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THE IMPACT OF GDP ON M&A VOLUME IN THE EUROPEAN AREA IN THE CONTEXT OF THE CONSOLIDATION OF THE BANKING MARKET*

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Abstract. The banking sector of any nation is its key driver because the performance of the financial sector plays a vital role in the development of any economy. The European banking sector has gone through a process of rapid changes during the past three decades. The established trend of liberalization and deregulation resulted in a wave of massive consolidation, which fundamentally changed the environment in which banks did business. The main purpose of this paper is to evaluate relationships and, above all, quantify the impact of GDP on the volume of cross-border mergers and acquisitions in the banking sector for the period 2004 – 2021 in selected countries of the European Area by applying three panel regression methods. From the values shown, it follows that the percentage growth of GDP has a significant effect on the percentage growth of the volume of cross-border mergers and acquisitions in the banking sector and thus was the established hypothesis confirmed. The results confirmed that 1% growth in the economy will cause a 32% increase in the volume of cross-border mergers and acquisitions in the European Area.

Keywords: cross-border merger; cross-border acquisition; gross domestic product; consolidation; banking sector; European Union

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1. Introduction and theoretical framework

The performance of the financial sector plays a vital role in the development of any economy. The banking sector is the prime mover of the economy as no economic activity will sail smoothly without adequate funds, the bulk of which is provided by the banking sector. Banks therefore occupy a significant place in the economy of every nation and should be given more attention than any other type of economic unit in an economy (Agarwal et al., 2020). The reorientation of global development provokes transformations in all policies of the country's development (Pimonenko et al., 2021; Masood et al. 2017). Companies are constrained by external forces that hinder their sustainability (Amoah et al., 2021). Foreign direct investments (FDI) are a crucial element for development of modern economies. FDI's role in globalization is unquestionable; the countries, which receive the most FDI, develop faster, and also the growth of their GDP. Two basic FDI forms are: green-field investments and brown-field investment, which include mergers and acquisitions (M&A). In Europe, financial markets deregulation, technological development and the creation of the European monetary Union (European single currency) created the common platform for bank competition which led to expansion (Wang et al., 2022; Oliinyk et al., 2022). The expansions took mainly the form of mergers and acquisitions (Babic-Hodovic and Mehic, 2007; Naba and Chen, 2014).

Similarly, Teplý et al. (2010) says that the M&A wave contributed to a consolidation process, which has transformed the once fragmented European banking industry into a system of national oligopolies with even a few pan-European players. The rise of M&A activity was forerunned by fundamental changes in external environments, such as deregulation, introduction of euro, technological progress and changing customer demand. Over recent years the European banking sector has experienced a rapid process of mergers and acquisitions. Mergers and acquisitions have become the driving force of the world's economy and have played a significant role in the strategy of many banks in the last decade. Since the 1990s, the European banking industry has experienced an unprecedented level of merger activity that has considerably influenced the sector's structure (Badík 2007). Also according to Smirnova (2014), in recent years, mergers and acquisitions have become very common not only between business entities but also between financial institutions. Such factors as globalization, liberalization, internationalization of competition and technological developments have just intensified this tendency (Belas et al. 2019). A deeper understanding of motives for mergers and acquisitions allows us to recognize what forces (economic, financial, technological, etc.) drive companies and other establishments towards the creation of such alliances. In addition, the global financial crisis of 2007-2008 undermined the economies of many countries, their volume of gross domestic product (GDP) and economic growth and thus expedited consolidation of financial institutions. Subhashree and Kannappan (2018) also argue that banks are currently forced to rethink their business and devise new ways because of changes within the expectation of the company customer.

