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## AN ANALYSIS OF THE IMPACT OF SELECTED PREDICTORS FOR CROSS-BORDER M&A ACTIVITY WITHIN THE EUROPEAN AREA \*

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**Abstract.** This paper provides a comprehensive overview of European M&A activity from 1998-2021. It examines trends and drivers of cross-border mergers and acquisitions, examining how European integration has affected M&A activity and the critical characteristics of M&As in the European Area. The ambition is to contribute to the existing literature on M&A activity in Europe. The paper aims to analyze the impact of advancing integration processes in Europe through our selected predictors on capital reallocation through cross-border M&As as a whole and also separately in the manufacturing sector and the service sector in the examined period in the countries of the European area through a generalized regression model and identify peculiarities in both industries. To achieve this goal, we investigated a new dataset of all completed M&A between 1998 and 2021 in 19 sources and 28 target countries of the European Area.

**Keywords:** European Union; European Monetary Union; cross-border mergers; cross-border acquisitions; manufacturing sector, service sector

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## **1. Introduction**

Since their explosion in the mid-1990s, mergers and acquisitions (M&As) have become a global phenomenon with growing prevalence and now account for more than 76% of foreign direct investment (OECD, 2022). Essentially, cross-border M&As are tools of trade for companies looking to expand their operations overseas (abroad). They are an essential source of value creation and provide the means to access new jurisdictions and take advantage of different economic, market and consumer dynamics. Thus, they provide social and economic benefits (Stefko et al., 2022). They are also critical for the sustainable and profitable growth of corporations, even today, for their core business activities and future value-generating activities. According to Zhao (2021), the worldwide trend has become the growth of cross-border cooperation aimed at sustainability, both in terms of traditional mergers and acquisitions, as well as non-traditional ones such as partnerships, alliances and new ecosystems. The pursuit of sustainability and the fight against climate change, using alternative energy sources and raw materials, transforming the global supply chain, etc., are becoming highly topical, especially in the manufacturing and energy sectors (Kelemen et al. 2019; Simionescu et al. 2021). In their strategies, international organizations appeal to sustainability as a critical element for the future success of industries through various initiatives and support programs (Gavurova et al. 2019).

This naturally subsequently leads global players to a growing interest in mergers, acquisitions, alliances and initiatives that support the initiative of a sustainable world, new technologies and products and increase the attractiveness of individual industries for investors. Consumers also play an equally important role. Their demands for ESG-friendly products force industries to change raw materials and production processes. ESG factors will continue to integrate increasingly into the overall M&A deal sourcing. The transaction execution process, as well as the post-deal management and M&A itself, is an essential tool to create sustainable value for corporates and overall economic recovery through a green path (Zhao, 2021; Hasheminasab et al., 2022; Wang et al., 2022a).

The vast majority of attention is on cross-border deal research from several perspectives, such as motives, strategic issues, performance, etc. This paper examines trends and drivers of cross-border mergers and acquisitions, how European integration has affected M&A activity and the key characteristics of M&A in the European Area. The ambition is to contribute to the extant literature on M&A activity in Europe. The current wave of mergers and acquisitions in Europe, starting at the beginning of the 21st century, has some unique characteristics. The development of M&A deals is particularly noteworthy in terms of the deepening of the single integrated market, a more homogeneous regulatory framework, the expansion of the European Union, the creation of the European Monetary Union, changes in the European business environment, size and geographical dispersion. The introduction of the shared euro currency, liberalization of trade and investment regimes, the deregulation of the services sector, technological innovations, privatization, industry consolidation, globalization of industry and changing the worldwide industrial structure as well as the rapid development of financial markets and an increase in liquidity reflected in a higher proportion of cross-border deals in the European area in the last two decades.

The paper aims to analyze the impact of advancing integration processes in Europe through our selected predictors on capital reallocation through cross-border M&As as a whole and also separately in the manufacturing sector and the service sector in the examined period in the countries of the European area through a generalized regression model and identify peculiarities in both industries. To achieve this goal, we investigated a new dataset of all completed M&A between 1998 and 2021.

