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ABSTRACT

Cross-border mergers and acquisitions represent a significant global phenomenon that allows businesses to generate business synergies, procure assets, generate tax optimisations, gain access to new technologies and markets, increase competitiveness and market value and differentiate and diversify business activities. In this study, we analyse the impact of economic determinants which influence the year to year increase in the average volume of cross-border mergers and acquisitions (M&A) directed from the source country to the target country. We run binary logistic regression on the data which contains observation of selected indicators in EU countries (including the UK) within 1998–2015. Our data have nature of panel data. We study impact of selected indicators on the year to year increase of merges and acquisitions in the European Union. We document that market capitalisation growth has a positive influence on the year-on-year increase in the volume of M&A. We also provide proof that changes in relative distance between source and target country affects the volume of M&A and that existence of a common border between the source and target country induce an increase in M&A. Our study contributes to better understanding of the cross-border mergers and acquisitions phenomena and is complementary to already conducted research.

1. Introduction

The reallocation of capital through cross-border mergers and acquisitions is one of the most significant phenomena of recent decades on a global as well as a European scale. Cross-border mergers and acquisitions thus represent an important phenomenon of globalisation affecting the competitiveness of entire states (regions) and redistributing economic forces in the world. From a macroeconomic point of view, they

represent an important determinant of the growth of basic macroeconomic variables (Di Giovani, 2005; Erel et al., 2012; Lobanova et al., 2018; Neto et al., 2008; Pegkas, 2015), relocations and subsequent distribution of production from one state to another, etc. They also have a significant impact on research and development, as research and development itself does not usually move between countries, which favours economically advanced but more expensive economies. It is the research and development-intensive industries that are currently dynamically growing (Aquaro et al., 2021; Chovancová et al., 2015; Rovňák, 2020). According to McCarthy and Dolfsma (2015), a regional analysis shows that interregional mergers and acquisitions also have an indirect impact on European competitiveness and growing geographical expansion of business and connections with increasingly remote locations, mainly due to an increase in target companies in peripheral regions.

The issue of mergers and acquisitions in terms of their motives is the subject of economic research, as evidenced by numerous published research studies (e.g., Andriuskevicius & Ciegis, 2017; Brahma et al., 2018; Caprio et al., 2011; Cartwright and Cooper, 1990; Matsusaka, 1993; Trautwein, 1990 and others). The associated formulation of strategies and hypotheses is an integral part of economic and managerial theories (industrial organisation theory, game theory, efficiency theory, monopoly theory, value theory, empire building theory, process theory, transfer theory).

The implementation and efficiency of mergers and acquisitions is multifactorial. The creation of capital-linked national or international corporations brings benefits not only to the participating entities, but to some extent also benefits for the whole society. M&A activity creates opportunities not only for the companies directly involved in the process of merging or acquisition, but also for the mergers arbitrageurs, seeking to benefit from the risk surrounding announced M&A transactions (Andrieș & Cătălina, 2017; Brakman et al., 2013; Nocke & Yeaple, 2007). Defining the limits of large corporations, which have gained strength through mergers and acquisitions, contribute to creating prosperity for society as a whole and when they are already contributing to the destruction of positive developments (cartels, abuses of monopolies, losses from scale) is an issue that is not yet unequivocally answered (Mackenzie, 2016). The necessity of the existence of some form of protection of competition cannot therefore be called into question. The protection of competitive market structures at the national and international levels, given the specifics and nature of individual sectors of the economy, is a complex issue that requires an appropriate combination of competition and regulatory rules aimed at controlling market power and preventing anti-competitive behaviour (Mackenzie, 2014).

The aim of the paper is to analyse the impact of economic determinants which influence the year to year increase in the average volume of cross-border mergers and acquisitions (M&A) directed from the source country to the target country. We run binary logistic regression on the data which contains observation of selected indicators in EU countries (including the UK) within 1998–2015. Our data have nature of panel data. We study impact of selected indicators on the year to year increase of mergers and acquisitions in the European Union.

To achieve these goals, we used a dataset of all completed M&A between 1998 and 2015 involving acquiring and target companies located in the EU (including the UK).

Table 1. List and description of used variables.