Theoretical concept of mergers and acquisitions in the banking sector is also discussed by Novickyte and Pedroja (2015). According to them, the concentration of banks on the market is growing thanks to consolidation processes that are taking place in the banking sector. Consolidation typically occurs as a result of mergers or acquisitions between market players. Such mergers and acquisitions are usually driven by an ambition to gain as much weight as possible in the international banking space, to eliminate competition from profitable areas of business, to procure added financial benefits for the shareholders, to expand the range of services, and to effectively manage the resources available. Such consolidation processes inevitably affect the financial system of a country or a region and can also have an impact on the GDP. The concern with the constitution of the banking system and its stability stems from the exclusive role that banks play in the financial system and economy. The importance of the banking sector in the economy supports the relevance of the issue at hand and allows probing into the consolidation processes within the banking sector, as well as impacting the performance of the economy on volume of M&A. Broader view of the issue of mergers and acquisitions was also devoted to studies from Hečková et al. (2018) and Štefko et al. (2022).

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Mergers and acquisitions are the important process in the banking sector to make enormous financial gains. The main aim of merger and acquisition in the banking sector is to improve the economies of scale. A merger means the combination of two companies into one company. During the merging process, one company survives and the other company loses their corporate existence. On the other hand, acquisition means a complete takeover. Mergers and acquisitions are these days common choices for business survival and development. That integration is achieved through strategic actions in processes and structures, in addition, through the management of the subjective conditions that support human performance, while strategic planning as an important factor of competitiveness (Štefko et al. 2021). Mergers and acquisition helps the bank not only to get new brand name, new structures, product offerings but additionally give opportunities to cross sell the new accounts acquired (Subhashree and Kannappan, 2018; Gavurova et al. 2017a,b). Specifically, several authors devoted to research in the framework of M&A in the banking sector, such as Teplý et al. (2010); Ayadi and Arnaboldi (2008); Aljadani and Toumi (2019); Micu and Micu (2016), etc.

The banking and financial sector is a dynamic sector that regularly goes through a series of structural changes. Innovation is one of the most crucial factors that make its representatives to differentiate themselves against their competitors to generate more income and profit (Civelek et al., 2021; Dvorsky et al. 2021). Innovative financial products have been used as a stimulating tool to increase trading activities and social interactions (Ključnikov et. al, 2020). Global bank consolidation and concentration processes have prompted a lively discussion on the part of scholars and practitioners regarding the influence of concentration on the efficiency and competition levels in the banking system, the financial and macroeconomic stability of countries and the growth of economies and their GDP (Wang et al., 2022; Škare and Porada-Rochoń, 2021, 2022). It has been noted that the banking sector tolerates high levels of concentration rather well compared to other business sectors, thanks to the apparent benefits of concentration on the increasing stability of the financial system (Novickyte and Pedroja 2015). The M&A transactions represent a wide range of unique business optimization opportunities in the corporate transformation deals, which are usually characterized by the high level of total risk. The M&A transactions can be successfully implemented by taking into account the size of investments, purchase price, direction of transaction, type of transaction, and using the modern comparable transactions analysis and the business valuation techniques (Ledenyov and Ledenyov, 2014). Modern methods of evaluating decision-making units are quite often used as a necessary tool for assessing the financial stability and performance of decision-making units (Štefko et al., 2017). The rest of the paper is organized as follows: in the next section we will describe the methods and the methodology. The section Results will be entirely dedicated to the empirical investigation, where we will briefly review the most significant findings, while in the Discussion and Conclusion sections, we will discuss the outcomes of previous empirical research and conclusions.

2. Methodology

The main purpose of this paper is to evaluate relationships and, above all, quantify the impact of GDP on the volume of cross-border mergers and acquisitions in the banking sector for the period 2004-2021 in selected countries of the European Area.

Based on the aim of the work, we set the following hypothesis:

H1: GDP affects the growth of the volume of cross-border mergers and acquisitions in the banking sector.

