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### Spatial competition for FDIs in Southeast Europe

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#### Abstract

This paper investigates the spatial dynamics of foreign direct investment (FDI) in Southeast Europe, focusing on whether FDI inflows in one country complement or compete with those in neighboring economies. Using spatial econometric models and panel data from 2014 to 2023 across seven countries, the analysis reveals strong competitive effects, where FDI in one country often reduces inflows in others. Sectoral specialization and economic fundamentals also shape FDI patterns. The findings corroborate the need for coordinated regional policies to mitigate harmful competition and foster balanced, sustainable investment across the region.

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# 1. Introduction

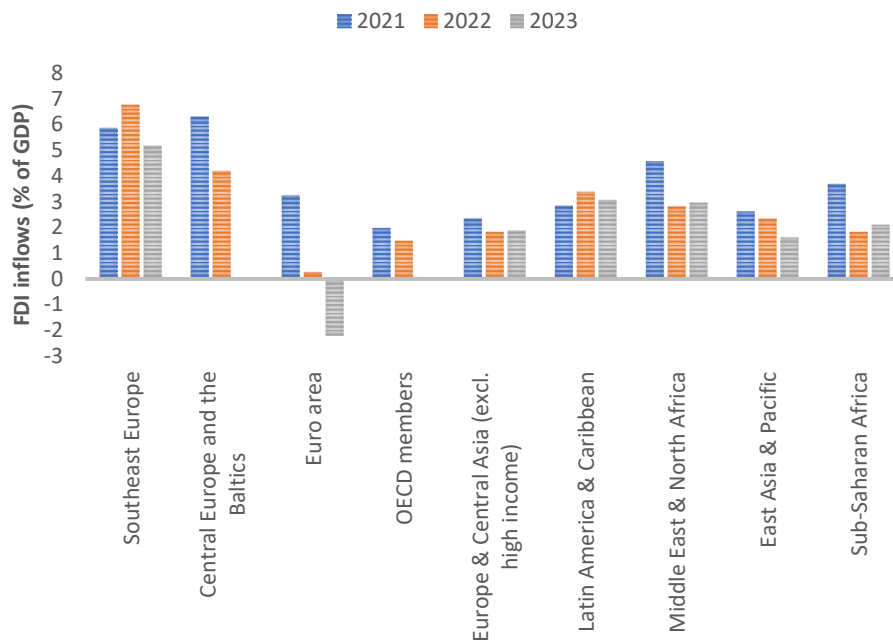
Foreign Direct Investment (FDI) plays a pivotal role in the economic development of Southeast Europe (SEE), acting as a key driver of growth, technological advancement, and industrial restructuring. In developing economies like those in SEE, FDI not only provides much-needed capital but also enhances access to new technologies, management practices, and international markets. These benefits foster diversification and enhance global competitiveness (Mencinger, 2003; Bevan & Estrin, 2004). Moreover, FDI inflows contribute to employment creation, human capital development, and the overall modernization of economic structures. Therefore, attracting foreign investment has become a cornerstone of the economic development strategies in the region, helping SEE countries transition from primarily agrarian economies to more diversified, market-oriented systems (Uvalic, 2003).

The transition from planned to market economies in SEE countries, which began in the early 1990s, reshaped the economic landscape significantly. Under the former socialist regimes, state control over major industries meant that FDI was either non-existent or very limited. As these countries shifted towards market economies, they faced the challenge of attracting foreign capital to replace state-owned enterprises and facilitate the privatization of public assets (Petreski, 2020). In this context, FDI became an essential component of the economic restructuring process, bringing both capital and technology, fostering competition, and integrating SEE economies into the global marketplace (Mehic et al., 2013; Popescu, 2014). FDI inflows thus became critical in enabling market reforms and facilitating the region's integration into the broader European economy.