Variable	Description	Source
M&A	Mergers and acquisitions growth. A dummy variable that takes a value of 1 when there is a year-on-year increase in the average volume of M&A going from the source country, otherwise 0. (dependent variable)	Zephyr
GDP	Dynamics of aggregated production. The variable is characterized as the year-on-year growth rate of the aggregate output of the source country. The variable is expressed as a percentage. (explanatory variable)	Eurostat
MC	Change in market capitalization. The variable records the percentage change in the average ratio of market capitalization to aggregated production. The variable is expressed as a percentage. (explanatory variable)	Zephyr
Distance	Distance change. The variable captures the percentage change in the average distance of the source and target country that M&A concerns. The variable is expressed as a percentage. (explanatory variable)	Eurostat
Border	M&A share in neighbouring countries. The variable presents the percentage of M&A in a given source country in a given timeframe going to the immediate neighbouring country to the total number of M&A realized. The variable is expressed as a percentage. (explanatory variable)	
Common Language	M&A share in countries with a common language. The variable presents the percentage of M&A in a given source country in a given timeframe to a country with a common language to the total M&A realized. The variable is expressed as a percentage. (explanatory variable)	
EU-EU	Share of M&A realized within EU countries. The variable captures the percentage of M&A between EU Member States to the total M&A realized. The variable is expressed as a percentage. (explanatory variable)	
Non EU-EU	Share of M&A between EU member and non-EU countries. The variable expresses the percentage of cases where one of the countries involved in M&A belongs to the EU. The variable is expressed as a percentage. (explanatory variable)	
EMU-EMU	Share of M&A realized within EMU countries. The variable captures the percentage of M&A between EMU member countries to the total M&A realized. The variable is expressed as a percentage. (explanatory variable)	
Non EMU-EMU	Share of M&A realized between EMU member and non-member countries. The variable expresses the percentage of cases where one of the countries involved in M&A belongs to the EMU. The variable is expressed as a percentage. (explanatory variable)	
CL	Civil liberties. The variable captures the level of civil liberties where 1 means the highest level of civil liberties and 5 the lowest. The variable is characterized as ordinal. (explanatory variable)	Freedom House

Source: own sourcing.

A key position in the database belonged to M&A data obtained from the Zephyr database (Bureau Van Dijk, 2016). Further necessary data were obtained from Eurostat (European Commission, 2016) and Freedom House (Freedom House, 2016). The total database used contained 111.024 M&A records. Table 1 details a summary of the data and data sources of the database we created. To quantify the impact of the considered predictors on the volume of cross-border mergers and acquisitions in the paper, we construct a binary logistics model. The step-wise model contains four significant determinants. We document that market capitalisation growth has a

positive influence on the year-on-year increase in the volume of M&A. We also provide proof that changes in relative distance between source and target country affects the volume of M&A and that existence of a common border between the source and target country induce an increase in M&A.

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2. Literature review

The rapid increase in cross-border mergers and acquisitions around the world has been caused by a combination of several factors, notably trade and investment liberalisation, deregulation of the services sector, government policies, regional agreements, privatisation of state-owned enterprises, etc. Within the European area, trade and financial liberalisation in the European Union and the European Monetary Union have also made a significant contribution to this. Since the 1990s, cross-border mergers and acquisitions between the Member States of the European Union and subsequently the European Monetary Union have intensified, with temporary fluctuations during financial crises (Aleksanyan et al., 2021; Aquaro et al., 2021; Kiessling et al., 2021; Rao & Reddy, 2015; Weitzel et al., 2014; Workie Tiruneh et al., 2007). A number of studies confirm that the number and value of mergers and acquisitions[1] in the world has been copying business cycles for more than a century (e.g., Andriuskevicius, 2015; Gugler et al., 2012 and others). The main drivers are economic expansion, regulatory change and modern technologies. The literature is broadly consistent in that it attributes a significant role in the growth of mergers and acquisitions in the European Union to legislative and regulatory steps towards monetary and economic integration of the Union (Aquaro et al., 2021; Coeurdacier et al., 2009; McCarthy & Dolfsma, 2015; Moschieri et al., 2014).

The aim of the research by Coeurdacier et al. (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 groupings. Their effort was to confirm, respectively to refute Neary's (2007) theoretical arguments that trade liberalisation and deeper integration of the European market correlate with an increase in cross-border mergers and acquisitions. It was also an attempt to find out whether the European Union and the European Monetary Union were able to attract capital from other parts of the world and to identify the sectors most affected in this regard. They assumed that a better understanding of capital reallocation is a key for public policy makers, as most countries use several opportunities to attract foreign direct investment.

The quality of the institutional environment is also important determinants for cross-border mergers and acquisitions (Bekaert et al., 2007; Hečková et al., 2018a; Papaioannou, 2009), trade policy, tax system, various restrictions on cross-border capital movements, protection of certain sectors (Hečková et al., 2014, 2019)., investor protection (Bris & Cabolis, 2008; John et al., 2010; Rossi & Volpin, 2004), political stability (Bonaime et al., 2018; Cao et al., 2019; Wan & Wong, 2009) and cultural

proximity to the host and home countries (Ahern et al., 2015; Lim et al., 2016; Rottig et al., 2014; Siganos & Tabner, 2020; Weber et al., 2009).