The analysis is focused on 19 countries of the European Area, whereas the examined development covers 18 periods. The panel data were used, while applying regression models primarily intended for the analysis of such structured data, i.e., the pooled regression model (PRM), the random effects model (REM), and the fixed effects model (FEM). These methods are constructed as follows:

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PRM: $M\&A_{it} = \alpha + \beta_1 * GDP_{it1} + \varepsilon_{it}$ (1)
REM: $M\&A_{it} = \beta_1 * GDP_{it1} + (\alpha + u_i) + \varepsilon_{it}$ (2)
FEM: $M\&A_{it} = \alpha + \beta_1 * GDP_{it1} + \varepsilon_{it}; \alpha_t = \alpha_{t1} + \alpha_{t2} + ... + \alpha_{te}$ (3)

M&A presents a volume of realized cross-border mergers and acquisitions in the banking sector in the countries of the European Area (in mil. eur). This variable is expressed by a natural logarithm (dependent variable). GDP (gross domestic product from Eurostat in mil. EUR at regular prices) presents an independent variable. This variable is also expressed by a natural logarithm.

The dataset containing records of implemented cross-border mergers and acquisitions in the European Area was based on data from the Zephyr and Orbis database (Bureau van Dijk, 2022). 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 used statistical data is Eurostat (European Commission, 2022).

Before each separate regression analysis, we assessed the stationarity of the dependent and independent variables using the ADF or KPSS test for the presence of unit roots. Before constructing the regression models, we carried out correlation analysis. To determine the appropriateness of one of the three regression models mentioned above, we used the joint significance test of the averages of different groups, the Breusch-Pagan test, or Hausman test statistic. All three methods were only used for the analysis of the complete dataset for the purpose of visualization and comparison.

3. Results

After determining the existence of unit roots by the ADF test and KPSS test, we can confirm the stationarity of the indicators, so it was not necessary to perform any correction (difference) of the indicators. Subsequently, we proceeded to the correlation analysis, the results of which are shown in Table 1.

Table 1. Correlation analysis

Correlation	Pearson correlation coefficient	Coefficient of determination	p-value
M&A - GDP	0.4506	0.2030	0.0000***

Source: own processing
*. **. *** represent the statistical importance of 1%. 5%. or 10%

As part of this analysis, assumptions about a positive correlation between gross domestic product and volume of cross-border mergers and acquisitions in the banking sector were confirmed. Although, there is a weak but directly proportional relationship between the mentioned indicators. The growth of the economy thus affects the percentage growth of the volume of cross-border mergers and acquisitions in the banking sector.

The results of the subsequent regression analysis by applying three panel regression methods are shown in Table 2. From the values shown, it follows that the percentage growth of GDP has a significant effect on the percentage growth of the volume of cross-border mergers and acquisitions in the banking sector. The obtained model is statistically significant and thus we can confirm the established hypothesis. However, it is clear from the values of the coefficient of determination that the resulting model explains only a fifth of the variability of the variables.

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Table 2. Comparison of regression models

	PRM	REM	FEM
constant	8.5378 [0.0000] ***	9.9603 [0.0000] ***	10.6007 [0.0000] ***
GDP	0.4779 [0.0000] ***	0.3199 [0.0000] ***	0.2880 [0.0000] ***
Adjusted R^2	0.1997		0.4579
S.E. of regression	2.1080	2.1530	1.8059
Schwarz criterion	1082.7080	1094.1820	1086.3640
rho	0.5181	0.3331	0.3332
Akaike criterion	1075.6810	1087.1550	1016.0960
Hannan-Quinn	1078.5100	1089.9840	1044.3830
Durbin-Watson	0.8611	1.1684	1.1684

Source: own processing

On the basis of the test of joint significance of the means of different groups and of the Breuch-Pagan test statistics and Hausman test statistics (Table 3), we prefer the model of random effects. 1% growth in the economy will cause a 32% increase in the volume of cross-border mergers and acquisitions.

