001	−0.001	−0.001	−0.001	0.001	0.004
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.008)
POLITY2	0.085*	0.075	0.079	0.079	0.086*	0.101
	(0.048)	(0.049)	(0.050)	(0.050)	(0.048)	(0.068)
TRS = 1	−0.272	0.110	0.159	0.163	−0.236	2.599
	(0.372)	(0.389)	(0.405)	(0.409)	(0.406)	(4.891)
None country-specific annual trends included	No	No	No	No	Yes	No
Country-specific annual trends included	No	No	No	No	No	Yes
	Marginal probability estimates					
GDPGR	−0.212***	−0.213***	−0.238***	−0.238***	−0.210***	−0.171***
	(0.064)	(0.065)	(0.073)	(0.073)	(0.065)	(0.065)
PPP_MXRATE	−1.039**				−0.995*	−0.439
	(0.487)				(0.525)	(0.643)
XRATE		−0.003		−0.005		
		(0.074)		(0.076)		
INFLA			−0.012	−0.012		
			(0.018)	(0.018)		
TO	0.093	−0.091	−0.054	−0.056	0.134	0.417
	(0.440)	(0.456)	(0.461)	(0.463)	(0.478)	(0.790)
POLITY2	0.531*	0.463	0.485	0.487	0.539*	0.679
	(0.294)	(0.298)	(0.305)	(0.306)	(0.298)	(0.452)
TRS = 1	−0.113	0.045	0.065	0.067	−0.098	0.874
	(0.156)	(0.159)	(0.165)	(0.166)	(0.170)	(1.643)
	Model diagnostics					
Number of observations	553	553	553	553	553	443
Number of countries	22	22	22	22	22	17
Rho	0.08	0.15	0.16	0.16	0.08	0.00
Model significance	20.738***	15.244***	15.525***	15.530**	20.851***	32.156*
Log Likelihood	−198.58	−200.77	−200.44	−200.43	−198.55	−177.54

Notes: 1. DOFDI: Divestment of outward foreign direct investment. GDPGR: Annual growth rate of GDP at constant 2015. XRATE: Nominal exchange rate. INFLA: Annual inflation based on the consumer price index. TO: The ratio of total imports and exports to nominal GDP. PPP_MXRATE: The purchasing power parity market exchange rate. POLITY2: Political regime characteristics and transitions. TRS: Transition EEC countries (TRS = 1) and developed EEC countries (TRS = 0); 2. Countries included are Albania, Croatia+, Latvia+, North Macedonia, Serbia, Armenia, Czechia+, Lithuania+, Poland+, Slovakia+, Azerbaijan, Estonia+, Moldova, Romania+, Slovenia+, Belarus, Georgia, Montenegro, Russia, Ukraine, Bulgaria+, Hungary+; where + indicates Developed countries according to United Nations [46]; 3. The preferred model is ††; 4. Significance levels—* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$; 5. Standard errors in parentheses; 6. Source: Authors' calculations.

The estimations for other variables demonstrate robustness, maintaining their qualitative integrity irrespective of the chosen variable representing price level differences between countries. The robustness of the estimates in **Table 2** is further

confirmed by the difference in the estimates of model 1 and the corresponding estimates of models 2–6 (**Table 3**). The *t* statistics exceed 1.3, suggesting that they are robust.

Table 3. Difference (*t*-test) statistics between estimates of model 1 and corresponding estimates of models 2–6.

	1–2	**1–3**	**1–4**	**1–5**	**1–6**
GDPGR	0.01	0.27	0.27	−0.02	−0.45
PPP_MXRATE				−0.08	−0.72
XRATE				0.02	
INFLA				0.00	
TO	0.29	0.23	0.23	−0.06	−0.36
POLITY2	0.16	0.11	0.10	−0.02	−0.27
TRS = 1	−0.71	−0.78	−0.79	−0.07	−0.60

Notes: 1. DOFDI: Divestment of outward foreign direct investment. GDPGR: Annual growth rate of GDP at constant 2015.XRATE: Nominal exchange rate. INFLA: Annual inflation based on the consumer price index. TO: The ratio of total imports and exports to nominal GDP. PPP_MXRATE: The purchasing power parity market exchange rate. POLITY2: Political regime characteristics and transitions. TRS: Transition EEC countries (TRS = 1) and developed EEC countries (TRS = 0); 2. Values in the table are *t-statistics*; 3. Values for *XRATE* and *INFLA* are the differences between models 3 and 5 estimates and 4 and 5, respectively, because there are no corresponding estimates for these XRATE and INFLA in model 1.