One of the consequences of financial globalisation and European integration is internationally more mobile capital, raising concerns about the use of tax and market regulation strategies in terms of competition. The problem of capital attractiveness has long led to discussions within the European Union on possible harmonisation of tax systems and market regulation in its Member States. While on the one hand it could be argued that countries with higher corporate tax rates and higher levels of market regulation are less attractive for cross-border mergers and acquisitions, the quantitative impact of these policies on business location decisions remains an empirical question for these authors.

Given the efforts of Coeurdacier et al. (2009) to assess the determinants of cross-border mergers and acquisitions, especially in the manufacturing and services sectors, it is important to recall that the rules for trade in goods are governed by the General Agreement on Tariffs and Trade (GATT) and on General Agreement on Trade in Services (GATS). Liberalisation of financial services among its members has been supported by the OECD since the early 1960s, but liberalization standards for cross-border services have not yet been harmonised (OECD, 2021). The General Agreement on Trade in Services (GATS) thus remains essentially the only agreement at international level[2] that regulates and liberalises trade in financial services as well as investments by financial service providers.[3] Commercial presence means that a service supplier of one member establishes a territorial presence, including by way of owning or leasing premises in the territory of another member, to provide services (e.g., domestic subsidiaries of foreign insurance companies or hotel chains). Significant restrictions still remain in trade, the elimination of which is being discussed within the individual rounds of the World Trade Organisation – WTO ministerial conferences.[4]

Due to the different developments in the process of trade liberalisation and investment in production and services, Coeurdacier et al. (2009) determinant of cross-border mergers and acquisitions in these sectors in particular. Based on the results of their analysis for the period 1985–2004, they came to the following conclusions:

- The European Monetary Union has helped to restructure capital in the same sector of productive activity, especially among euro area companies (thanks to preferential financial liberalisation),
- integration into the European Union means the adoption of the Single European Act, which contributes to both horizontal and vertical mergers,
- public policy makers can attract foreign direct capital by reducing corporate tax rates, the degree of product market regulation and improving the country's financial systems,
- the degree of market regulation plays an important role for cross-border mergers and acquisitions in the services sector,
- cross-border mergers and acquisitions within the euro area have increased in those sectors that have seen an increase in trade in goods through the euro area. This result means that the 'trade liberalisation channel' identified by Neary (2007) within the European Monetary Union has also been confirmed,

- on the basis of reallocations within the European Monetary Union, it was found that the manufacturing sectors in the European Union and in the euro area attracted share capital from other developed countries of the world (thanks to unilateral financial liberalisation),
- the increase in acquisitions of European companies is not linked to business models in the sectors, it is stimulated mainly by the reduction of financial transaction costs in the acquisition of European assets,
- European integration effects have not been identified in the services sector. The high degree of service regulation has hampered the entry of foreign companies into national markets. As a result, barriers in the services industry make it difficult to reallocate cross-border share capital.

Based on a model of oligopoly in the general balance of two countries, Neary (2007, pp. 1229–1257) examines how changes in market structure accompany the process of trade and capital market liberalisation and points out that trade liberalisation can foster the implementation of international mergers and can encourage countries to specialise and trade more in line with the comparative advantage.

Analysing the oligopoly model, assuming technological asymmetry among the countries involved, demonstrates that incentives for a multinational company (MNC) to choose cross-border mergers and acquisitions as a foreign direct investment scheme will increase when a preferential trade agreement between the host country and the home country is agreed. Subsequently Neary (2007, p. 1229) in his study classifies merger and acquisition motives into the following groups:

- high-Indicator Tobin Q - Coefficients are those that have the best technology and are looking to expand their equity capital,
- efficiency gains increase as takeovers increase economies of scale or generate other synergies in the form of tax incentives,
- strategic gains increase when cross-border mergers and acquisitions change market structure and competitive position and profit level by creating monopolies or oligopolies,
- building 'empires' allows diversification and protection against shocks in the relevant sector.

3. Research methodology

In our paper, we discuss the determinants that affect the increase in the average volume of cross-border mergers and acquisitions that flows from the source country to the target country during the period $1998 - 2015$ in the EU countries (including the United Kingdom). Evolution of total sum of merges and acquisitions from source countries in thousands of Euro during observed period is shown on the Figure 1.