## 2. Theoretical framework and hypothesis development

This paper is connected to the literature on the determinants of cross-border M&As. Among the most cited early empirical studies of aggregate cross-border M&As are Rossi and Volpin (2004), who focused on differences in laws and regulations across countries, Di Giovanni (2005), who used the gravity model framework to uncover the determinants of the size and direction of international M&A flows, Bris and Cabolis (2008), who constructed measures of the change in investor protection. Head and Ries (2008) developed a control-based model of FDI. Changes in the quality of institutional environments were the subject of research by Bekaert et al. (2007) and Papaioannou (2009). Moreover, depending on the countries, the determinants of the quality of environments, including legal, economic and political environments (Dvorsky et al., 2021a; Gavurova et al. 2021) differ (Civelek et al., 2020) since governments can impose various regulations (Civelek & Krajčík, 2022). Innovative solutions applied by governments can provide some solutions for the problems that stem from those institutional environments. Those positive environmental changes also contribute positively to businesses (Dvorsky et al., 2021b), such as increasing their competitiveness which cause better financial performance and communities (Stefko et al., 2019; Gavurova et al. 2018, 2020). On the other hand, in case of unstable conditions in legal conditions, businesses face more impediments to development (Stefko et al., 2021). The aim of the research of the authors Coeurdacier, De Santis and Aviat (2009) was to assess the impact of the European Union and the European Monetary Union on capital reallocation through cross-border mergers and acquisitions within the member countries of these integration groups (Wang et al., 2022b). Their effort was to confirm or refute the theoretical arguments of Neary (2007), namely that trade liberalization and deeper integration of the European market correlate with an increase in the number of realized cross-border mergers and acquisitions. Moschieri et al. (2014) looked at how the harmonization of European regulations has affected M&A activity and the main characteristics of M&As in Europe. Barattieri, Borchert and Mattoo (2014) presented evidence on the determinants of cross-border mergers and acquisitions in services sectors; Skare and Riberio Soriano (2022), Chen et al. (2022) continued similar studies. McCarthy and Dolfsma (2015) examined the impact of the Euro on the number, size, performance and regional spread of European mergers and acquisitions. This paper is a continuous extension of the research presented in our previous studies Hečková, et al. (2016), Hečková, et al. (2018), and Štefko et al. (2022).

## 3. Methodology

The presented The data preparation process started with the extraction of 117 561 data on the number and volume of realized cross-border mergers and acquisitions with a minimum value of one transaction for 1 million euros in 19 source and 28 target countries of the European area and the values of the other predictors selected by us. We use a comprehensive dataset on global mergers and acquisitions from Bureau van Dijk Zephyr and Orbis database (Bureau van Dijk, 2022), spanning 1998-2021. The dataset consists of individual cross-border equity deals between the home country of the acquirer and the host country where the target firm is domiciled. The source of other statistical data used is Eurostat (European Commission, 2022). The basis for the modelling was the scientific studies of Head and Ries (2008), Coeurdacier, De Santis and Aviat (2009), McFadden's discrete choice (McFadden, 1974) and the study of Hečková, et al. (Hečková et al., 2016). The extreme value of the capitalization volume of 204.73 million Euro was excluded from the research set between the United Kingdom as a source country and Germany as a target country implemented in 2000.

$M\&A_{ij,s,t}$  represents the total value of assets acquired through cross-border mergers and acquisitions by source country  $i$  in target country  $j$  in sector  $s$  and at time  $t$ . An important predictor that affects the volume of cross-border mergers and acquisitions can be considered the value of the gross domestic product of the source ( $i$ ) and target country ( $j$ ) in sectors  $s$  and at time  $t$  ( $GDP_{j,s,t}$ ,  $GDP_{i,s,t}$ ). Using the logarithm of their values eliminates their elasticity and does not affect the overall result. The following variables were further included in the model: the

proximity of the countries, the specificity of their culture and the relatedness of the language. Proximity of the source and target countries is quantified by the distance of their capitals denoted as  $distance_{ij}$ , the sharing of a common border is quantified by the binary variable  $border_{ij}$ , which takes the value 1 in the positive case and the value 0 in the negative case. The binary variable  $common\ language_{ij}$  assumes the value 1 in the case of the same official language and the value 0 otherwise and was considered to quantify the influence of language relatedness on the volume of cross-border assets. The goal is to estimate the weights of the considered predictors on the total value of assets acquired through cross-border mergers and acquisitions  $M\&A_{ij,st}$  by source country  $i$  in target country  $j$  in sector  $s$  and at time  $t$ . The other predictors in the considered model represent dummy variables that relate to the membership of the source and target countries in the European Union and in the European Monetary Union, namely  $EU_{i,t}EU_{j,t}$  takes the value 1 if the source country  $i$  as well as the target country  $j$  was a member of the European Union at time  $t$ , otherwise it takes the value 0. The variable  $EMU_{i,t}EMU_{j,t}$  take the value 1, if the source country  $i$  as well as the target country  $j$  was a member of the European Monetary Union at time  $t$ , otherwise it takes the value 0.

