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The impact of European monetary integration on M&A volume in the context of the banking market consolidation

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Abstract. Over the last two decades, the banking sector in Europe has undergone significant changes in terms of regulations and market structure, which resulted in a significant increase in M&A transactions. The rise of M&A activity was also a consequence of fundamental changes in the external environment, such as introduction of the euro, technological progress and changing customer demand. The aim of this contribution is to compare the impact of the integration of the countries in the European Monetary Union on the volume (value) and number of realized M&A. The Mann-Whitney U test was used to verify three individual hypotheses. The results of the analysis did not confirm differences in the volume and number of M&As between EMU and non-EMU countries (with the exception of 2 years).

Keywords: cross-border merger and acquisition, banking sector, European monetary integration, consolidation, European Union, European area.

JEL Classification: F15, F23, G34

1. INTRODUCTION

The consolidation of the banking market through implemented M&A with the aim of increasing profitability was supported by the idea of market globalization, the need to adapt to modern trends in business, as well as the need to introduce new technological solutions in the context of the competitive environment. M&A transactions are time-consuming and process-intensive, and their economic profit is difficult to estimate, because there is no detailed research on this issue. The results of the research studies conducted so far must be updated in terms of the data, especially from the point of view of larger transaction volumes and longer time intervals (Prymostka et al., 2021).

The literature dealing with M&A of banks can be summarized into two main groups. The first group is represented by studies that use bank-level data in order to evaluate the motivations of banks for mergers and acquisitions ascribed to the improvement of their financial performance (Cornett et al., 2006; Amel et al., 2004; Huizinga et al., 2001). The second group works with country-level data to examine the factors that discourage or drive banks to engage in cross-border M&A (Pasiouras et al., 2011; Hernando et al., 2009; Claessens and Van Horen, 2007; Horen, 2007; Lanine & Vennet, 2007).

2. LITERATURE REVIEW

For the last 20 years, there has been a important growth in cross-border M&A transactions in the banking sector. The main feature of modern international banking is precisely the intensification of globalization (Omoshagba, 2021) and technological innovation and transformation (Gancarczyk et al., 2022). The trend in this area is the realization of possible economic profits, which are the result of international comparative advantages, that represents a strong motivation for banks to expand to foreign markets (Anandarajan et al., 2011).

Badík (2007) claims that it was the integration trend that significantly influenced the market structure of the European banking system. Transactions carried out through M&A were significantly influenced by factors of the international environment, such as deregulation and related liberalization, the aforementioned technological progress as well as growth in the capital markets and the overall functioning of the macroeconomic environment. Considering the technological factors, the important role has innovations and knowledge management technologies development (Lewandowska et al., 2021; Oliinyk et al., 2021) which enables competitiveness growth. The adoption of the euro as a common currency also dynamically affected the market structure in the given sector (Grabowski et al., 2023). The study also focused on the area of Central and Eastern Europe countries (CEE countries). Strong reasons for the implementation of M&A deals in this area were firstly related to their transformation in the 1990s, and later to the accession to the European Union. After the entry of the CEE countries to the European Union in 2004, banks in these countries became interesting targets for M&A deals, the reason for which was the fact that banks based in the western part of Europe want to increase their market value and strengthen their market position in the European area.

The term "cross-border mergers and acquisitions“ refers to a wide variety of formally different transactions. An "acquisition" is defined as a transaction where a company (the acquirer) acquires ownership control of another firm (the target), but both are still legally separate companies. On the other hand, by implementing a "merger" either one or sometimes both companies legally cease to exist and the shareholders of the merged entities will receive their business shares in the new successor company (Halpern, 2012).

There are various microeconomic reasons that motivate banks to join together through mergers or acquisitions. Among the most important, we can include the following: 1) diversification with the goal of satisfying greater consumer needs, as well as risk spreading by acting on multiple markets; 2) profit efficiency; growth of shareholder profit through cost efficiencies and using economies of scale; 3) banks' desire to reach a sufficiently large size, 4) managerial quality, improvement of managerial quality in the firm or change of focus, 5) motives of the management; the effort of managers to engage in M&A for their own benefit at the expense of shareholders (Brewer et al., 2000; Akhavein et al., 1997).