We present only the source countries mergers and acquisitions, because of the fact that source countries mergers and acquisition are exactly the same as mergers and acquisitions in the target countries. We note that mergers and acquisitions are extremely high in 2000 on value of 4.108 thousand Euros and then dropped to its
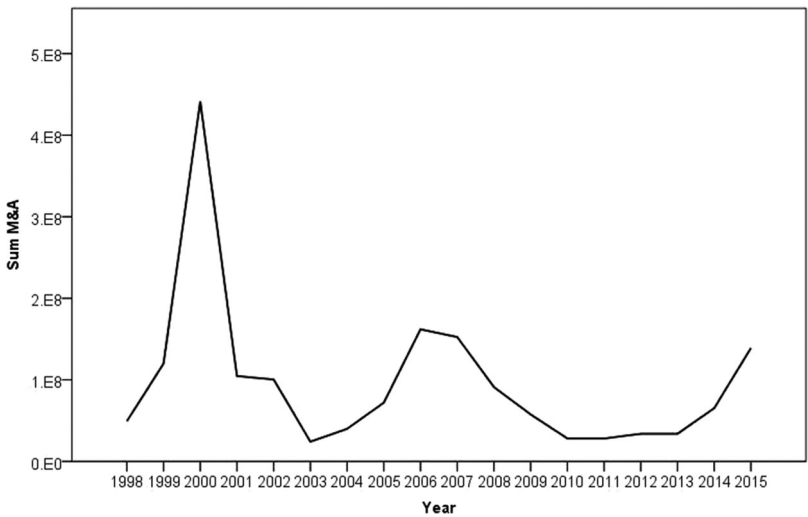
Figure 1. Total sum of mergers and acquisitions in EU.
Source: own sourcing
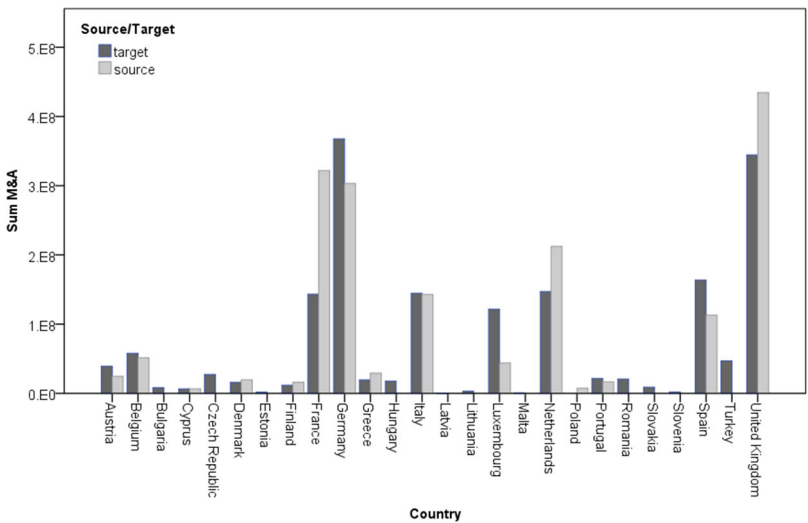
Figure 2. Mergers and acquisitions by country.
Source: own sourcing

usual level. Another rise has been observed before the economic crisis. Then again, we observed a decrease in the mergers and acquisitions volume until 2013 when it started to rise again. Figure 2 depicts the EU countries (except Turkey which was the target county of European mergers and acquisitions, thus we included it into the graph).

We note that countries with the highest share of mergers and acquisitions are United Kingdom, France, Germany, Netherlands and Italy. Countries with highest inflow of mergers and acquisitions are Germany, United Kingdom, Spain,
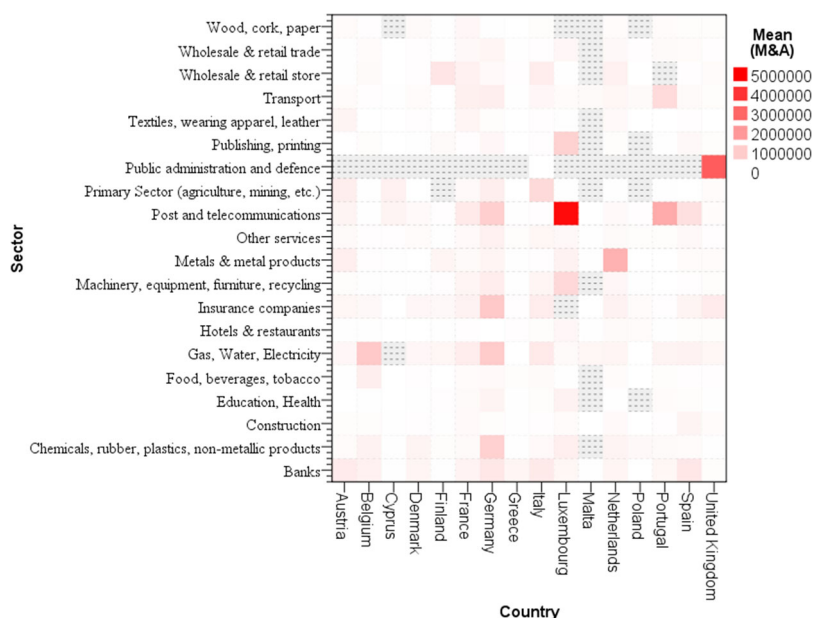
Figure 3. Mergers and acquisitions by country and sector.
Source: own sourcing

Netherlands, Italy and France. Figure 3 propose an overview on the average value of mergers and acquisitions in thousands of Euros by country and sector.