Analysis of the effect of selected predictors and estimation of their regression weights on the total value of assets acquired through cross-border mergers and acquisitions  $M\&A_{ij,st}$  by source country  $i$  in target country  $j$  in sector  $s$  and time  $t$  is carried out using a regression equation in the form:

$$\log(M\&A_{ij,st}) = \beta_0 + \beta_1 \cdot \log(HDP_{i,s,t}) + \beta_2 \cdot \log(HDP_{j,s,t}) + \beta_3 \cdot \log(Distance_{i,j}) + \beta_4 \cdot Border_{i,j} + \beta_5 \cdot ComLang_{i,j} + \beta_6 \cdot (EU_{i,t}EU_{j,t}) + \beta_7 \cdot (EMU_{i,t}EMU_{j,t}) \quad (1)$$

For the analysis itself, a generalized linear regression model with a gamma distribution and a logarithmic linking function was chosen. Generalized regression models, both linear and non-linear, cover a wide range of statistical methods with different types of variables that are widely used in economics and management fields. As part of the analysis, several regression models were tested, and their results were comparable regarding the significance of the regression coefficients.

The generalized linear regression model with normal distribution and linking function ident was identical to the selected model in terms of the significance of the predictors and their effect. A similar result was also achieved with the classical linear model by forward stepwise regression analysis with the achieved level of significance  $p = 0.000$  for Fisher's F-test, and with a value of the adjusted index of determination at the level of 0.883. The simulation of the model by expanding the interactions of individual predictors no longer led to a better result in terms of quality.

### 3. Results

The A basic analysis of the created database on executed cross-border mergers and acquisitions transactions in the period 1998 to 2021 from the point of view of the source country ( $i$ ) and the target country ( $j$ ) shows that the largest number of cross-border transactions was directed from the United Kingdom with a total number of 1513 and a total financial volume €58,871 million. The largest financial volume came from France, namely €80,666 million, with a total of 917 cross-border mergers and acquisitions. France implemented cross-border mergers and acquisitions primarily in Spain (158; €18,241 million), the Netherlands (102; €11,881 million), Italy (118; €10,248 million), Great Britain (189; €9,609 million), Germany (92; €8,882 million) and Belgium (81; €7,628 million).

Great Britain directed its investments primarily to Germany (332; €12,806 million), France (369; €12,319 million), the Netherlands (212; €8,634 million), Spain (120; €5,876 million) and Italy (128 €5,748 million). Another essential source ( $i$ ) countries of cross-border mergers and acquisitions are the Netherlands with a total of

717 cross-border mergers and acquisitions and a total volume of €49,779 million, and Germany, with a total of 660 cross-border mergers and acquisitions and a total financial volume of €44,786 million. From the point of view of the target country ( $j$ ), the most important country for cross-border mergers and acquisitions is France, with a total financial volume of €56,250 million. In France, cross-border transactions were carried out primarily from Great Britain (369; €12,319 million), Spain (77; €7,570 million), Belgium (97; €6,902 million), Germany (89; €6,825 million) and the Netherlands (63; €6,052 million). The second most important country in terms of completed cross-border mergers and acquisitions is Germany, with a total financial volume of €54,951 million (905). In Germany as a target country, mergers and acquisitions were carried out primarily from Great Britain (322; €12,806 million), France (92; €8,882 million), Italy (80; €5,984 million), the Netherlands (82; €5,653 million) and Luxembourg (51; €5,140 million). The third most important country in realized cross-border transactions is Spain, with a total volume of funds of €48,091 million (616). In Spain, as a target country, mergers and acquisitions were carried out primarily from France (158; €18,241 million), Italy (91; €7,590 million), Great Britain (120; €5,876 million) and the Netherlands (50; €4,315 million). Other target countries ( $j$ ) in terms of the total volume of cross-border mergers and acquisitions are the Netherlands (626; €46,966 million), Italy (568; €39,849 million), Great Britain (689; €34,133 million), Portugal (250; €22,342 million) and Belgium (322; €21,871 million).