To attract FDI, many SEE countries have implemented state-aid policies, offering financial incentives such as tax breaks, subsidies, and grants to foreign investors. This has led to a "race to the bottom," where neighboring countries continually offer more favorable terms to capture FDI, making them competitors for the same foreign capital. While these incentives may attract short-term FDI, they also foster competition, increasing interdependence among countries and potentially undermining long-term growth and the development of competitive domestic industries (Dunning & Lundan, 2008).

In the post-pandemic period, SEE has emerged as one of the strongest performers globally in attracting FDI, with inflows consistently exceeding 5% of GDP between 2021 and 2023 (Figure 1). This performance not only outpaces the broader Europe & Central Asia region (excluding high-income countries, hence compared to remaining part of developing Europe and Central Asia), which recorded modest and stagnant FDI levels, but also surpasses global averages observed across the OECD, Euro area, and even East Asia & Pacific. Unlike Central Europe and the Baltics—where FDI inflows have declined steadily—and the Euro area, which recorded net outflows in 2023, SEE has demonstrated resilience and growing investor confidence. These trends suggest that the region's proactive state-aid policies, cost advantages, and geographic proximity to Western markets have positioned it as a particularly attractive destination for foreign investors. As such, SEE's robust FDI inflows reflect not only its successful transition and reform trajectory but also its deepening integration into global value chains.

**Figure 1 – FDI inflows in world regions**



Source: World Development Indicators, World Bank. Southeast Europe is own-created group which takes simple averages.

Nevertheless, FDI in one country can either crowd-in investment in neighboring economies through positive spillovers—such as supply chain integration and knowledge diffusion—or crowd-out investment due to competition for the same foreign capital. This spatial perspective of FDI is particularly relevant in SEE, where countries often compete for the same pool of investment, alongside shared cultural and linguistic ties, with many of them once forming a single federation. Despite its importance, the spatial dimension of FDI has been largely overlooked in the literature, particularly in the context of SEE (Laura and Resmini, 2010; Ascani et al., 2017). Recent empirical applications of spatial econometric models to FDI include analyses at regional levels in Europe (Krisztin & Piribauer, 2021) and how inward FDI affected regional productivity in post-recession Europe (Crescenzi et al. 2023). Pavlínek (2022) reviews FDI in less-developed regions, highlighting the role of absorptive capacity in spatial spillovers.

The objective of this paper is to examine the spatiality of FDI in SEE. Specifically, we aim to disentangle the competitive or complementary dynamics in FDI patterns within the region, offering valuable insights for policymakers seeking to optimize investment strategies and foster sustainable economic development in SEE. The next section presents the methods and data; Section 3 reveals the results; the last section concludes.

## 2. Method and data

Our baseline economic model is the following:

$$\log(FDI_{it}) = \alpha + \sum_{k=1}^K \beta_k X_{it}^k + \sum_{k=1}^K \delta_k Z_{it}^k + \gamma_i + \delta_t + \varepsilon_{it} \quad (1)$$

whereby  $\log(FDI_{it})$  is the log of the FDI as % of GDP of country  $i$  in time  $t$ ; the vector  $X_{it}^k$  contains the sectoral concentration of FDIs and the total FDI stock per country, to account for the attractive power of existing FDI structures. The vector  $Z_{it}^k$  contains the GDP per capita,

human capital indicator (government spending on education in GDP), an indicator of technology investment (share of intellectual property investment in total gross fixed capital formation), average gross wages, trade openness in GDP, GDP growth and institutional quality (Rule of Law index of the World Bank). This is a selection of standard determinants of FDI found in the literature; see e.g. Chakrabarti (2001); Bevan & Estrin (2004); Resmini (2000), among others.

To account for potential spatial dependencies in FDI inflows, we extend the baseline model by incorporating spatial econometric techniques in a panel context. Specifically, we consider three variants: the Spatial Lag Model (SLM), the Spatial Error Model (SEM), and the Spatial Durbin Model (SDM) (Elhorst, 2014; LeSage & Pace, 2009). Recently, Glavaški et al. (2023) apply spatial panel models to analyze tax-FDI competitiveness in EU economies—reinforcing our choice of the SDM and related spatial methods.