We observe the seemingly outlying value in case of Luxembourg and sector of Post and Telecommunication. Other countries with quite high mergers and acquisitions in the sector of Post and Telecommunications are Portugal, Netherlands, Germany, France and Spain. Another odd case is the case of United Kingdom and the sector of Public administration and defence. In fact, it is the only country with mergers and acquisitions in this sector. Other relatively high average amounts of the mergers and acquisitions can be found in sector of Wholesale & retail store in Finland and Italy, Transport sector in Portugal, Publishing and printing sector in Luxembourg, Primary sector in Austria and Italy, sector of Other services in Germany, sector of Metals and metals products in Netherlands, Austria and Germany, sector of Machinery, equipment, furniture and recycling in Luxembourg, Germany and France, sector of Insurance in Germany, Italy and United Kingdom, sector of Gas, water and electricity in Belgium, France, Germany, Italy and Spain, sector of Chemicals, rubber, plastic in Germany and Luxembourg and Banks sector in Austria, Germany, Italy, Netherlands and Spain.

Considering the contributions of the authors in the field (Bjorvatn, 2004; Coeurdacier et al., 2009; Hečková et al., 2016; Uddin & Boateng, 2011 and others), we consider in our analysis the relevant indicators of the development of the economy (source country), the average change in distance between the source and the target country, the existence of a common border or a common language, the membership of M&A participating countries within the political-economic grouping (European union - EU or European Monetary Union - EMU) and the level of civil liberties.

Based on the above, we formulate the following working hypothesis:

H1: Positive growth rates of the economy from which M&A is outflowing increase the likelihood of a year-on-year increase in the volume of M&A coming from that country.

H2: Growth in market capitalisation in the M&A source country has a demonstrable statistical impact on the year-on-year increase in the volume of M&A form given country.

H3: Relative distance between source and target country affects the proportional change in volume M&A flows from source country.

H4: The existence of a common border between the two countries (source and target country) contributes to a likelihood of increase in M&A.

H5: Language similarity is a factor that increases the likelihood of growth of volume of M&A between such countries.

H6: Civil liberties are factor that affect the likelihood of a change in the volume of M&A realised.

Given the nature of the contribution, the data were structured on the basis of two primary attributes, which were the source country realised by M&A and the time factor. With regard to data from the Zephyr database (Bureau Van Dijk, 2016), Eurostat (European Commission, 2016) and Freedom House (2016), we considered 16 countries[5] over a period of 18 years (1998–2015). The total database used contained 111.024 M&A records.

However, in the data used, only 47.110 (for the overall dataset) dealt with M&A. However, the research sample still narrowed due to the unavailability of at least one of the independent variables in several cases. Thus, the total range of usable data for the entire reference period is 46.822 observations. In our analysis, the values of the M&A realised are expressed for every country in their average height. Thus, the final version of the modified dataset has 288 observations for each variable. Table 1 presents a summary of the variables used and the characteristics of their construction.

The aim of the paper which is to determine the average growth in M&A volume in the source country lead us to the use of the logistic regression model. Logistic regression is among the generalised linear models in binomial distribution with logit link function (McCullagh & Nelder, 1989). A step-wise technique was used to determine suitable variables. An important point is also the determination of internal links between indicators, for which we used the Variance inflation factor (Mansfield & Helms, 1982). Akaike information criterion (Akaike, 1974) and Bayesian information criterion (Schwarz, 1978, pp. 461–464) was used to select a suitable model. MS Excel, SPSS and R (3.4.3) with RStudio (1.1.442) were used for data processing and analysis.

4. Results

Based on the above, we have compiled a binary logistic model representing determinants affecting the probability of growth in the average volume of M&A realised. The constructed model quantifies the log odds effect of selected predictors

Table 2. Variance Inflation Factor.

	VIF		
Market Capitalisation	Distance	Border	nonEU_EU
1.0497	1.0854	1.4471	1.3037

Source: own sourcing.

on the growth of the realised M&A volume. Considered estimated model has the following equation:

$$ln \frac{p(M\&A = 1)}{1 - p(M\&A = 1)} = \beta_0 + \beta_1 GDP_{it} + \beta_2 MC_{it} + \beta_3 Distance_{it} + \beta_4 Border_{it}$$
$$+ \beta_5 Common\ Language_{it} + \beta_6 EU{-}EU_{it}$$
$$+ \beta_7 Non\ EU{-}EU_{it} + \beta_8 EMU{-}EMU_{it}$$
$$+ \beta_9 Non\ EMU{-}EMU_{it} + \beta_{10} CL_{it}$$

The expression $ln \frac{p(M\&A=1)}{1-p(M\&A=1)}$ is marked as odds or a probability that year-on-year increase in the average volume of M&A going from the source country will be positive to a probability that M&A year to year change will be negative and its logarithm is marked as logit. β_0 is a regression parameter, $\beta_1 \ldots \beta_n$ are unknown logistic regression coefficients. β_0 is a representation of a natural logarithm of a phenomenon probability. Consequently, mathematical editing of this expression will result in allocation probability to the 1st group

$$p(M\&A = 1) = \frac{1}{1 + e^{-(\beta 0 + \beta 1 x 1 + \beta 2 x 2 + \cdots + \beta n x n)}}$$

The dependent variable is considered dichotomous. The step-wise model consists of four significant determinants. The presence of multi-colinearity of predictors was not confirmed, as shown in Table 2.