**Table 1.** Estimation of regression model parameters for the entire data set (N=7455)

<i>y - Parameter estimates; Distribution : GAMMA Link function: LOG</i>							
<i>Effect</i>	<i>Level of Effect</i>	<i>Estimate</i>	<i>Standard Error</i>	<i>Wald Stat.</i>	<i>Lower CL 95.0%</i>	<i>Upper CL 95.0%</i>	<i>P</i>
<i>Intercept</i>		1.28735	0.036211	1263.856	1.21637	1.35832	0.000000*
$\log (GDP_{i,s,t})$		0.04018	0.004300	87.344	0.03176	0.04861	0.000000*
$\log (GDP_{j,s,t})$		0.03114	0.003738	69.422	0.02382	0.03847	0.000000*
$\log (Distance_{i,j})$		-0.04106	0.011058	13.789	-0.06273	-0.01939	0.000205*
<i>Border<sub>i,j</sub></i>	0	0.00418	0.004129	1.027	-0.00391	0.01228	0.310927
<i>ComLang<sub>i,j</sub></i>	0	0.00859	0.006306	1.854	-0.00377	0.02095	0.173305
<i>EU<sub>i,t</sub> EU<sub>j,t</sub></i>	0	0.03357	0.006145	29.852	0.02153	0.04562	0.000000*
<i>EMU<sub>i,t</sub> EMU<sub>j,t</sub></i>	0	-0.04391	0.003623	146.886	-0.05102	-0.03681	0.000000*

$y = \log(M\&A_{ij,s,t})$ , \* - significant at the significance level  $\alpha = 0.05$

Source: own sourcing

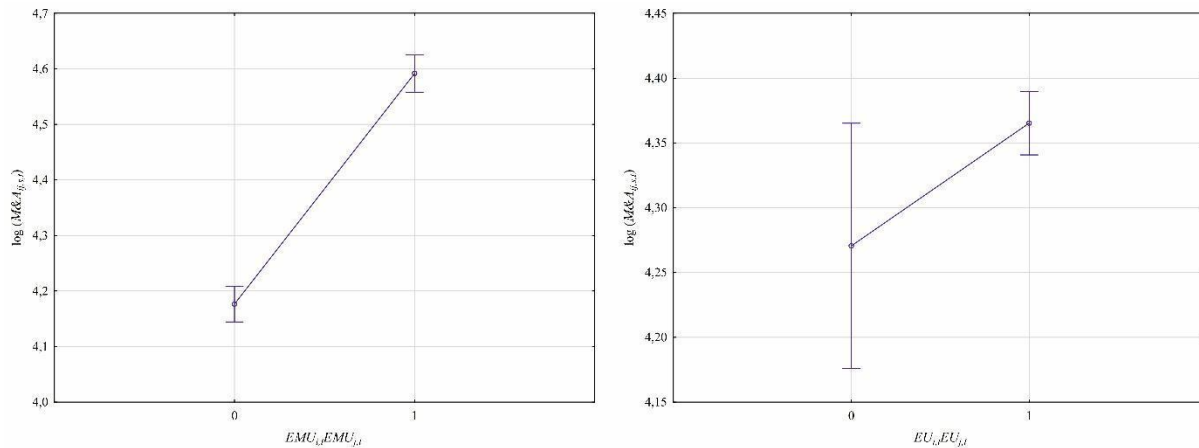
Table 1 presents the basic analysis of the regression model (1) for the entire research set, which contains 7455 data on cross-border mergers and acquisitions in the evaluated period of 1998 to 2021. The above analysis shows that from the point of view of the interval variables of the model (1) for the conditional change in the value of assets acquired through cross-border mergers and acquisitions by the source country  $i$  in the target country  $j$  in sector  $s$  and at time  $t$  ( $M\&A_{ij,s,t}$ ) has a significant effect at the selected level of significance  $\alpha = 0.05$  especially the GDP of the source country ( $GDP_{i,s,t}$ ). Here it can be observed that an increase in GDP of the source country by 1% creates an increase in the conditional value of cross-border assets by 4.018%. The second most significant continuous predictor with a positive effect on the conditional change of the dependent variable  $y$  is GDP in the target country ( $GDP_{j,s,t}$ ). Here it can be observed that for a 1% increase in the value of GDP in the destination country, the total value of assets acquired through cross-border transactions will increase by 3.114%. From the point of view of predictors in the interval scale, the distance between the main cities of the source and target countries ( $Distance_{i,j}$ ), has a negative effect, where a 1% increase in this distance results in a decrease of the