The SLM includes a spatially lagged dependent variable to assess whether FDI inflows into one country are influenced by FDI inflows into neighboring countries:

$$\log(FDI_{it}) = \alpha + \rho WFDI_{it} + \sum_{k=1}^K \beta_k X_{it}^k + \sum_{k=1}^K \delta_k Z_{it}^k + \gamma_i + \delta_t + \varepsilon_{it} \quad (2)$$

where  $\rho WFDI_{it}$  represents the weighted FDI inflows in neighboring countries, and  $\rho$  measures the degree of interdependence. The SEM accounts for spatial autocorrelation in the error terms:

$$\log(FDI_{it}) = \alpha + \sum_{k=1}^K \beta_k X_{it}^k + \sum_{k=1}^K \delta_k Z_{it}^k + \gamma_i + \delta_t + \varepsilon_{it} \quad (3)$$

$$\xi_{it} = \lambda W\xi_{it} + \varepsilon_{it} \quad (4)$$

where  $\lambda$  captures spatial correlation in unobserved factors affecting FDI inflows. In the SEM specification,  $\sigma_\varepsilon^2$  represents the variance of the spatially autocorrelated error term. It is reported as a measure of the residual variance after accounting for spatial error dependence. Lastly, the SDM extends the SLM by including spatially lagged explanatory variables to examine whether FDI inflows in neighboring countries influence FDI beyond the direct spillover effect:

$$\log(FDI_{it}) = \alpha + \rho WFDI_{it} + \sum_{k=1}^K \beta_k X_{it}^k + \sum_{k=1}^K \delta_k Z_{it}^k + \Theta WX_{it} + \gamma_i + \delta_t + \varepsilon_{it} \quad (5)$$

where  $WX_{it}$  represents the spatially lagged explanatory variables. The vector  $\theta$  is estimated through the inclusion of spatially lagged covariates ( $Wx$ ), which reflect the effect of neighboring countries' characteristics on a given country's FDI. While  $\theta$  is not labeled explicitly under the SDM specification, its estimates are isolated and reported in the  $Wx$ -only columns as a robustness and interpretative aid. The term  $WX_{it}$  denotes the spatially lagged independent variables, where  $W$  is the spatial weights matrix and  $X_{it}$  is a vector of explanatory variables. For example,  $WX_{1t}$  reflects the average value of variable  $X_{1t}$  in neighboring countries. The weights matrix  $W$  is based on first-order contiguity, implying  $W_{ij} = 1$  if countries  $i$  and  $j$  share a border, and 0 otherwise. The matrix is row-standardized so that weights sum to 1 for each country. By testing for the significance of  $\rho$  (in SLM),  $\lambda$  (in SEM), and  $\Theta$  (in SDM), we can assess whether SEE countries act as competitors or complement each other in attracting FDI.

In this study, the spatial weights matrix is based on a first-order contiguity matrix, where spatial units (countries) are considered neighbors if they share a common border. This approach reflects direct geographic interdependence and is a widely accepted method in the spatial econometric literature.

The inclusion of fixed effects (FE) plays a crucial role in controlling for time-invariant country-specific characteristics that could otherwise bias the results. This way, we account

for structural differences between countries, such as their initial levels of development, which can vary significantly between, for instance, Slovenia and North Macedonia. These differences may shape the attractiveness of a country for foreign investors. Additionally, fixed effects help control for persistent institutional factors, such as corruption levels, regulatory quality, and broader governance structures, which are often deeply ingrained in a country's political and economic framework, but since they remain relatively stable over time, they are absorbed by the FE.