According to Focarelli et al. (2002) and Altunbas & Ibanez (2004), there are two main empirical variants of measuring the level of economic effectiveness of cross-border M&A. The first variant compare performance before and after mergers with a financial view based on accounting variables (Mylonidis & Kelnikola, 2005; Correa, 2008; Badreldin & Kalhoefer, 2009; Ekkayokkaya et al., 2009). The research of Beccalli & Frantz (2008), Lozano-Vivas & Weill (2009) combine the two methods of accounting indicators with profit or cost efficiency. The second variant examines the effectiveness of mergers and acquisitions in the banking sector using a market approach and uses the event study methodology, which results from examining the effects of different types of events on changes in the value of shares (DeLog & DeYoung, 2007; Knapp et al., 2006; Campa & Hernando, 2005). Overall, analysis of mergers and acquisitions yield mixed conclusions. Some of them have confirmed effectiveness; others confirmed no improvement or even a deterioration in financial performance.

Among the four main motives for implementing cross-border M&A in the banking sector, we can include (Berkovitch & Naranayan, 2015; Shleifer & Vishny, 1992):

- Strategic motives – this group of motives includes the improvement of corporate strategy through a synergistic effect with the aim of increasing market power, supporting the company's strengths and acquiring new corporate resources.
- Economic motives – part of the economic motive is the introduction of economies of scale.
- Personal motives – are represented by an agency problem.
- Market motives – represent the entry into new markets in new countries through the acquisition of already established business companies

Smirnova (2014) offers a detailed classification of M&A in the banking sector based on the concept of "motivation". According to this classification, there are internal and external motives of entities for the implementation of M&A deals. Internal motives mainly include increasing revenues, improving efficiency, competitiveness and technical competence, but also the desire to grow and offer new products. External motives are mainly influenced by the banking environment itself and can be further divided into four other categories (Figure 1).

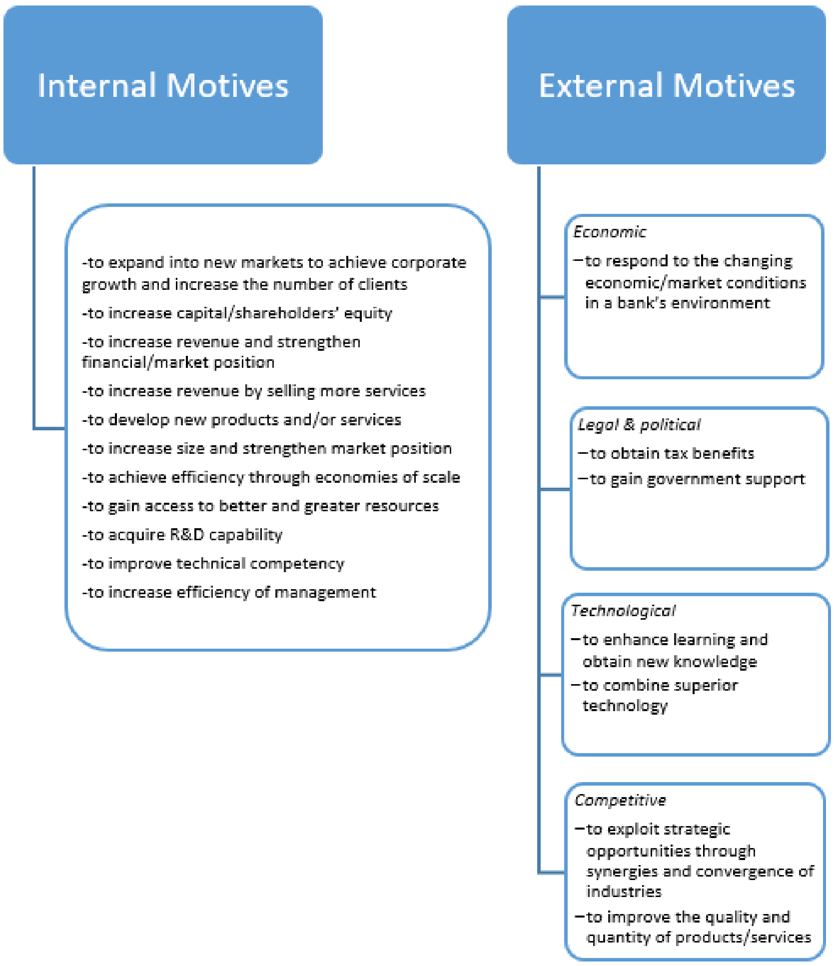

Figure 1. Internal and External M&A Motives in the Banking Sector
Source: Own processing according to Smirnova (2014)