dependent variable  $M\&A_{ij,s,t}$  by 4.106 %. It follows from Table 1 that the change in the value of assets acquired through cross-border mergers and acquisitions at the chosen significance level  $\alpha = 0.05$  is not affected by the variable  $Border_{i,j}$  a  $ComLang_{i,j}$ , the existence of a common border and the existence of a common communication language. From the point of view of the significance of the contribution to the model, the most significant variable is  $EMU_{i,t}EMU_{j,t}$ , which takes on the value of 1 if the source country  $i$  as well as the target country  $j$  was a member of the European Monetary Union at time  $t$ . In the case that both countries were members of the European Monetary Union at time  $t$  ( $N = 3273$ ), when the other input variables are fixed at their mean values, the marginal value of the dependent variable is at the level of  $\text{€}39057.875 \pm \text{€}3140.264$ , and vice versa if the variable  $EMU_{i,t}EMU_{j,t}$  acquired at time  $t$  the value 0 ( $N=4182$ ) is the marginal value of the dependent variable  $M\&A_{ij,s,t}$  at the level of  $\text{€}15017.049 \pm \text{€}1146.508$ .

The second significant dummy variable in the regression model (1) is the membership of the source ( $i$ ) and target ( $j$ ) countries in the European Union ( $EU_{i,t}EU_{j,t}$ ). The marginal mean value of the volume of cross-border assets estimated by the model if both countries, source and target, are members of the European Union ( $N = 6951$ ) is  $\text{€}23,186,709 \pm \text{€}1,342,428$ , and for the opposite case

( $EU_{i,t}EU_{j,t} = 0$ ) the marginal mean value of the volume is cross-border assets  $\text{€}18644.886 \pm \text{€}4537.019$ . A graphic display of the influence of both significant dummy variables is presented in Figure 1.



**Figure 1.** The effect of dummy variables on the change in the total value of assets purchased through mergers and acquisitions  $M\&A_{ij,s,t}$  for the entire research set

Source: own sourcing

In the next step, separate regression models were implemented for the service sector and the manufacturing sector. These separate regression models are based on the original model (1). In terms of homogeneity and distribution of quantitative variables and obtained residuals, both investigated database subsets were a better input for regression analysis than the entire data set and showed better results of regression diagnostics.

The results of the regression analysis for the examined service sector, presented by the essential characteristics of the regression model, are shown in Table 2.

**Table 2.** Estimation of regression model parameters for the service sector (N=4950)

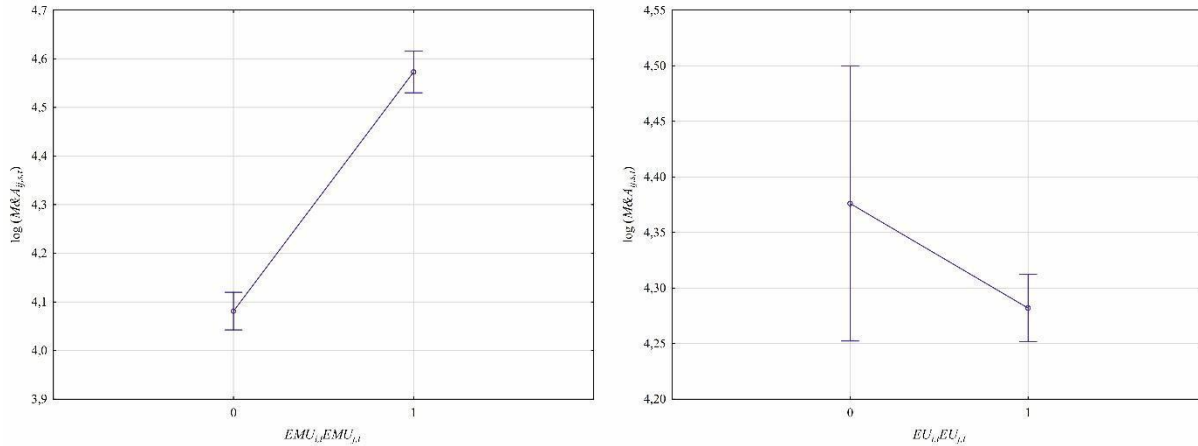
<i>y</i> - Parameter estimates Distribution : GAMMA Link function: LOG							
<i>Effect</i>	<i>Level of Effect</i>	<i>Estimate</i>	<i>Standard Error</i>	<i>Wald Stat.</i>	<i>Lower CL 95,0%</i>	<i>Upper CL 95,0%</i>	<i>p</i>
<i>Intercept</i>		1.26961	0.044370	818.7744	1.18265	1.35657	0.000000*
$\log (GDP_{i,s,t})$		0.05479	0.005302	106.7854	0.04440	0.06518	0.000000*
$\log (GDP_{j,s,t})$		0.03376	0.004449	57.5952	0.02504	0.04248	0.000000*
$\log (Distance_{i,j})$		-0.05640	0.013314	17.9430	-0.08249	-0.03030	0.000023*
<i>Border<sub>i,j</sub></i>	0	0.00349	0.005270	0.4390	-0.00684	0.01382	0.507621
<i>ComLang<sub>i,j</sub></i>	0	0.00372	0.007515	0.2453	-0.01101	0.01845	0.620433
<i>EU<sub>i,t</sub> EU<sub>j,t</sub></i>	0	0.06406	0.008066	63.0747	0.04825	0.07987	0.000000*
<i>EMU<sub>i,t</sub> EMU<sub>j,t</sub></i>	0	-0.05268	0.004578	132.4246	-0.06165	-0.04371	0.000000*