Data are obtained from the Annual and FDI Databases of the Vienna Institute for International Economic Studies. We cover seven countries of Southeast Europe: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, North Macedonia, Serbia and Slovenia. Kosovo and Montenegro are not included due to missing data for some of the series. The period 2014-2023 is covered. The sample size consists of seven countries ( $N = 7$ ) over ten years ( $T = 10$ ), forming a relatively small panel for spatial econometric analysis. While the panel structure helps mitigate some limitations, the low cross-sectional dimension may affect the statistical power and robustness of estimates, especially in more parameter-intensive models like the SDM. This should be kept in mind when interpreting the results. Variables' descriptive statistics is provided in Table A1 in the Appendix.

To provide contextual information for readers less familiar with the SEE region, Table A2 in the Appendix presents key economic and FDI-related indicators for each of the seven countries included in the study. These indicators include population size, GDP per capita, the sector that receives the largest share of FDI, and the main home country of foreign investors. This information is relevant for interpreting spatial patterns and heterogeneity in FDI dynamics across the region.

### 3. Results

The spatial dynamics of FDI reveal strong competitive forces at play, particularly through a "race to the bottom" mechanism, where countries compete to attract investors by offering increasingly generous state aid packages. The models suggest that FDI inflows in one country may reduce inflows in neighboring countries rather than generate positive spillovers. This is evident from the negative and significant coefficients on  $\rho$ , indicating that investors may concentrate their activities in locations where they receive the most favorable incentives rather than distributing their investments more evenly across space (Table 1; all columns except Wx-labelled). Such competition, often driven by tax breaks, subsidies, and regulatory concessions, can create a zero-sum game among countries, particularly in regions where investment incentives play a decisive role in attracting multinational firms.

Meanwhile, the significant and positive  $\lambda$  coefficients suggest substantial spatial autocorrelation in unobserved factors influencing FDI inflows. This implies that country-specific shocks, omitted variables, or institutional features not captured in the model may be spatially correlated across neighboring countries. In other words, unmeasured regional dynamics—such as informal business networks, political alignment, or shared reputational effects—could simultaneously affect FDI decisions in clusters of countries, reinforcing spatial dependence beyond what observable factors can explain. The strong significance of  $\sigma_e^2$  across models – at the bottom of the table - further underscores the presence of substantial unobserved heterogeneity, reinforcing the importance of incorporating spatial dependence when analyzing FDI patterns.

Our observed spatial competition aligns with findings from European regions (Krisztin & Piribauer, 2021; Crescenzi et al., 2023), as well as spillover patterns identified in developing

regions like Vietnam (Hoang et al., 2022) and African hosts of Chinese FDI (Hu et al., 2021), underscoring comparable mechanisms in SEE.

While the results are consistent with a narrative of state-aid-driven competition, it is important to note that the empirical models do not directly incorporate variables measuring state aid policies or specific investment incentives. As such, the "race to the bottom" interpretation should be viewed as a plausible, but inferred, mechanism based on the observed negative spatial spillovers. Future research could strengthen this line of inquiry by incorporating direct measures of national and subnational investment incentives, thereby allowing for more conclusive identification of policy-driven competition dynamics.

FDI's sectoral concentration is positive and highly significant across most specifications, except in the Wx columns, indicating that more specialized economies tend to receive higher FDI inflows. This suggests that investors prefer locations with well-established sectoral strengths rather than diversified economies. Moreover, when additional controls are introduced, particularly in the SDM model, the effect strengthens, implying that other economic or spatial factors mediate this relationship. The total stock of FDI, on the other hand, shows a negative and often significant effect, suggesting potential market saturation or diminishing marginal returns to new FDI in highly invested regions. Interestingly, in the Wx column under FDI-related controls, the coefficient turns positive and significant, hinting that spatially lagged effects or regional FDI clustering may alter the direct relationship between accumulated FDI stock and new inflows.