Caruzo & Palmucci (2008) argue that many companies realize growth through M&A, as it is a fast way of growth in certain sectors, especially in banking. This way often leads to performance increase (Borodin et al., 2020). The banking sector is characterized by the fact that growth through the internal route is very difficult. On the other hand, growth by an external form, e.g. through M&A deals also has its disadvantages. These are mainly problems related to organizational integration, as well as the merging of approaches resulting from different corporate cultures and cultural environments. In other words, M&A deals make sense and generate value for both parties if both parties can benefit from the synergies resulting from the deal itself.

3. METHODOLOGY

The main aim of the presented contribution is to compare the impact of the integration of the countries of the European Monetary Union on the volume (value) and number of realized M&A. So, we want to compare the countries of the European Area vs. EMU countries with regard to the size of the implemented M&A. We assume that the EMU countries will have a higher volume and number of implemented M&As, as they are countries with a higher degree of integration.

Subsequently, we established research hypotheses for this contribution:

H1: *„There are statistically significant differences in the volume of realized cross-border mergers and acquisitions between the countries of the European Monetary Union (EMU) and other countries of the European space (EEA)."*

H2: *„There are statistically significant differences in the number (count) of realized cross-border mergers and acquisitions between the countries of the European Monetary Union (EMU) and other countries of the European space (EEA)."*

H3: *„Thera are statistically significant differences between the countries of the European Monetary Union (EMU) and other countries of the European space (EEA) with regard to the volume and number of realized cross-border mergers and acquisitions."*

The analysis is focused on 19 countries in Europeans space, whereas the examined development covers 18 periods. The monitored EMU countries for which data were available include Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherland, Portugal, and Spain. Among the other countries of the European space that do not belong to the EMU, we included: Denmark, Poland, Sweden, Turkey, and the United Kingdom. Malta and Cyprus introduced the euro in the country in 2008, until then they did not belong to the European monetary union.

The M&A indicator, according to which we evaluate the differences between EMU and EEA countries, presents the volume of realized cross-border M&A in the banking sector in the countries of the European Area (in mil. €). The dataset containing records of implemented cross-border M&A in the European Area was based on data from the Zephyr and Orbis database (Bureau van Dijk, 2022). The data set consists of individual cross-border stock transactions between the home country of the acquirer and the host country where the target firm is based. The source of other used statistical data is Eurostat (European Commission, 2022). Only records with a volume over 1 mil. Euros of realized cross-border M&A and acquisitions were selected for the resulting database. Statistical software Gretl, Statistica and MS Excel were used to process the obtained data.

Table 1 presents descriptive statistics for volume of realized cross-border M&A in banking sector in the countries of the European Area (in mil. €) in the selected period of 2004 – 2021, where "Min" indicates the minimum volume of M&A, "Max" the maximum value, "Std. dev" represents the standard deviation, "Q1" lower quartile, "Q3" upper quartile. Since only records with a volume over 1 mil. Euros of realized cross-border M&A were selected for the resulting database, for some countries, the volume of M&A in the selected periods were unavailable.