Based on the probability of growth in M&A volume (47.79%) and the use of just 4 independent variables, we determined a minimum number of samples at 84 observations. Thus, this condition is fulfilled by the model. Linearity assumption of continuous predictors with log odds has also been fulfilled, but due to capacity reasons it is not mentioned. The over dispersion of the assembled model was not confirmed. A summary view of the analysis is presented in Table 3. The robustness of the model (or its variables) was tested by compiling models from different combinations of variables. Each of the statistically significant variables proved to be robust (even if it was included separately in the reference model), but due to the scope, these reference models are not listed. Tables 4 and 5 record the analysis of the deviance of the model. Other additional characteristics of the model are recorded in Figures 4–6. Only statistically significant regression coefficients are presented.

The results showed that the rate of growth of aggregated GDP did not reach a statistically significant level of impact on the likelihood of M&A growth (due to the fact that the variable was not included in the most accurate model using the step-wise technique), which is why we are unable to confirm the H1 hypothesis.

Table 3. Logit model of M&A amount growth likelihood.

Coefficients	Estimate	Std. Error	z value	Pr(>|z|)	$e^{Estimate}$	CI - low	CI - high
(Intercept)	−2.7535	0.7342	−3.7500	[1.77e-04] ***	0.0637	0.0135	0.2429
Market Capital	0.0855	0.0336	2.5480	[0.0108] **	1.0892	1.0345	1.1836
Distance	0.5267	0.2144	2.4560	[0.0140] **	1.6932	1.1316	2.6393
Border	2.9804	0.8505	3.5040	[4.58e-04] ***	19.6947	4.1379	118.0144
nonEU_EU	2.5667	1.2322	2.0830	[0.0373] **	13.0229	1.1693	179.6600
AIC	349.7054		BIC	367.7160		Pseudo R^2 (Nagelkerke)	0.1772

Source: own sourcing.

**Table 4.** Logit model's analysis of deviance.

Variable	DF	Resid. Deviance	DF	Resid. Deviance	Pr(>Chi)
(Intercept)			270	375.06	
Market Capital	1	16.1430	269	359.10	[5.87e-05] ***
Distance	1	3.4369	268	355.66	[0.0638] *
Border	1	11.6219	267	344.04	[6.52e-04] ***
nonEU_EU	1	4.3320	266	339.71	[0.0374] **

Source: own sourcing.

Table 5. Logit model's analysis of deviance – model significance.

Model 1: *M&A amount growth ∼ Market Capital + Distance + Border + nonEU_EU*
Model 2: *M&A amount growth ∼ 1*

	Resid. DF	Resid. Dev	DF	Deviance	Pr(>Chi)
Model 1	266	339.71			
Model 2	270	375.06	−4	−35.357	[3.92e-07] ***

Source: own sourcing.
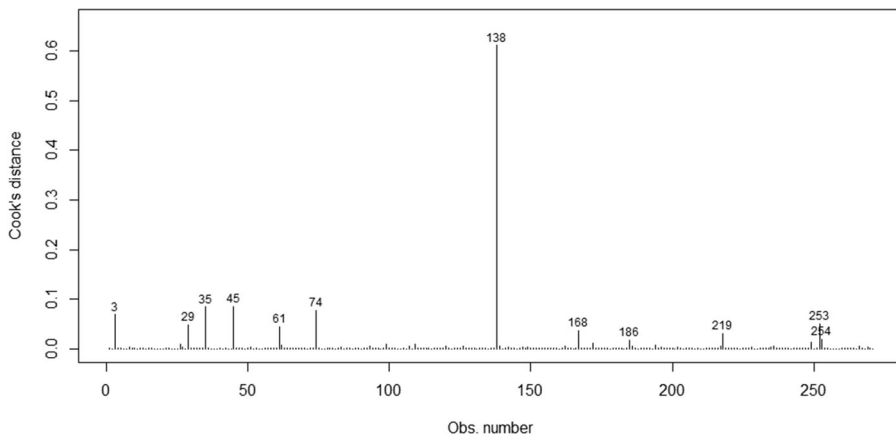
**Figure 4.** Cook's distance of logit model.
Source: own sourcing