Among the broader economic controls, GDP per capita remains largely insignificant in the non-Wx specifications, suggesting that wealthier economies do not necessarily attract more FDI in the SEE context. This may reflect the fact that some SEE countries with higher income levels face structural challenges or market saturation that limit further FDI attraction. Spending on education, a proxy for human capital, is also insignificant, indicating that in the SEE region, public investment in education alone may not be sufficient to signal labor force quality to foreign investors. This could reflect a disconnect between education spending and actual outcomes in skills development or labor market relevance, possibly due to inefficiencies in education systems or mismatches between curricula and private sector needs. Similarly, domestic average wages are not significant in the Wx columns, suggesting that wage levels on their own may not influence FDI decisions when only spatially lagged determinants are considered; instead, neighboring countries' wages appear to play a more decisive role, possibly due to regional labor market complementarities or integration.

Conversely, the share of intellectual property products in investment has a consistently negative effect, sometimes significant, implying that FDI may not be particularly drawn to economies with a high concentration of intangible assets in SEE. This finding is especially intriguing given the region's relative stage of economic development, where knowledge-intensive sectors are still emerging and may lack the necessary linkages with foreign investors. Foreign firms might perceive these sectors as less accessible or less profitable due to underdeveloped innovation ecosystems, weaker technology transfer mechanisms, or limited absorptive capacity in local markets.

Trade openness appears to facilitate FDI inflows, with a positive and significant coefficient in some models, reinforcing the notion that economies more integrated into global trade networks are more attractive to foreign investors. This underscores the importance of SEE countries' ongoing efforts to liberalize trade and improve connectivity as part of their integration into European and global markets.

The empirical results reveal a consistently positive and significant association between GDP growth and FDI inflows, underscoring the importance of dynamic economic performance in attracting foreign investors. This aligns with the notion that higher growth signals expanding market opportunities, rising consumer demand, and improving macroeconomic conditions—all key determinants in FDI location decisions. In the context of SEE, where many economies are still undergoing structural transformation, sustained GDP growth may also be perceived as a sign of economic resilience and policy credibility, making these countries more attractive destinations for multinational firms seeking medium- to long-term returns.

In contrast, institutional quality—measured through the Rule of Law indicator—is consistently negative and significant, which may seem counterintuitive given the conventional expectation that stronger institutions foster a more secure and predictable investment climate. However, in the SEE region, this result may reflect a complex interaction between formal institutions and informal investment strategies. It is possible that investors targeting SEE are not primarily motivated by institutional strength but by cost advantages, market access, or state-provided incentives. In some cases, weaker rule of law may even facilitate more flexible or less regulated investment arrangements, particularly in sectors where informal networks or discretionary implementation of rules prevail. Alternatively, this result could suggest that countries with relatively stronger institutions in SEE may also impose stricter regulatory oversight, raising compliance costs and discouraging certain types of efficiency-seeking FDI. These dynamics highlight the importance of distinguishing between different types of FDI and recognizing that institutional quality may play an ambivalent role depending on the broader investment environment and investor motivations.

To clarify the interpretation of key spatial parameters, it is important to distinguish between the roles of  $\rho$  and  $\theta$  in the SDM model (5). The coefficient  $\rho$  reflects the spatial dependence in the outcome variable—FDI inflows—capturing the extent to which FDI in one country is affected by FDI in neighboring countries, and is thus indicative of competitive or complementary spatial dynamics. In contrast,  $\theta$  represents the effect of spatially lagged explanatory variables and reveals how neighbors' characteristics—such as wages, innovation, or human capital—affect domestic FDI inflows. These should not be interpreted as competition effects per se but rather as spillovers in FDI determinants. The Wx-only columns isolate these  $\theta$  effects by including only spatially lagged covariates and omitting  $\rho$ ; while not nested within the SDM, they offer complementary insights into how regional fundamentals shape FDI patterns. This distinction is crucial to avoid conflating the channels of spatial influence in interpreting the results.