Table 1

Descriptive statistics for volume of M&A

Country	Average	Median	Min	Max	Q1	Q3	Std.dev
Austria	387394.0	38500.41	61.8000	6080000	8350.000	210000.0	1037197
Belgium	176691.5	22200.00	3.76500	3304000	6304.000	105500.0	477425.6
Cyprus	41988.57	2564.000	97.0200	1614966	1425.000	9202.000	191397.9
Finland	93878.93	13553.53	1240.0000	1520000	5700.000	38000.00	228151.6
France	290199.4	16750.00	43.0000	17800000	7273.500	84921.00	1196879
Germany	372143.5	40022.94	63.0000	12000000	8216.000	247500.0	1064039
Greece	214272.7	11220.00	100.0000	17266362	4492.000	48400.00	1340525
Ireland	1544219	36859.63	1000.000	30992787	13333.50	288900.0	5868313
Italy	296756.5	30000.00	3.000000	29609699	6953.500	126160.5	1701947
Luxembourg	617071.4	29033.50	193.2500	21800000	6781.000	197719.7	2404311
Malta	18013.00	18013.00	726.0000	35300.00	726.0000	35300.00	24447.51
Netherlands	684508.9	61491.50	34.10000	71100000	24709.50	190368.0	4657238
Portugal	123341.3	34569.00	175.0000	2500000	7500.000	100000.0	329032.5
Spain	368361.6	49200.00	200.0000	12136146	10040.00	281000.0	1042827
Denmark	187906.3	10767.38	16.66000	4987113	1475.890	63606.70	610525.1
Poland	9000.000	9000.000	9000.000	9000.0	9000.000	9000.000	0.000000
Sweden	165144.0	13659.98	1033.498	4788943	3999.533	81000.00	511477.4
Turkey	180038.3	20125.00	1350.000	700000.0	3630.000	335000.0	285927.4
United Kingdom	37468.86	3153.840	5.780000	16366210	1395.780	11607.45	429823.6

Source: Authors' results.

To verify individual hypotheses, the Mann-Whitney U test was used. The Mann-Whitney U test is a non-parametric test that compares the median values of two independent samples and tests whether the difference between the mean ranks of two groups is statistically significant or just random (Martínez-Murcia et al., 2012).

4. EMPIRICAL RESULTS AND DISCUSSION

To verify the first hypothesis H1 - There are statistically significant differences in the volume of realized cross-border M&A between the countries of the EMU and other countries of the European space (EEA), the Mann-Whitney U test was used. The results are shown in Table 2.

Table 2

Results of the Mann-Whitney U test for testing Hypothesis 1

Dependent variable: V*olume M&A (in year)*	Independent variable: *Country (EMU/EEA)*						
	Rank Sum Group EMU	**Rank Sum Group ES**	**U**	**Z**	**p-value**	**Z Adj.**	**p-value**
2004	140.5000	49.50000	21.50000	1.690309	0.090970	1.697771	0.089552
2005	144.0000	46.00000	18.00000	**1.986112**	**0.047022**	**2.003767**	**0.045096**
2006	144.0000	46.00000	18.00000	**1.986112**	**0.047022**	**2.003767**	**0.045096**
2007	140.0000	50.00000	22.00000	1.648051	0.099343	1.662700	0.096373
2008	155.5000	34.50000	19.50000	1.388730	0.164916	1.394861	0.163059
2009	149.5000	40.50000	25.50000	0.833238	0.404711	0.846331	0.397369
2010	157.0000	33.00000	18.00000	1.527603	0.126612	1.541182	0.123273
2011	150.0000	40.00000	25.00000	0.879529	0.379115	0.887347	0.374893
2012	149.5000	40.50000	25.50000	0.833238	0.404711	0.846331	0.397369
2013	148.0000	42.00000	27.00000	0.694365	0.487454	0.734075	0.462904
2014	150.0000	40.00000	25.00000	0.879529	0.379115	0.901961	0.367078
2015	152.0000	38.00000	23.00000	1.064693	0.287016	1.185176	0.235949
2016	154.0000	36.00000	21.00000	1.249857	0.211353	1.252056	0.210551
2017	155.0000	35.00000	20.00000	1.342439	0.179455	1.348366	0.177542
2018	150.0000	40.00000	25.00000	0.879529	0.379115	0.881076	0.378277
2019	143.0000	47.00000	32.00000	0.231455	0.816961	0.231862	0.816645
2020	150.0000	40.00000	25.00000	0.879529	0.379115	0.883412	0.377014
2021	149.5000	40.50000	25.50000	0.833238	0.404711	0.836917	0.402640
Overall M&A	155.0000	35.00000	20.00000	1.342439	0.179455	1.342439	0.179455

Source: Authors' results. Market tests are significant at $p < 0.050$.