$y - \log(M\&A_{ij,s,t})$ , \* - significant at the significance level  $\alpha = 0.05$

Source: own sourcing

Similar results as for the entire research set (Table 1) are also observed for the service sector. From the above analysis, it follows that the point of view of the interval variables of the model (1) for the service sector on the conditional change in the value of assets acquired through cross-border mergers and acquisitions by source country  $i$  in target country  $j$  in sector  $s$  and at time  $t$  ( $M\&A_{ij,s,t}$ ) has a significant impact at the selected level significance  $\alpha = 0.05$ , primarily GDP of the source country ( $GDP_{i,s,t}$ ). Here it can be observed that an increase in GDP of the source country by 1% creates an increase in the conditional value of cross-border assets by 5.479%. The second most significant continuous predictor with a positive effect on the conditional change of the dependent variable  $y$  is GDP in the target country ( $GDP_{j,s,t}$ ). Here it can be observed that for a 1% increase in the value of GDP in the target country, the total value of assets acquired through cross-border mergers and acquisitions will increase by 3.376%. From the point of view of predictors in the interval scale, the distance between the main cities of the source and target countries ( $Distance_{i,j}$ ), has a negative effect, where a 1% increase in this distance results in a decrease of the dependent variable  $M\&A_{ij,st}$  by 5,640 %. It follows from Table 2 that the variable  $Border_{i,j}$  and  $ComLang_{i,j}$ , the existence of a common border and the existence of a common communication language, do not affect the change in the value of assets acquired through cross-border mergers and acquisitions at the selected level of significance  $\alpha = 0.05$ , as in the analysis of the entire research set . From the point of view of the significance of the contribution to the model, the most significant variable is  $EMU_{i,t}EMU_{j,t}$ , which takes on the value of 1 if the source country  $i$  as well as the target country  $j$  was a member of the European Monetary Union at time  $t$ . In the case that both countries were members of the European Monetary Union at time  $t$  ( $N = 2077$ ), when fixing the other input variables at their mean values, the marginal value of the dependent variable is at the level of  $\text{€}37,414,990 \pm \text{€}3,858,460$ , and vice versa if the variable  $EMU_{i,t}EMU_{j,t}$  acquired at time  $t$  the value 0 ( $N=2873$ ) is the marginal value of the dependent variable  $M\&A_{ij,s,t}$  at the level of  $\text{€}12049.349 \pm \text{€}1124.116$ . The second significant dummy variable in regression model (1) is the membership of the source ( $i$ ) and target ( $j$ ) countries in the European Union ( $EU_{i,t}EU_{j,t}$ ). The marginal mean value of the volume of cross-border assets estimated by the model if both countries, source and target, are members of the European Union ( $N = 4664$ ) is  $\text{€}19,142,826 \pm \text{€}1,387,294$ , and for the opposite case ( $EU_{i,t}EU_{j,t} = 0$ ) the marginal mean value

of the volume of cross-border assets is assets €23,770,690 ± €7,840,943. Here we observe the opposite trend compared to the entire research set as documented in Figure 2.



**Figure 2.** The effect of dummy variables on the change in the total value of assets purchased through mergers and acquisitions  $M\&A_{ij,s,t}$  for the service sector  
Source: own sourcing

The last analyzed subset is the manufacturing sector. The results of the regression analysis for the studied production sector, presented by the basic characteristics of the regression model, are shown in Table 3.