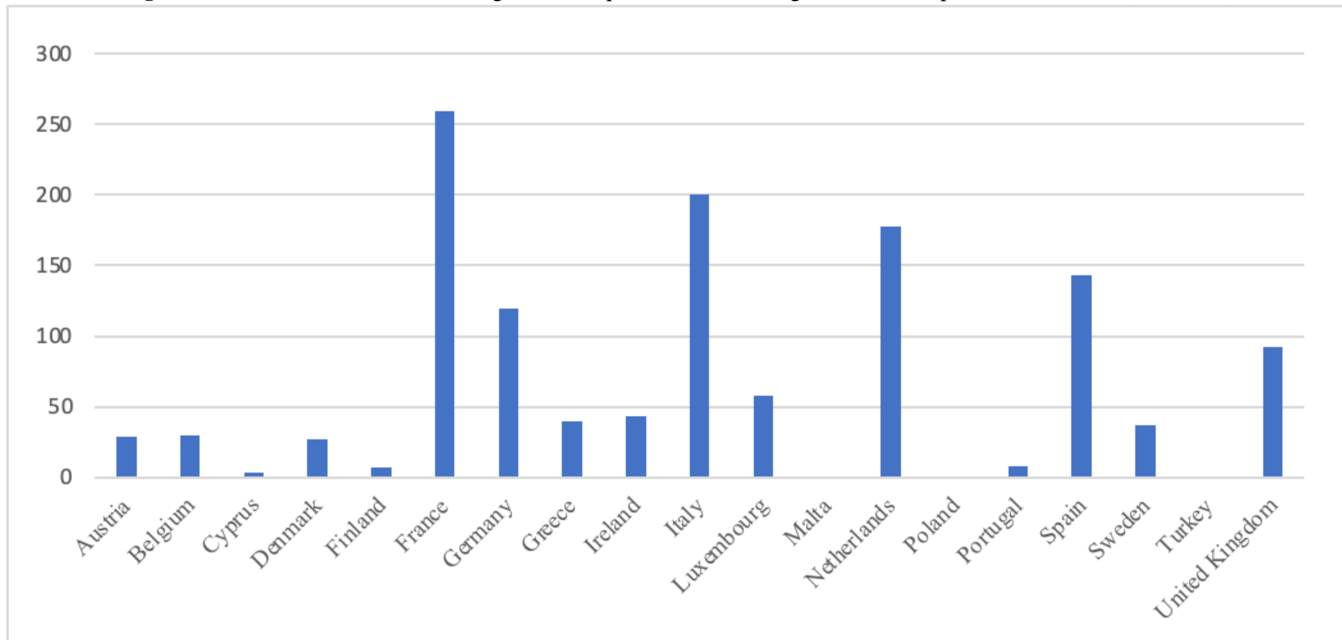
Table 3. Panel test statistic for regression model selection

Panel test	F/LM/H	p-value
Test of joint significance of differing group means	5.9563	0.0000
Breuch-Pagan test statistics	52.7289	0.0000
Hausman test statistics	1.8649	0.1721

Source: own processing

Figure 1 and 2 shows the volume and the number of cross-border mergers and acquisitions in the banking sector for the period 2004-2021. For the sake of clarity, the data is available in summary for the monitored period.

Figure 1. Volume of cross-border mergers and acquisitions in banking sector for the period 2004-2021, (v mil. Eur)