The results of the Mann-Whitney U-test show that there are statistically significant differences in the volume of realized cross-border (M&A) between the countries of the European Monetary Union and other countries of the European space in 2005 and 2006. Differences were not confirmed in the other monitored years or in the total volume during the entire period.

The Mann - Whitney test results for 2005 and 2006 are visually complemented by Figure 2 and 3, which shows a factorized boxplot of volume of realized M&A. The X-axis represents the group to which the country belongs, with 1 corresponding to countries from EMU and 0 corresponding to countries from EEA. Also, based on a factorized boxplot, we can conclude that there is a difference in the volume of realized cross-border M&A between the countries of EMU and other countries of ES in 2005 and 2006. Visually, we can recognize that in both years the M&A volume was higher in the case of EMU countries. Figure 2 and 3 are also supplemented with descriptive statistics in the Table 3.

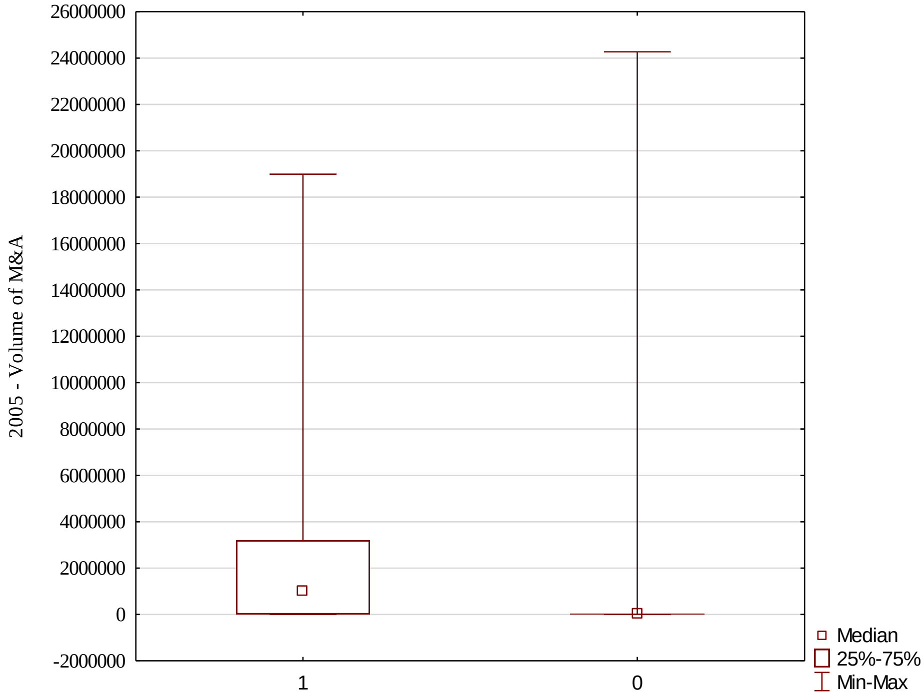

Figure 2. Factorized boxplot for volume of M&A in 2005
Source: Authors' results

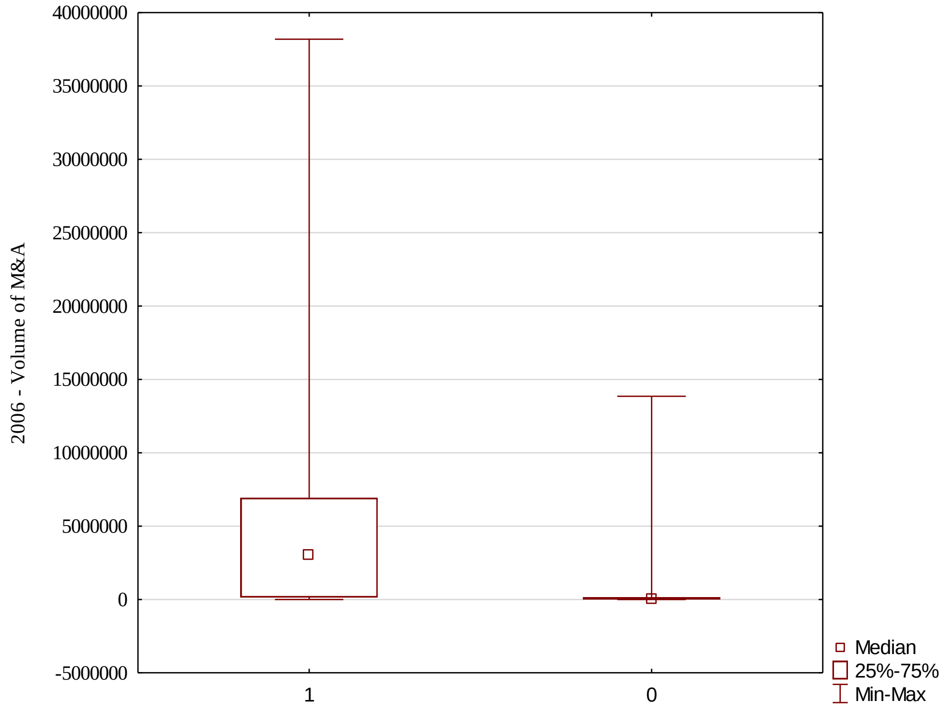

Figure 3. Factorized boxplot for volume of M&A in 2006
Source: Authors' results.

Table 3

Descriptive stastistics

Volume of M&A	Mean	Median	Min	Max	Lower Quartile (25%)	Upper Quartile (75%)	Standard deviation
2005	3370780	560123	0,00	24272471	0,00	3198811	6761206
2006	6691745	2177201	0,00	38194914	0,00	6919132	11462304

Source: Authors' results.

As part of hypothesis 2, we suppose that there are statistically significant differences in the number of M&A between the countries of EMU and other countries of EEA. Again, we used the Mann-Whitney U-test, the results of which are shown in Table 4. At the same time, the results of the third hypothesis, which assumed statistically significant differences between the countries of EMU and other countries of EEA with regard to the volume and number of realized M&As, are shown in Table 5. The results show that there are no statistically significant differences. Therefore, we reject hypothesis 2 and also hypothesis 3.