**Table 3.** Estimation of regression model parameters for the manufacturing sector (N=2505)

<i>y - Parameter estimates Distribution : GAMMA Link function: LOG</i>							
<i>Effect</i>	<i>Level of Effect</i>	<i>Estimate</i>	<i>Standard Error</i>	<i>Wald Stat.</i>	<i>Lower CL 95,0%</i>	<i>Upper CL 95,0%</i>	<i>p</i>
<i>Intercept</i>		1.31471	0.061712	453.8526	1.19375	1.43566	0.000000*
$\log(GDP_{i,s,t})$		0.02641	0.007390	12.7739	0.01193	0.04090	0.000351*
$\log(GDP_{j,s,t})$		0.02049	0.006823	9.0174	0.00712	0.03386	0.002674*
$\log(Distance_{i,j})$		-0.01807	0.019350	0.8719	-0.05599	0.01986	0.350427
<i>Border<sub>i,j</sub></i>	0	0.01189	0.006499	3.3500	-0.00084	0.02463	0.067205
<i>ComLang<sub>i,j</sub></i>	0	0.00460	0.011419	0.1622	-0.01778	0.02698	0.687142
$EU_{i,t} EU_{j,t}$	0	-0.02213	0.009367	5.5796	-0.04049	-0.00377	0.018171*
$EMU_{i,t} EMU_{j,t}$	0	-0.02195	0.005793	14.3544	-0.03330	-0.01059	0.000151*

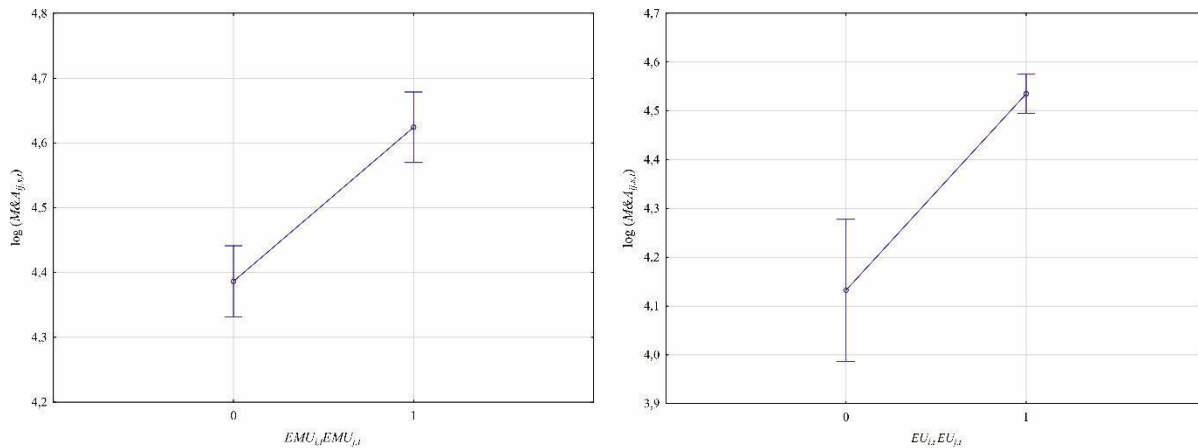
$y - \log(M\&A_{ij,s,t})$ , \* - significant at the significance level  $\alpha = 0.05$

Source: own sourcing

The results of the regression analysis for the manufacturing sector (Table 3) show a certain change in the influence of the examined dependent variables on the value of assets acquired through cross-border mergers and acquisitions by source country  $i$  in target country  $j$  in sector  $s$  and at time  $t$  ( $M\&A_{ij,s,t}$ ). First of all, we observe the statistical insignificance of the influence of the distance between the main cities of the source and target countries ( $Distance_{i,j}$ ) at the chosen level of significance  $\alpha = 0.05$ , in contrast to the entire research set and the service sector. On the other hand, we observe almost a half smaller influence of the other significant interval variables on