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Source: own processing

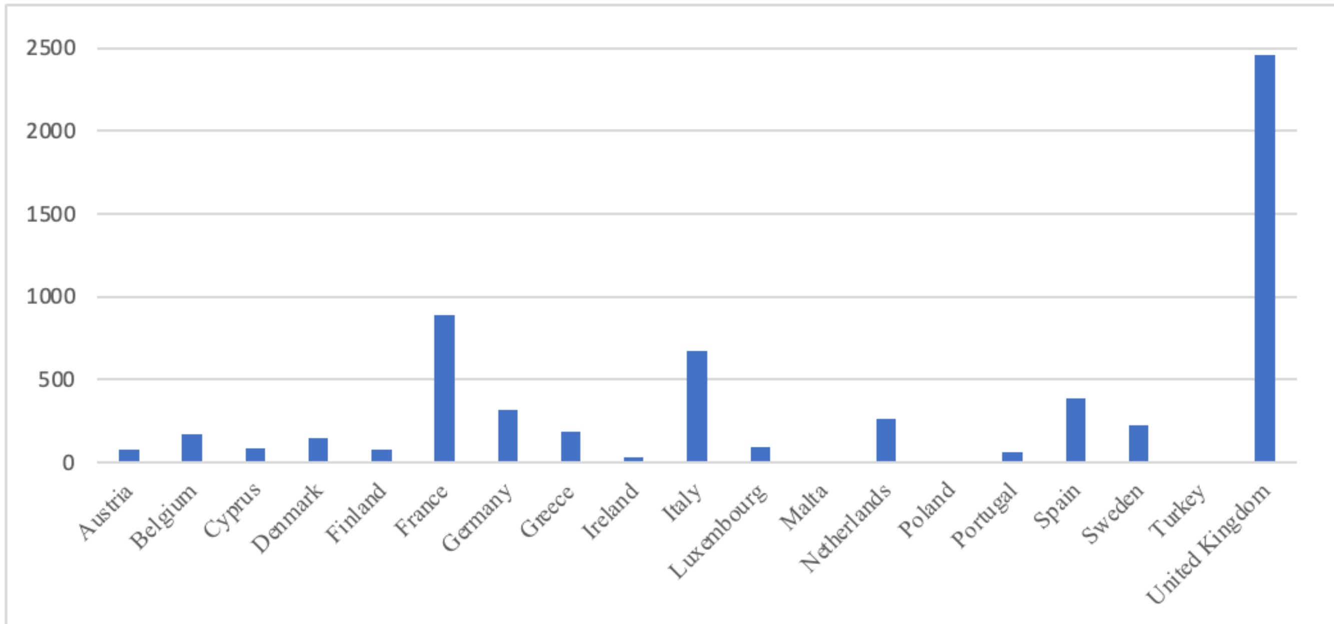

Figure 2. Number of cross-border mergers and acquisitions in banking sector for the period 2004-2021
Source: own processing

The countries with the largest volume of cross-border mergers and acquisitions in the banking sector for the period 2004-2021 include France, Italy, the Netherlands, Spain, Germany and the United Kingdom. The largest number of cross-border mergers and acquisitions in the banking sector for the period 2004-2021 was in the United Kingdom, France, Italy, Spain, Germany and Netherlands. During the monitored years, there are changes in the given volume or number of cross-border mergers and acquisitions in the banking sector. Therefore, for a better idea, we present in table 4, the average ranking of countries in individual years according to volume and number of cross-border mergers and acquisitions in the banking sector for the period 2004-2021.

Table 4. Ranking of countries

Country	Average Rank of volume M&A	Rank of volume M&A	Average Rank of number M&A	Rank of number M&A
Austria	9,0	9	10,9	11
Belgium	8,2	7	8,6	8
Cyprus	13,8	15	12,8	15
Denmark	8,5	8	7,4	7
Finland	12,1	13	11,1	12
France	3,3	1	3,3	2
Germany	4,6	4	6,3	4
Greece	10,2	10	10,4	9
Ireland	14,5	16	14,8	16
Italy	3,8	2	2,3	1
Luxembourg	10,8	11	10,9	10
Malta	16,5	18	16,4	18
Netherlands	6,2	5	7,4	6
Poland	16,8	19	16,7	19
Portugal	11,2	12	11,3	13
Spain	4,2	3	4,3	3
Sweden	12,9	14	11,9	14
Turkey	15,7	17	16,0	17
United Kingdom	7,9	6	7,2	5

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2022 Volume 10 Number 2 (December)
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Source: own processing