Table 4

Results of the Mann-Whitney U test for testing Hypothesis 2

Dependent variable: ***Number M&A (in year)***	**Independent variable: *Country (EMU/EEA)***						
	Rank Sum Group EMU	**Rank Sum Group ES**	**U**	**Z**	**p-value**	**Z Adj.**	**p-value**
2004	135.5000	54.50000	26.50000	1.267731	0.204895	1.276155	0.201902
2005	143.0000	47.00000	19.00000	1.901597	0.057225	1.921936	0.054615
2006	138.5000	51.50000	23.50000	1.521278	0.128191	1.535486	0.124665
2007	135.5000	54.50000	26.50000	1.267731	0.204895	1.280144	0.200495
2008	153.0000	37.00000	22.00000	1.157275	0.247161	1.164447	0.244244
2009	146.5000	43.50000	28.50000	0.555492	0.578559	0.564221	0.572604
2010	145.5000	44.50000	29.50000	0.462910	0.643429	0.468281	0.639584
2011	147.5000	42.50000	27.50000	0.648074	0.516938	0.655888	0.511897
2012	144.5000	45.50000	30.50000	0.370328	0.711138	0.377861	0.705534
2013	147.0000	43.00000	28.00000	0.601783	0.547319	0.639656	0.522396
2014	149.0000	41.00000	26.00000	0.786947	0.431313	0.818811	0.412895
2015	149.5000	40.50000	25.50000	0.833238	0.404711	0.934668	0.349960
2016	152.0000	38.00000	23.00000	1.064693	0.287016	1.067977	0.285532
2017	152.5000	37.50000	22.50000	1.110984	0.266576	1.116878	0.264047
2018	149.0000	41.00000	26.00000	0.786947	0.431313	0.790072	0.429486
2019	150.0000	40.00000	25.00000	0.879529	0.379115	0.882631	0.377436
2020	151.0000	39.00000	24.00000	0.972111	0.330996	0.979006	0.327578
2021	147.5000	42.50000	27.50000	0.648074	0.516938	0.651512	0.514716
Overall number M&A	146.0000	44.00000	29.00000	0.509201	0.610612	0.512584	0.608242

Source: Authors' results. Market tests are significant at p <0.050.