The  $\theta$  coefficients in the Wx-labelled columns of Table 1 reveal nuanced spatial spillovers from neighboring countries' characteristics on domestic FDI. As already observed, higher average wages in nearby countries are associated with greater FDI inflows at home, suggesting regional complementarities in labor quality or productivity. In contrast, a higher share of intangible investment and higher levels of development in neighboring economies tend to divert FDI away, indicating competitive pressures in innovation and development. Other regional factors are largely insignificant for the domestic FDIs. These findings highlight that not all spatial spillovers operate in the same direction—some foster regional clustering, while others reflect zero-sum competition for foreign investment.

Table 1 – Results

|                                                      | FE                  | SLM                   | SEM                   | SDM                   | Wx                  |
|------------------------------------------------------|---------------------|-----------------------|-----------------------|-----------------------|---------------------|
| <b>FDI-related controls only</b>                     |                     |                       |                       |                       |                     |
| <b>Log of inverse HH index of FDI</b>                | 0.572***<br>(0.213) | 0.518**<br>(0.211)    | 0.533**<br>(0.229)    | 0.572*<br>(0.309)     | 0.0803<br>(0.213)   |
| <b>Log of the total stock of FDI</b>                 | 0.254<br>(0.626)    | -2.218<br>(1.795)     | -2.269<br>(1.686)     | -2.351*<br>(1.285)    | 0.842**<br>(0.348)  |
| <b>rho</b>                                           |                     | -0.0610***<br>(0.018) |                       | -0.0769**<br>(0.031)  |                     |
| <b>lambda</b>                                        |                     | 0.894***<br>(0.218)   | 0.867***<br>(0.209)   | 0.811***<br>(0.226)   |                     |
| <b>sigma2_e</b>                                      |                     |                       | -0.0878***<br>(0.024) |                       |                     |
| <b>Observations</b>                                  | 70                  | 70                    | 70                    | 70                    | 70                  |
| <b>R-squared</b>                                     | 0.135               | 0.118                 | 0.022                 | 0.132                 | 0.132               |
| <b>Number of ctr</b>                                 | 7                   | 7                     | 7                     | 7                     | 7                   |
| <b>Other controls only</b>                           |                     |                       |                       |                       |                     |
| <b>rho</b>                                           |                     | -0.108***<br>(0.040)  |                       | -0.0993***<br>(0.032) |                     |
| <b>lambda</b>                                        |                     | 0.743***<br>(0.162)   | 0.716***<br>(0.194)   | 0.636***<br>(0.141)   |                     |
| <b>Log of GDP per capita</b>                         | 0.357<br>(2.064)    | 9.595<br>(6.892)      | 7.178<br>(8.236)      | 6.551<br>(5.310)      | -2.251**<br>(1.091) |
| <b>Spending on education (% of GDP)</b>              | -0.0212<br>(0.381)  | 0.0463<br>(0.361)     | 0.0527<br>(0.402)     | 0.251<br>(0.366)      | 0.128<br>(0.339)    |
| <b>Share of intel-lectual property prod. in GFCF</b> | 0.148<br>(0.137)    | 0.103<br>(0.082)      | 0.0205<br>(0.089)     | -0.258**<br>(0.089)   | -0.161*<br>(0.142)  |
| <b>Log of average gross wages</b>                    | 0.698<br>(3.238)    | 1.26<br>(3.486)       | 3.612<br>(4.359)      | 3.15<br>(2.623)       | 6.326***<br>(1.750) |
| <b>Trade openness in GDP</b>                         | 0.016<br>(0.012)    | 0.0240*<br>(0.013)    | 0.0196*<br>(0.012)    | 0.0238**<br>(0.010)   | 0.00171<br>(0.009)  |
| <b>GDP growth</b>                                    | 0.120***<br>(0.044) | 0.261***<br>(0.086)   | 0.279***<br>(0.102)   | 0.247***<br>(0.086)   | 0.0335<br>(0.029)   |
| <b>Institutional quality (Rule of law)</b>           | -4.206*<br>(2.145)  | -6.282***<br>(1.067)  | -5.905***<br>(0.990)  | -5.585***<br>(0.693)  | -0.958<br>(1.331)   |
| <b>sigma2_e</b>                                      |                     |                       | -0.160***<br>(0.058)  |                       |                     |
| <b>Observations</b>                                  | 70                  | 70                    | 70                    | 70                    | 70                  |
| <b>R-squared</b>                                     | 0.264               | 0.146                 | 0                     | 0.064                 | 0.064               |
| <b>Number of ctr</b>                                 | 7                   | 7                     | 7                     | 7                     | 7                   |
| <b>All controls</b>                                  |                     |                       |                       |                       |                     |
| <b>Log of inverse HH index of FDI</b>                | 0.555**<br>(0.215)  | 0.634***<br>(0.212)   | 0.649***<br>(0.236)   | 0.635**<br>(0.308)    | -0.0545<br>(0.205)  |
| <b>Log of the total stock of FDI</b>                 | -1.807<br>(1.249)   | -0.677<br>(1.589)     | -0.456<br>(1.495)     | -0.9<br>(1.369)       | -0.694<br>(2.489)   |
| <b>rho</b>                                           |                     | -0.0706**<br>(0.034)  |                       | -0.0465<br>(0.033)    |                     |
| <b>lambda</b>                                        |                     | 0.642***              | 0.634***              | 0.535***              |                     |