Figure 1 complements these findings, confirming the robustness of the estimated marginal probability for Model (1). This robustness persists across variations in the link function (probit, logit, or cloglog), panel data estimator (such as random effects, fixed effects, or population-averaged), and possible combinations of these configurations. In the following sections, we will concentrate our discussion on Model (1), estimated as random effects with a cloglog link function.

4. Discussion

4.1. Discussion of the determinants of foreign divestment in EEC

The assessment indicates that the marginal effect of the GDP growth rate (GDPGR) of EECs suggests a 0.21% decrease in the likelihood of divestment with each 1% rise in the GDP growth rate (**Table 2, Figure 1**). An economic upswing in EECs often provides domestic firms with additional resources, reducing reliance on foreign affiliates. Further, rather than repatriating resources during DOFDI, EEC multinationals may consider investing in other countries. More resources for the parent company can aid struggling foreign affiliates in ECC, deterring DOFDI. Djokoto [17] stated that market size expansion increases household incomes, stimulating product purchases, and greater economic size correlates with increased resource availability. The observation of significant impacts on DOFDI's economic performance aligns with Correa da Cunha et al.'s [29] findings on OFDI intensity and Djokoto [17] and Edo and Nnadozie's [32] conclusions regarding DOFDI intensity.

The most substantial partial effect pertains to the purchasing power parity market exchange rate (PPP_MXRATE). This highlights that inflation and exchange rates can significantly impact DOFDI and need careful monitoring by economic stakeholders in

the EEC. Inflation diminishes the monetary value and, consequently, the value of multinationals' domestic resources, which can impact internationalization strategies. Parent companies, often dependent on the open forex market, may find their resource transfer capacity limited by high open market forex prices. While a higher market exchange rate can enhance the local currency volume of foreign currency receipts, inflation may counteract this advantage. The theory notes that the factors that favour OFDI can work in reverse order to discourage OFDI. Therefore, the EEC must manage both inflation and the market exchange rate and crucially, reduce the discrepancy between the official and market exchange rates. Djokoto [17] identified the official exchange rate as a significant influencer of the global agricultural sector DOFDI.