However, in the case of another market condition factor, Market Capitalisation, we expect a 0.0855 increase in log odds of response variable at a percentage change of more than 1% of Market Capitalisation, thus increasing the average M&A volume increase by 8.92% and 8.92% and respectively 3.45%–18.36%. Given the result, we confirm the H2 hypothesis.
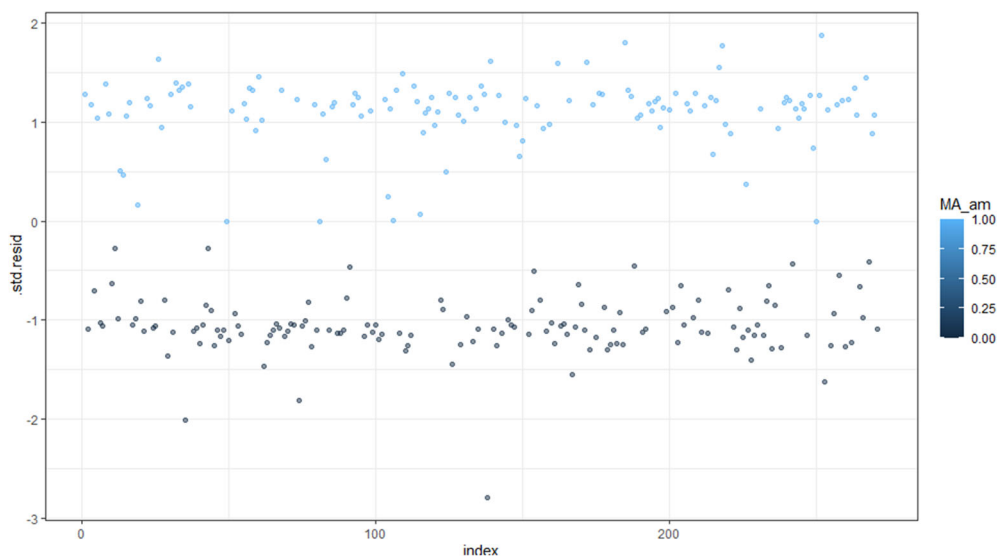
Figure 5. Standard residuals of logit model.
Source: own sourcing
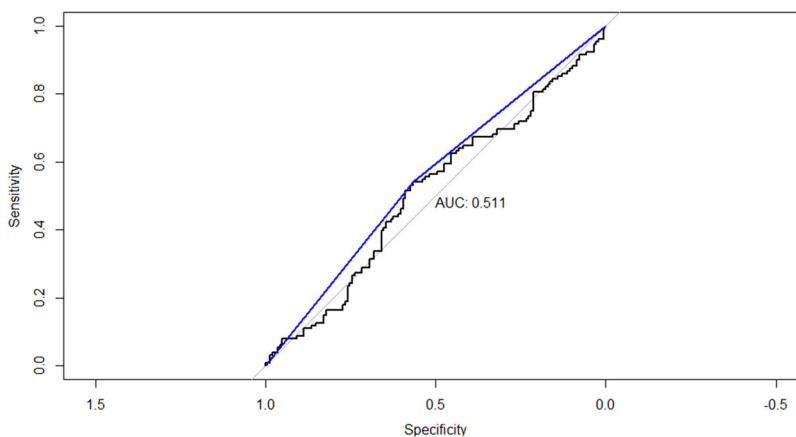
Figure 6. Receiver Operating Characteristic (ROC) and Area Under the Curve (AUC).
Threshold optimising Type I & Type II error is 0.4794
Source: own sourcing

Another factor that we considered in the analysis was distance, resp. relative change in average distance between source and destination country. From the results, we determined that each time the average distance was doubled, the chances of M&A volume growth increased by 69.32%, respectively with 95% probability it will be in the range of 13.16% − 163.93%. We confirm this hypothesis H3.

The fourth determinant considered is the existence of a common border between the source and target countries. The results showed that in the case of 100% M&A's share in neighboring countries, the likelihood of M&A volume growth is 19.69 times higher than in a situation where neither M&A is heading to a neighboring country. We confirm H4 hypothesis.

Further indicator traced the percentage of M&A heading to countries which are related by a language. However, given the lack of significance (in terms of not being included in the most appropriate model), we have not considered it further in the model, so we cannot accept the H5 hypothesis.

The following four indicators deal with the membership of the entities under consideration in the political-economic groupings - EU and EMU. However, based on the results, we are considering a potential increase in M&A average volume only if one of the M&A countries involved belongs to the EU. Based on the results, we estimate that for all realised M&As during a given timeframe meeting this attribute, the probability of an increase in the average M&A volume will increase 13.02 times that in which none of the M&As went to non-EU countries. Given the above, we are unable to confirm the hypotheses H6 (due to the fact that the step-wise technique has chosen a model in which both variables are omitted as insignificant).