|                                                      |          |           |           |           |         |
|------------------------------------------------------|----------|-----------|-----------|-----------|---------|
|                                                      |          | (0.103)   | (0.136)   | (0.095)   |         |
| <b>Log of GDP per capita</b>                         | 2.716    | 8.831     | 7.365     | 7.727     | -1.315  |
|                                                      | (2.470)  | (8.072)   | (9.835)   | (6.307)   | (2.025) |
| <b>Spending on education (% of GDP)</b>              | 0.118    | 0.284     | 0.316     | 0.6       | -0.0106 |
|                                                      | (0.399)  | (0.440)   | (0.473)   | (0.528)   | (0.280) |
| <b>Share of intel-lectual property prod. in GFCF</b> | 0.0582   | 0.0629    | 0.0134    | -0.406*** | -0.107* |
|                                                      | (0.136)  | (0.111)   | (0.123)   | (0.094)   | (0.076) |
| <b>Log of average gross wages</b>                    | -0.333   | -0.129    | 1.244     | -0.145    | 7.064** |
|                                                      | (3.114)  | (4.273)   | (5.156)   | (3.751)   | (3.528) |
| <b>Trade openness in GDP</b>                         | 0.0156   | 0.0207    | 0.014     | 0.0257*** | 0.00515 |
|                                                      | (0.012)  | (0.015)   | (0.014)   | (0.009)   | (0.009) |
| <b>GDP growth</b>                                    | 0.104**  | 0.250***  | 0.246**   | 0.231**   | 0.04    |
|                                                      | (0.042)  | (0.094)   | (0.104)   | (0.094)   | (0.030) |
| <b>Institutional quality (Rule of law)</b>           | -4.522** | -6.812*** | -6.468*** | -5.856*** | -0.99   |
|                                                      | (2.031)  | (1.793)   | (1.614)   | (1.629)   | (1.415) |
| <b>sigma2_e</b>                                      |          |           | -0.130**  |           |         |
|                                                      |          |           | (0.055)   |           |         |
| <b>Observations</b>                                  | 70       | 70        | 70        | 70        | 70      |
| <b>R-squared</b>                                     | 0.366    | 0.127     | 0.01      | 0.136     | 0.136   |
| <b>Number of ctr</b>                                 | 7        | 7         | 7         | 7         | 7       |

**Source: Author's calculations.**

*Note: Fixed effects included. Standard errors in parentheses. Standard errors robust to heteroskedasticity. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$*

## 4. Conclusions

This study highlights the significant role of spatial dynamics in shaping FDI inflows in Southeast Europe, revealing strong competitive forces where investment in one country often reduces inflows in neighboring economies. This underscores a zero-sum dynamic driven by state aid competition and spatial interdependence. Sectoral specialization and broader economic conditions also influence FDI patterns but are often overshadowed by these competitive spatial effects. From a policy perspective, these findings call for greater regional coordination in FDI attraction strategies. Instead of competing through incentives, SEE countries should collaborate to minimize harmful competition, promote complementary investments, and foster balanced, sustainable regional development.