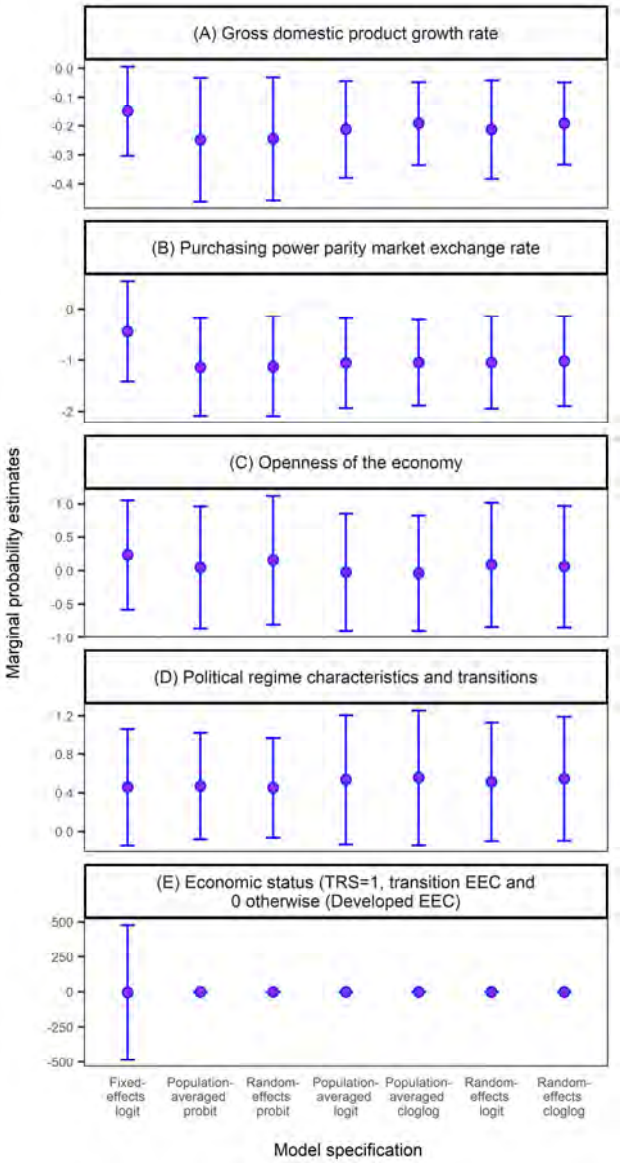

Figure 1. Marginal probability estimate of the divestment of outward foreign direct investment in Eastern Europe: **(A)** Gross domestic product growth rate; **(B)** Purchasing power parity market exchange rate; **(C)** Openness of the economy; **(D)** Political regime characteristics and transitions; **(E)** Economic status.
Source: Authors' calculations.

The marginal effect of transitioning to developed status (TRS = 1) (−0.113) indicates an 11% decrease in divestment likelihood for transitioning countries in the EEC. This aligns with Borga et al. [15] and Djokoto [17], who noted that developed countries, often having extensive foreign investments, are more prone to DOFDI. Indeed, our data shows that about 40% of the 71 DOFDI instances are attributable to transition economies, with the remaining 60% being developed EEC economies. The openness of the economy (TO) of EECs did not impact DOFDI, despite having a positive marginal effect. This coincides with Djokoto's [17] findings. Exports, often the first strategy for foreign market entry, can also meet foreign market demands in the case of divestment, leading to the neutral effect of trade on DOFDI.

Lastly, the marginal effect of political regime characteristics and transitions (POLITY2) is positive and statistically significant, consistent with Djokoto's [17] observations. Djokoto [17] reasoned that fostering FDI in agriculture often coincides with investment-securing laws. Thus, these laws that attract FDI also allow multinational firms' affiliates in host countries to divest when necessary. The variability of political regime characteristics and transitions correlates with DOFDI variability. The EEC does not deviate from other regions in this respect.

4.2. Probability of foreign divestment in EEC

This section presents a nuanced assessment of the probability of foreign divestment across Eastern European Countries. Rather than merely identifying whether divestment has occurred, we estimate the likelihood of such an event based on determinants of divestment and available data for all EEC nations. Understanding the likelihood of divestment aids both business leaders and policymakers in strategic decision-making processes. **Figure 2** illustrates the box plots for the likelihood of OFDI divestment across different Eastern European Countries. It presents an overview of each country's divestment trends by highlighting the central tendency and the dispersion around this value.

Among the countries analysed, Bulgaria exhibits the highest mean probability of divestment at roughly 0.201, suggesting that Bulgaria's OFDI is more prone to divestment compared to its regional counterparts. However, the notable standard deviation of 0.097 indicates a considerable degree of stability around this mean. Consequently, the probability of divestment in Bulgaria is stable and cannot fluctuate considerably. Ukraine ranks second in terms of the average probability of divestment, standing at about 0.180, demonstrating a relatively high propensity for OFDI divestment but with a noticeably high considerable degree of variability. At the other end of the spectrum, Azerbaijan has the lowest average divestment probability, approximately 0.035, signifying a lower tendency for divestment. The small standard deviation of 0.017 further corroborates the stability and lower variability in Azerbaijan's divestment rates.

On a regional scale, the Eastern European Countries collectively exhibit an average OFDI divestment probability of 0.119, with a standard deviation of 0.067. This signifies an 11.9% average likelihood of OFDI divestment across these nations. This compares with the observable divestment of EEC countries of 13% (**Table 1**). Notably, the lower probabilities in the transitional economies within the EEC have

influenced this overall average, pulling down the mean value calculated across all EEC nations. Despite the limitations of the mean as a central tendency measure, it still offers a valuable perspective on the overall divestment trends across the EEC.