5. Discussion

Our findings suggest that the magnitude of the rate does not influence the increase in the likely hood of M&A volume growth, which is attributed to the fact that although the GDP is a significant indicator of the state of the economy, it does not take into account the individual situation of the enterprises. Consequently, while in Di Giovani (2005), Erel et al. (2012), Pegkas (2015) and Lobanova et al. (2018) the presence of dependence of M&A on GDP was confirmed, in this case the results indicate that the aggregate output does not increase the mean M&A volume. The above implies that GDP does not affect the amount of M&A itself, but its frequency. The opposite situation occurs in the case of variable which indicates the market conditions, market capitalisation. This indicator contributes to increasing log odds of response variable. Based on this, we expect that the average value of M&A realised in the source countries will increase as the market capitalisation grows. These results correspond to the findings of Long et al. (2007), Uddin and Boateng (2011) and Lobanova et al. (2018). Our findings concerning market conditions positive influence on M&A volume are in line with Erel et al. (2012, pp. 1045–1082) which document that countries whose stock market has increased in value, tend to be purchasers, thus source countries, while firms from weaker performing economies tend to be the targets. Findings gained through analysis of changes in average distance between source and target country are in line with Coeurdacier et al. (2009) and Uddin and Boateng (2011) which suggest that while the overall volume of M&A realised at a greater distance decreases, the average size of realised M&A is growing. Thus, this disproportion is associated with a significant decrease in the number of realised M&As to more distant countries, but we also expect value of M&As to grow as distance between countries grow. Matter of geographic closeness was also documented in Erel et al. (2012, pp. 1045–1082) study where evidence of theorem about shorter distances between two countries and higher likely hood of acquirers from one country to the other is presented.

The common boundary determinant has an impact on increasing the chances of M&A volume growth, which is in conjunction with Hečková et al. (2016, 2018b)

which suggests that there is an expectation of an increase in M&A volume, not in the number of neighboring countries. However, the same findings do not apply to countries that communicate through a similar language, so we do not expect an increase in the average M&A volume for a larger relative M&A targeting such countries. At the same time, we are more likely to increase the volume of M&A if M&A goes outside the EU. In particular, this phenomenon will be linked to the higher growth rate of non-EU economies in which M&A has been heading, always bringing a higher level of capitalisation to the market (in relative terms). The final finding of this study is that the level of civil liberties is not a significant factor for the likely hood of M&A amount growth. This phenomenon is also related to the fact that of the 16 countries compared; only one case achieved a moderate level of civil liberties, while in other countries it was high, respectively very high. Thus, companies consider the countries to be free and are not afraid to invest within their markets (Rossi & Volpin, 2004, pp. 277–304).

6. Conclusions

The main aim of the paper was to analyse the impact of chosen economic determinants on increase in the average volume of cross-border mergers and acquisitions, which are directed from the source country to the target country during the period 1998–2015 in the European Union.

Variables entering our regression model are the following indicators of the development of the state of the economy (source country); the average change in distance between the source and target countries, the existence of a common border, or the common language, the membership of countries involved in mergers and acquisitions under the political-economic grouping (EU or EMU) and the level of civil liberties. Based on the results obtained from the logistic regression model, we can conclude that although gross domestic product is a significant indicator of the state of the economy, it does not take into account the individual situation of enterprises. This means that the determinant itself will not increase the average amount of mergers and acquisitions. The market capitalisation indicator contributes to increasing the volume of realised mergers and acquisitions. The common border determinant also positively affects the growth in mergers and acquisitions, which means that the size of mergers and acquisitions will increase for neighboring countries, not its quantity. The analysis also found that the determinant of civil liberties is not an important factor contributing to the growth of mergers and acquisitions in EU countries.

Notes

1. Information on the development of the number and volume of mergers and acquisitions worldwide can be found, for example, on the website Institute for Mergers, Acquisitions & Aliances https://imaa-institute.org/.
2. The legal bases for directives and regulations in the field of financial services are Articles 49 (freedom of establishment), 56 (freedom to provide services), 63 (free movement of capital) and 114 (approximation of laws for the establishment and functioning of the internal market).

3. Financial services, as part of the free movement of services and capital, are an integral part of the pursuit of the EU's internal market. The development towards integration is taking place in stages, which can be divided as follows: 1) removal of national barriers to entry (1957–1973), 2) harmonisation of national laws and policies (1973–1983), 3) completion of the internal market (1983–1992), 4) the creation of the single monetary area and the pre-crisis period (1993–2007); and 5) the global financial crisis and post-crisis reform (since 2007). The digital and green transformation has brought further opportunities and challenges for financial services policy. The UK's withdrawal from the EU brings a new set of challenges, with potential implications for the financial services sector both inside and outside the EU.
4. Current information can be found on the website WTO www.wto.org.
5. Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Italy, Luxembourg, Malta, Netherlands, Poland, Portugal, Spain and United Kingdom.

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