Beyond the inference regarding state aid competition, the study faces certain limitations. The relatively small sample size may affect the robustness of estimates, particularly in more complex spatial models. Moreover, the analysis is limited to national-level data, which may mask important subnational dynamics in FDI attraction. Future research could address these limitations by expanding the geographic or temporal scope, incorporating regional-level data, and exploring firm-level determinants to enrich the understanding of spatial investment patterns.

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## Appendix

**Table 1 – Descriptive statistics**

| <b>Variable</b>                                                                         | <b>Obs</b> | <b>Mean</b> | <b>Std.Dev.</b> | <b>Min</b> | <b>Max</b> |
|-----------------------------------------------------------------------------------------|------------|-------------|-----------------|------------|------------|
| <b>Log of FDI as % of GDP</b>                                                           | 70         | 4.25        | 2.27            | 0.40       | 9.30       |
| <b>Log of sectoral concentration of FDIs</b>                                            | 70         | 1.30        | 0.77            | -2.31      | 2.12       |
| <b>Log of total FDI stock</b>                                                           | 70         | 9.66        | 0.86            | 8.17       | 10.92      |
| <b>Log of GDP per capita</b>                                                            | 70         | 9.59        | 0.39            | 9.00       | 10.46      |
| <b>Government spending on education in GDP</b>                                          | 70         | 3.94        | 0.71            | 2.74       | 5.48       |
| <b>Share of intellectual property investment in total gross fixed capital formation</b> | 70         | 8.83        | 4.72            | 0.30       | 16.80      |
| <b>Log of average gross wages</b>                                                       | 70         | 4.98        | 0.25            | 4.62       | 5.71       |
| <b>Trade openness in GDP</b>                                                            | 70         | 100.49      | 37.83           | 52.70      | 233.30     |
| <b>GDP growth</b>                                                                       | 70         | 2.83        | 3.18            | -8.31      | 12.63      |
| <b>Rule of Law index</b>                                                                | 70         | 0.04        | 0.44            | -0.43      | 1.09       |

**Table 2 – Few indicators for the countries of SEE region**

| <b>Country</b>                | <b>Population</b> | <b>GDP per capita, PPP</b> | <b>Top FDI Sector</b>                   | <b>Main Investor Country</b> |
|-------------------------------|-------------------|----------------------------|-----------------------------------------|------------------------------|
| <b>Albania</b>                | 2,714,617         | 18,920                     | Energy (hydropower, oil)                | Netherlands                  |
| <b>Bosnia and Herzegovina</b> | 3,164,253         | 20,429                     | Manufacturing (especially metal)        | Austria                      |
| <b>Bulgaria</b>               | 6,444,366         | 34,083                     | Manufacturing (automotive, electronics) | Netherlands                  |
| <b>Croatia</b>                | 3,866,300         | 42,631                     | Finance and insurance                   | Austria                      |
| <b>North Macedonia</b>        | 1,792,179         | 24,464                     | Manufacturing (automotive components)   | Germany                      |
| <b>Serbia</b>                 | 6,587,202         | 26,884                     | Manufacturing (automotive, machinery)   | Germany                      |
| <b>Slovenia</b>               | 2,126,324         | 48,496                     | Finance and manufacturing               | Austria                      |

*Source: Authors' compilation based on data from the World Bank (World Development Indicators), UNCTAD World Investment Report (2023), national central banks and investment promotion agencies (IPA) of SEE countries. Data refer to 2024.*