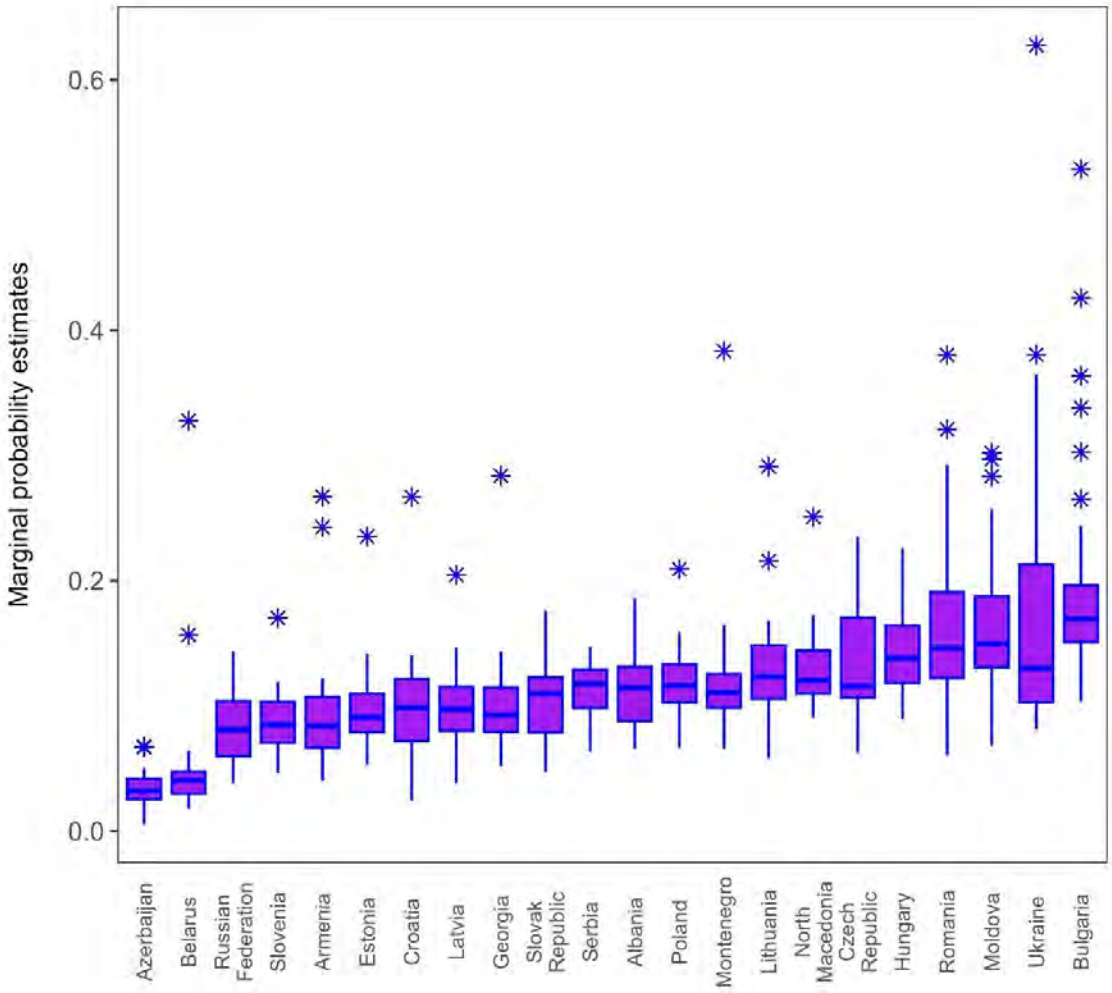

Figure 2. Spatial ranking of the probability of divestment of outward foreign direct investment in Eastern Europe.

Note: Within the box lie 50% of the observations for each country. The top of the box and above is the third quartile (Q3) and beneath the box is the Q1.
Source: Authors' calculations.

The annual estimates of the mean probability of OFDI divestment from 1991 to 2021, depicted in **Figure 3**, show a general downward trend over this period. The average divestment probability in 1991 was 0.361, which dropped to around 0.089 by 2021. This trend may be reflective of improved investment conditions and increased stability over the years. However, a notable spike in the mean divestment probability occurred in 2009, reaching approximately 0.17, likely due to the global financial crisis of 2008–2009, which may have spurred an increase in divestments.