3. Discussion and Conclusion

The globalization results in a strong necessity to originate and implement the new corporate strategies towards the businesses restructurizations through the various types of the M&A transactions in order to optimize the organizational structures, management capabilities, financial indicators, aiming to establish a fully optimized profitable corporations at the various business operation scales and scopes within the different product and services lines in various markets (Ledenyov and Ledenyov, 2014). Mergers and acquisitions in banking take place to enhance the wellbeing of shareholders and to attain an economic effect; the aspect of stability in mergers and acquisitions is short-lived and is usually inspired by the government. Modern banking market of the EU countries has evolved through mergers and acquisitions; strategic investors have helped countries with transitional economies ensure the stability of their banking systems, capitalize on economies of scale, and thus support their GDP growth. Several large banks operating in small open economies (and transitional economies in particular) provide the backbone for the stability of their financial sector (Novickyte and Pedroja, 2015).

Kurmanalina et al. (2017) also argue that active development of the international and national banking markets in the conditions of economic globalization is accompanied by expansion of mergers and acquisitions transactions. The expansion is dependent on the interests and positions of participants in mergers and acquisitions aimed at expanding and diversifying their activities, development of new technologies, market segments and territories, strengthening competitive position, minimizing risks, reducing costs, fulfillment of obligations, and the involvement of highly qualified specialists. Therefore, in the banking sector M&A deals are one of the main forms of manifestation of the process of centralization of bank capital.

According to Long (2015) one of the primary objectives for M&A is to reach growth at the strategic level in terms of size and customer base. With the power of M&A in the banking sector, the banks can achieve strategic benefits, growth in operations and minimize their expenses to a sizable extent. Therefore, more and more international and domestic banks all over the world are engaged in M&A activities. In recent years, a number of academic studies in economics and corporate finance have measured the profitability of companies (banks) before and after M&A. The value of this approach is that it can be used to diagnose strengths and weaknesses of the company's performance, whether it is profitable or not. However, whether M&A lead to improved performance is a debatable issue. Some results indicated that M&A have synergistic effects; others have concluded negative effects; others showing mixed or insignificant results. No definite conclusion can be drawn thus there is a need to explore this area further.

Decisions aimed at implementing a merger or acquisition as one of the alternatives for achieving the company's strategic goals are primarily based on a general effort to increase efficiency, financial and capital motives, and market motives. Entrepreneurs can very easily find themselves in a bad financial situation (Bič, 2022). In the current economic environment, among the motives for mergers and acquisitions, the necessity of restructuring or the effort to prevent the bankruptcy of companies, often due to unexpected and disruptive changes that in a short period of time will cause a serious liquidity crisis and a rapid decrease in value for the owners of the company. These transactions are time-consuming and sensitive (Hečková et al., 2018). Therefore, the question arises here as well, whether the size of the economy, measured through the volume of GDP, has an impact on the volume of M&A implemented in the given countries. This research study confirmed this assumption about a positive correlation. The result of partial analyses was the fact, that growth of the economy affects the percentage growth of the volume of cross-border mergers and acquisitions in the banking sector of the European Area. The countries with the largest volume of cross-border mergers and acquisitions in the banking sector for the period 2004-2021 include France, Italy, the Netherlands, Spain, Germany and the United Kingdom.

Ayadi and Arnaboldi (2008) argue that M&A allows the resulting company to obtain efficiency gains through cost reductions (or cost synergies), revenue increases (or revenue synergies), the exchange of best practices and/ or risk diversification. Cost synergies result from an improved organization of banking production, a better scale and/or a better combination of production factors. The core objective is to extract the benefits from cost complementarities and economies of scale and scope. Revenue synergies also derive from a better combination of production factors which is mainly typical for economics with higher economic growth and volume of GDP. Finally, Aljadani and Toumi (2019) confirmed that the deregulation process in the banking industry, which has occurred mainly in most developed countries in the European Union, with the subsequent increase in the level of competition, forced banking entities to react to a new competitive scenario. Mergers and acquisitions were a frequent response in many developed European countries with higher volumes of GDP, and good management of the integration process and the consolidating banks clearly contributed to the success of mergers and acquisitions.

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