Table 5

Results of the Mann-Whitney U test for testing Hypothesis 3

Dependent variable: *Number M&A (in year)*	**Independent variable: *Country (EMU/EEA)***						
	Rank Sum Group EMU	**Rank Sum Group ES**	**U**	**Z**	**p-value**	**Z Adj.**	**p-value**
2004	97.0000	23.00000	13.00000	1.109745	0.267110	1.109745	0.267110
2005	95.0000	10.00000	4.00000	1.868397	0.061708	1.868397	0.061708
2006	94.0000	11.00000	5.00000	1.712698	0.086769	1.712698	0.086769
2007	88.0000	17.00000	11.00000	0.778499	0.436276	0.778499	0.436276
2008	99.0000	21.00000	8.00000	-0.764287	0.444697	-0.764287	0.444697
2009	76.0000	15.00000	10.00000	-0.098693	0.921382	-0.098693	0.921382
2010	98.0000	7.00000	4.00000	1.369306	0.170904	1.369306	0.170904
2011	90.0000	15.00000	12.00000	-0.091287	0.927265	-0.091287	0.927265
2012	83.0000	8.00000	5.00000	1.085620	0.277648	1.085620	0.277648
2013	44.0000	11.00000	8.00000	-0.130558	0.896125	-0.130558	0.896125
2014	63.0000	15.00000	8.00000	-0.322252	0.747262	-0.322252	0.747262
2015			0.00000	0.000000	1.000000	0.000000	1.000000
2016	110.0000	26.00000	16.00000	0.909509	0.363082	0.909509	0.363082
2017	103.0000	17.00000	11.00000	0.938194	0.348145	0.938194	0.348145
2018	105.0000	31.00000	21.00000	0.303170	0.761761	0.303170	0.761761
2019	95.0000	41.00000	17.00000	-0.788241	0.430556	-0.788241	0.430556
2020	93.0000	27.00000	15.00000	-0.360844	0.718216	-0.360844	0.718216
2021	98.0000	22.00000	12.00000	1.240303	0.214864	1.240303	0.214864
Average M&A	160.0000	30.00000	15.00000	1.805349	0.071021	1.805349	0.071021

Source: Authors' results. Market tests are significant at $p < 0.050$.

5. CONCLUSION

Changes in the global banking sector bring about the remodeling of this sector, which is largely influenced by the implemented M&A deals. Given the changes in the banking in the context of different regulations and economic conditions, they have a significant impact on shareholders, top management representatives and, last but not least, the employees of the banks involved. It remains an undeniable fact that it is the performance and affective functioning of the banking sector of each country that affects the performance of other sectors of the economy. For the last 20 years, banks have expanded their business and therefore it is extremely important to examine how banks are currently reevaluating their strategies in the field of M&A deals also from the point of view of the current global economic situation (Warter and Warter 2015).

The results of the analysis did not confirm differences in the volume and number of M&As between EMU and non-EMU countries (with the exception of 2 years). Among the possible reasons and at the same time the limits of the research, we advise:

- Small sample (only 12 or 14 EMU countries vs 7 or 5 EEA countries)
- Countries that are not part of the EMU are not a compact group, i.e. j. some countries are not part of the EMU by their own decision. For example, the United Kingdom did not want to be part of it and decided to withdraw from the EU itself, Denmark has an exception so that it does not have to introduce the euro. Such countries are then in a group with countries such as Poland, which does not meet the conditions for adopting the euro.

The results could also be influenced by the fact that the dataset only works with the volume of M&A above 1 million euros, which means that some countries were not included in the analysis at all, some (e.g. Poland) only have data available for 1 year. In future research, we will therefore perform the calculations in the context of reducing the lower limit of the volume of M&A that will be included in the analyses. In future analyses, we will also take into account the length of time in the monetary union, or consider other independent variables.

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