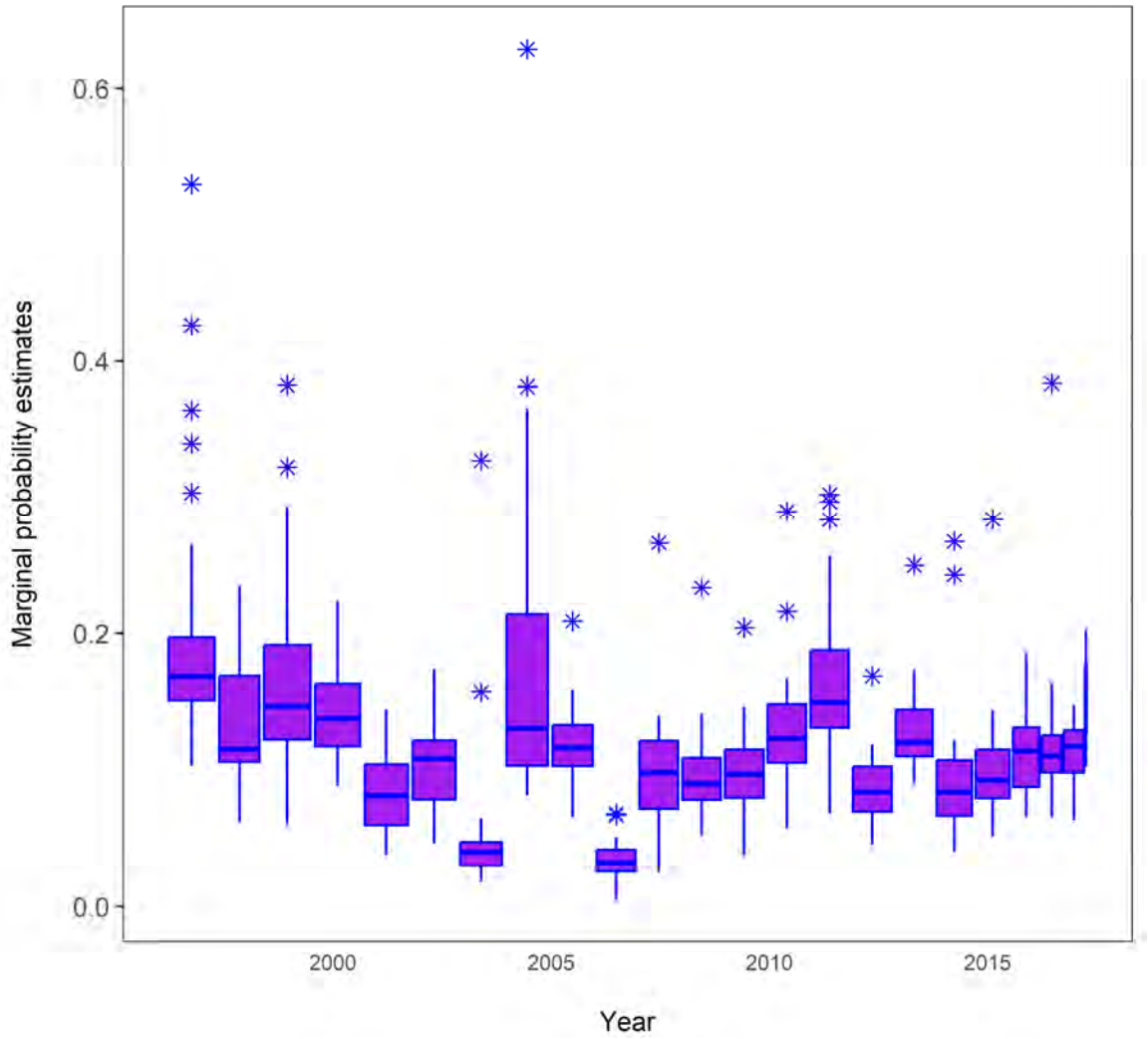

Figure 3. Temporal dynamics of the probability of divestment of outward foreign direct investment in Eastern Europe.
Note: Within the box lie 50% of the observations for each country. The top of the box and above is the third quartile (Q3) and beneath the box is the Q1.
Source: Authors' calculations.

These statistical analyses, while valuable, offer just a snapshot of a complex landscape. A myriad of factors, including a country's economic climate, political stability, foreign investment policies, infrastructure quality, and market accessibility, can significantly impact OFDI divestment rates. Thus, a holistic understanding of these statistics necessitates consideration of the broader socio-economic context of each country, as well as overarching trends in the global business landscape. Historical events, economic patterns, and policy shifts should also be factored in to fully comprehend the forces shaping these divestment probabilities over time.