the conditional change in the value of the investigated parameter ( $M\&A_{ij,s,t}$ ). For GDP of the source country ( $GDP_{i,s,t}$ ). Here it can be observed that an increase in GDP of the source country by 1% creates growth in the conditional value of cross-border assets by 2.641% and for GDP in the target country ( $GDP_{j,s,t}$ ) it can be observed that with a 1% increase in the value of GDP in the target country, the total value will increase assets acquired through cross-border mergers and acquisitions by 2.049%. Compared to the service sector, these values represent a decrease of 51.798% for the GDP of the source country and a decrease of 39.307% in the GDP of the target country. From the point of view of the significance of the contribution to the model, the most significant variable is  $EMU_{i,t}EMU_{j,t}$ , which takes on the value of 1 if the source country  $i$  as well as the target country  $j$  was a member of the European Monetary Union at time  $t$ . In the case that both countries were members of the European Monetary Union at time  $t$  ( $N = 1196$ ), when the other input variables are fixed at their mean values, the marginal value of the dependent variable is at the level of  $\text{€}42084.207 \pm \text{€}5627.663$ , and vice versa if the variable  $EMU_{i,t}EMU_{j,t}$  acquired at time  $t$  the value 0 ( $N=1309$ ) is the marginal value of the dependent variable  $M\&A_{ij,s,t}$  at the level of  $\text{€}24347.487 \pm \text{€}3279.772$ . The second significant dummy variable in the regression model (1) is the membership of the source ( $i$ ) and destination ( $j$ ) countries in the European Union ( $EU_{i,t}EU_{j,t}$ ). The marginal mean value of the volume of cross-border assets estimated by the model if both countries, source and target, are members of the European Union ( $N = 2287$ ) is  $\text{€}34,275,254 \pm \text{€}3,317,317$ . For the opposite case ( $EU_{i,t}EU_{j,t} = 0$ ) the marginal mean value of the volume is cross-border assets  $\text{€}13557.357 \pm \text{€}5395.301$ . A graphic representation of the influence of both significant dummy variables for the manufacturing sector is shown in Figure 3.



**Figure 3.** The effect of dummy variables on the change in the total value of assets purchased through mergers and acquisitions  $M\&A_{ij,s,t}$  for the manufacturing sector

Source: own sourcing

### 3. Discussion and Conclusion

The context of the study is the integration of the European market that has sped up by the launch of the Economic and Monetary Union in 1992 and the introduction of the Euro in 2002. Many studies converge in finding that these steps, mainly through increasing market size and decreasing transaction costs and political uncertainty, have led to a rise in cross-border M&A activity and performance (Coeurdacier et al., 2009; McCarthy & Dolfma, 2015; Moschieri et al., 2014). Even in the years following the financial crisis beginning in 2008, market integration continued despite cross-border M&A activity declining (Weitzel et al., 2014) but patterns in M&A activity during the financial crisis have not deviated significantly from those in periods of expansion. Globalization of financial markets also plays a crucial role because different economies have become closer to the existence of the globalization process (Přivara & Kiner, 2020). Government measures like investment

liberalization, privatization, and regulatory change also contribute to accessing these cross border mergers and acquisitions opportunities.

Moreover, the creation of industrial zones by governments might also enable businesses to apply more cross-border activities, including increases in export (Navickas et al., 2021), merger and acquisition actions (Ključnikov et al., 2021, 2022) since those zones also enable foreign businesses to operate in such regions (Civelek et al., 2021). Firms can also closely follow other companies' technologies and use those technologies for their internationalization process (Stefko et al., 2022). The results of the research carried out by us presented in this contribution in the investigated period of 1998 to 2021 as well as in our previous studies Hečková, et al. (2016), Hečková et al. (2018) with a narrow view of the selected predictors confirm that European integration in general, and EMU, in particular, have stimulated intra-EU cross-border M&A activity and to have enhanced the attractiveness of European companies. Membership in the European Union has a significant impact, especially in the manufacturing sector. The conditional change in the value of assets obtained through cross-border mergers and acquisitions in our model has the strongest impact of the GDP source country. The second most important is the GDP in the target country. The simplicity of access, greater awareness or unity of standards and rules of the European market has contributed to increased tendencies of investment in the form of mergers and acquisitions between the Member States of the European Union. This phenomenon is further strengthened if both countries are also members of EMU, related to lower entry costs and profitability resulting from investment within the same currency. If only one of the countries is a member of EMU, the volume of mergers and acquisitions is lower, which results from the fluctuation of other currency pairs with a rigid euro taking into account the development of the situation within all EMU countries. The influence of the euro single currency is thus a strong, statistically significant determinant of the implementation of cross-border mergers and acquisitions. The existence of a common border and a common communication language do not significantly affect the change in the value of assets acquired through cross-border mergers and acquisitions, contrary to the results of the research of Barattieri, Borchert and Mattoo (2014). When comparing both partial models, namely for the manufacturing sector and the service sector, we observed in the manufacturing sector the statistical insignificance of the influence of geographical barriers, in contrast to the entire research set and the service sector, and almost a half smaller influence of the other significant interval variables on the conditional change in the value of the investigated parameter GDP. The presented results are also an input for further research on this issue, especially in individual sectors, where it is necessary to look for other significant predictors.

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