4.3. Policy implications

Ukraine emerged as the country with the most unstable DOFDI in the EEC. It is noteworthy that transition economies within the EEC offer varying probabilities for DOFDI. As one such transition economy, Ukraine has interesting opportunities to reevaluate its domestic economic policies. It is important to note that this assessment is based on data collected before the conflict with Russia. The divestment is set to

worsen following its conflict with Russia that started in February 2022. The composition of the inflow of foreign direct investment and its consequent divestment will depend on the outcome of the conflict. As Ukraine moves forward with rebuilding efforts, there is an exciting opportunity to re-evaluate and optimise domestic economic policies to enhance investment. Ukraine and the rest of the EEC can foster economic growth. This can be achieved through promoting more extensive trade, enhancing domestic savings, fostering increased investment, focusing on inward FDI retention, and maintaining a fine balance between investment and consumption. Technology adoption can prove to be a cost-efficient tool that makes the EEC's exports more competitive.

Recognition and reinforcement of products where the EEC boasts a competitive advantage is an opportunity. An appealing interest rate that supports firms rather than discouraging them can serve as an excellent savings incentive. Achieving equilibrium between consumption and investment is vital, considering their inverse relationship, yet both hold positive ties with growth. Adjusting the domestic price level hinges on the balance between production levels and money supply. In the scope of our study, the concerned variable correlates with the market exchange rate. Therefore, trade and exchange rate policies could benefit from some focus. A higher proportion of exports over imports can create a positive trade surplus. However, we can explore beyond this; other elements of the balance of payments, like inward remittances, hold potential for enhancement. Encouragement could come from EEC citizens living abroad sending money back home. The efficient global integration of labour and financial resources has high relevance and could significantly benefit the EEC economies.

5. Conclusion

In concluding our study, we have paved the way in understanding DOFDI for the EEC, shedding light on this uncharted territory. The innovative measure of DOFDI as a probability, coupled with using a probit model to identify the drivers, has led us to bring new contributions to the scholarly domain.

We were able to not only calculate the probability of DOFDI but also uncover the factors influencing it within the EEC, providing a fresh perspective by comparing transition and developed countries within the same region. The study revealed an average probability of DOFDI for the EEC at 12%, with notable drivers including low economic growth and minor differences in general price levels of countries when denominated in the market exchange rate. Developed EEC countries showed a propensity towards a higher likelihood of DOFDI. Interestingly, a decrease in trade seemed to encourage DOFDI, while increased political regime characteristics and transitions were found to potentially escalate the probability of DOFDI.

From the foregoing, EECs must, rather than repatriate resources during DOFDI, EEC multinationals may consider investing in other countries. The EEC must manage both inflation and the market exchange rate and crucially, reduce the discrepancy between the official and market exchange rates. Whilst the democratic and governance environment attracts FDI, it also allows multinational firms' affiliates in host countries to divest when necessary.

Given the uniqueness of our study, comparable research is scant. This makes our findings both novel and valuable, but it also suggests a path forward for further research. We therefore recommend that future studies consider employing our methodological approach to investigate DOFDI and its drivers in other regions, continents, and countries. This will not only expand the body of knowledge on the subject but could also offer comparative insights that further deepen our understanding of the mechanisms behind DOFDI.

Although the estimators used in the analysis were suitable for unbalanced panel data, the use of balanced panel and additional data could improve the efficiency of the estimates, hence the results of the analysis.

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Notes

[1] It must be noted that although [32] identified the institutional quality index as a determinant, the data were available in 52 observations out of the 510 required for our estimations for the EEC.

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Appendix

Table A1. List of Countries in the data: Eastern Europe.

Albania	Croatia[+]	Latvia[+]	North Macedonia	Serbia
Armenia	Czechia[+]	Lithuania[+]	Poland[+]	Slovakia[+]
Azerbaijan	Estonia[+]	Moldova	Romania[+]	Slovenia[+]
Belarus	Georgia	Montenegro	Russia	Ukraine
Bulgaria[+]	Hungary[+]			

Note: 1. The Eastern European designation is based on United Nations [3]; 2. [+] Developed countries according to United Nations [46].

Table A2. Panel logistic estimations of the determinants of outward domestic divestment.

	(A1)	**(A2)**	**(A3)**	**(A4)**	**(A5)**	**(A6)**
VARIABLES	**DOFDI**	**DOFDI**	**DOFDI**	**DOFDI**	**DOFDI**	**DOFDI**
GDPGR	−0.0834***	−0.0824***	−0.0836***	−0.0822***	−0.0839***	−0.0819***
	(0.0241)	(0.0240)	(0.0242)	(0.0242)	(0.0241)	(0.0243)
PPPP_MEXRATE		−1.3341				−2.7336**
		(1.0446)				(1.2544)
TO			0.0005			0.0014
			(0.0052)			(0.0052)
POLITY2				0.0702		0.0875*
				(0.0469)		(0.0506)
TRS					−0.1560	−0.3127
					(0.3783)	(0.4194)
CONSTANT	−1.8972***	−1.2853**	−1.9528***	−2.4042***	−1.8208***	−1.2572
	(0.2151)	(0.5065)	(0.5866)	(0.4221)	(0.2771)	(0.8903)
Observations	553	553	553	553	553	553
Countries	23	23	23	23	23	23

Notes: 1. Standard errors in parentheses; 2. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A3. Panel probit estimations of the determinants of outward domestic divestment.

	(A7)	**(A8)**	**(A9)**	**(A10)**	**(A11)**	**(A12)**
VARIABLES	**DOFDI**	**DOFDI**	**DOFDI**	**DOFDI**	**DOFDI**	**DOFDI**
GDPGR	−0.0459***	−0.0459***	−0.0461***	−0.0450***	−0.0460***	−0.0458***
	(0.0135)	(0.0134)	(0.0136)	(0.0136)	(0.0135)	(0.0136)
PPPP_MEXRATE		−0.7208				−1.4956**
		(0.5566)				(0.6767)
TO			0.0005			0.0012
			(0.0028)			(0.0028)
POLITY2				0.0351		0.0429*
				(0.0238)		(0.0250)
TRS					−0.0832	−0.1805
					(0.2050)	(0.2331)
CONSTANT	−1.1085***	−0.7768***	−1.1634***	−1.3610***	−1.0686***	−0.7583
	(0.1155)	(0.2729)	(0.3170)	(0.2155)	(0.1487)	(0.4816)
Observations	553	553	553	553	553	553
Countries	23	23	23	23	23	23

Notes: 1. Standard errors in parentheses; 2. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A4. Panel complementary loglog estimations of the determinants of outward domestic divestment.

	(A13)	(A14)	(A15)	(A16)	(A17)	(A18)
VARIABLES	**DOFDI**	**DOFDI**	**DOFDI**	**DOFDI**	**DOFDI**	**DOFDI**
GDPGR	−0.0710***	−0.0691***	−0.0713***	−0.0705***	−0.0715***	−0.0687***
	(0.0197)	(0.0195)	(0.0199)	(0.0199)	(0.0198)	(0.0197)
PPPP_MEXRATE		−1.1630				−2.4705**
		(0.9547)				(1.1464)
TO			0.0005			0.0010
			(0.0047)			(0.0046)
POLITY2				0.0675		0.0849*
				(0.0437)		(0.0476)
TRS					−0.1424	−0.2716
					(0.3431)	(0.3721)
CONSTANT	−1.9887***	−1.4549***	−2.0420***	−2.4778***	−1.9178***	−1.4307*
	(0.1961)	(0.4614)	(0.5336)	(0.3938)	(0.2530)	(0.8035)
Observations	553	553	553	553	553	553
Countries	23	23	23	23	23	23

Notes: 1. Standard errors in parentheses; 2. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A5. Assembly of the complete models of the three estimators.

	(A6)	(A12)	(A18)
VARIABLES	**DOFDI**	**DOFDI**	**DOFDI**
GDPGR	−0.0819***	−0.0458***	−0.0687***
	(0.0243)	(0.0136)	(0.0197)
PPPP_MEXRATE	−2.7336**	−1.4956**	−2.4705**
	(1.2544)	(0.6767)	(1.1464)
TO	0.0014	0.0012	0.0010
	(0.0052)	(0.0028)	(0.0046)
POLITY2	0.0875*	0.0429*	0.0849*
	(0.0506)	(0.0250)	(0.0476)
TRS	−0.3127	−0.1805	−0.2716
	(0.4194)	(0.2331)	(0.3721)
CONSTANT	−1.2572	−0.7583	−1.4307*
	(0.8903)	(0.4816)	(0.8035)
Observations	553	553	553
Countries	23	23	23

Notes: 1. Standard errors in parentheses; 2. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.