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IMPACT OF THE SPECIALIZATION OF SELECTED ECONOMIC SECTORS ON THE VOLUME OF CROSS-BORDER MERGERS AND ACQUISITIONS IN THE COUNTRIES OF THE EUROPEAN AREA

VPLYV MIERY ŠPECIALIZÁCIE VYBRANÝCH SEKTOROV EKONOMIKY NA OBJEM CEZHRAŇIČNÝCH FÚZIÍ A AKVIZÍCIÍ V KRAJINÁCH EURÓPSKEHO PRIESTORU

Abstract: *The main aim of the paper is to quantify the impact of the specialization rate calculated on the basis of the Michael Index on the volume of realized cross-border mergers and acquisitions in the target countries of the European area in the monitored period 1998-2015. This paper focuses on the degree of specialization (Michaelyho index), which is defined as the difference between the proportion of the studied commodity groups in the total national exports and the share of commodity groups surveyed in the national import. Over the reporting period 1998-2015, countries such as Bulgaria, Greece, Hungary, the Slovak Republic and Cyprus have achieved an average degree of specialization in the manufacturing and service sectors, where the business environment has been gradually improving.*

Key words: *Competitiveness, export, import, Michaely index, cross-border mergers and acquisitions*

Kľúčové slová: *Konkurencieschopnosť, export, import, Michaelyho index, cezhraničné fúzie a akvizície*

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JEL: F15, F21, F23

Introduction

Over the twentieth century, mergers and acquisitions (M&A) activities have expanded and become more and more interesting, mainly because of the growing interest of foreign investors in countries in transition [1]. Most M&A studies use a micro-economic perspective and

scientific research on macro-economic determinants of M&A whose focus is inadequate, especially as regards the provision of empirical evidence on cross-border M&A determinations targeting European countries [2].

Globalization, liberalization, industry consolidation, privatization, increasing competition as well as rapid technological change are global phenomena that have supported the company's strategies for external growth, strengthening the competitiveness and inherent key positions of companies in the market. Capital allocation is becoming increasingly complex within and between countries [3]. According to Ferencikova et al. (2013) [4] is taking place in an environment of increasing simultaneous fragmentation and globalization of markets, a rapid pace of change and the elimination of tariff barriers worldwide, in an environment that is a natural driving force for the growth of multinational corporations in different sectors. M&A is a form of organizational concentration that is part of the growth strategies of companies worldwide [5].

According to Bobáková, Hečková (2007) [6] whatever the approaches to the definition of competitiveness, it is certain that the factual content of this concept is a different value of the commodity on the foreign market depending on the influence of various factors that determine the country's competitiveness. This is ultimately reflected in economic growth, price policy and employment. The qualitative characteristics of the sources of competitive advantage significantly influence the long-term sustainable growth performance of the economy.

The concept of competitiveness is inherently linked to economic development in a market economy [7].

Bovée, Thill (1992) define competitiveness as the ability of the national industry to innovate and modernize to the next level of technology and productivity. They describe four basic competitiveness factors of [8]:

- strategy, structure and rivalry as conditions for the creation, organization and management of enterprises,
- demand conditions, including market size, exposure of goods, services and ideas,
- related industries,
- conditions of the factor such as natural resources, level of education and experience and wages.

According to Ubrežiová (2008), the competitiveness of individual countries must be assessed according to theories such as [9]:

- Comparative advantage developed by David Ricardo based on the theory of absolute advantage developed by Adam Smith.
- Heckscher - Ohlin theory of production factors.
- The impact of the life cycle of an international product.
- Theory - the first on the market.
- Porter's theory of competitive advantages - conditions, demand, composition and strength of competition, role of opportunities, obligations of government.
- Openness of the economy as a source of labor productivity growth - rapid change of enterprises, reduction of market prices, changes in prices, revenues from scale of production, impacts of new technologies and assessment of competitiveness of countries.

Data and methodology

This paper discusses the degree of specialization (measured by the Michael Index) and its impact on the volume of cross-border mergers and acquisitions realized in the European area countries in the manufacturing and services sectors during the reporting period 1998-2015. The dataset containing the records of mergers and acquisitions in the European area was based on Zephyr (Bureau van Dijk 2016) [10] data, supplemented with data on exports and imports of individual countries from the statistical offices of the countries under review.

This database includes mergers and acquisitions data from 16 source countries¹ to 25 target countries² within the manufacturing sectors³ and service sectors⁴.

Michael Michaely (1962, 1967) [11] constructed a so-called Country Difference Index in order to measure the overall difference in the composition of the commodity trade. The index value ranges from 0-1; the higher the index value, the less similar are the export and import composition of the country under review.

The Michael Index (MI) has a wide range of applications. Its use is recommended when measuring the degree of similarity of business models, eg. comparison of the country's import and export models, the export and import models of two countries or a group of countries, etc. The index is an excellent indicator of the dynamics of the country's export structure, i. dynamics of the revealed comparative advantage. It indicates the intensity of change rather than its direction [12]. The Michael Index is also used as a measure of specialization in international trade at sectoral level [13].

The Michael Index assesses competitiveness at the sectoral level based on the difference between the share of the surveyed commodity group in total national exports and the share of the surveyed commodity group in national imports [14]:

$$MI = \frac{X_{ij}}{\sum X_{ij}} - \frac{M_{ij}}{\sum M_{ij}}, \text{ while:}$$

X_{ij} - export of commodity group and country j ,

M_{ij} - import of commodity group i country j ,

$\sum X_{ij}$ - total national export,

$\sum M_{ij}$ - total national import.

¹ Belgium, Republic of Cyprus, Denmark, Finland, France, Greece, Netherlands, Luxembourg, Republic of Malta, Federal Republic of Germany, Republic of Poland, Portuguese Republic, Republic of Austria, Spain, Italy, United Kingdom

² Belgium, Republic of Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Greece, Netherlands, Republic of Lithuania, Latvia, Luxembourg, Hungary, Malta, Federal Republic of Germany, Portuguese Republic, Republic of Austria, Romania, Slovak Republic, Republic of Slovenia, Spain, Italy, Turkey, United Kingdom

³ Chemical, Rubber, Plastic & Non-metallic Products, Construction, Food, Beverages & Tobacco, Gas, Water & Electricity, Machinery, Equipment, Equipment & Recycling, Metals & Metal Products, Textiles, Clothing & Leather

⁴ Banking, Hotels and Restaurants, Insurance Companies, Post and Telecommunications, Transport

The formulation of results achieved depends on the achieved index value.

For Michaely index:

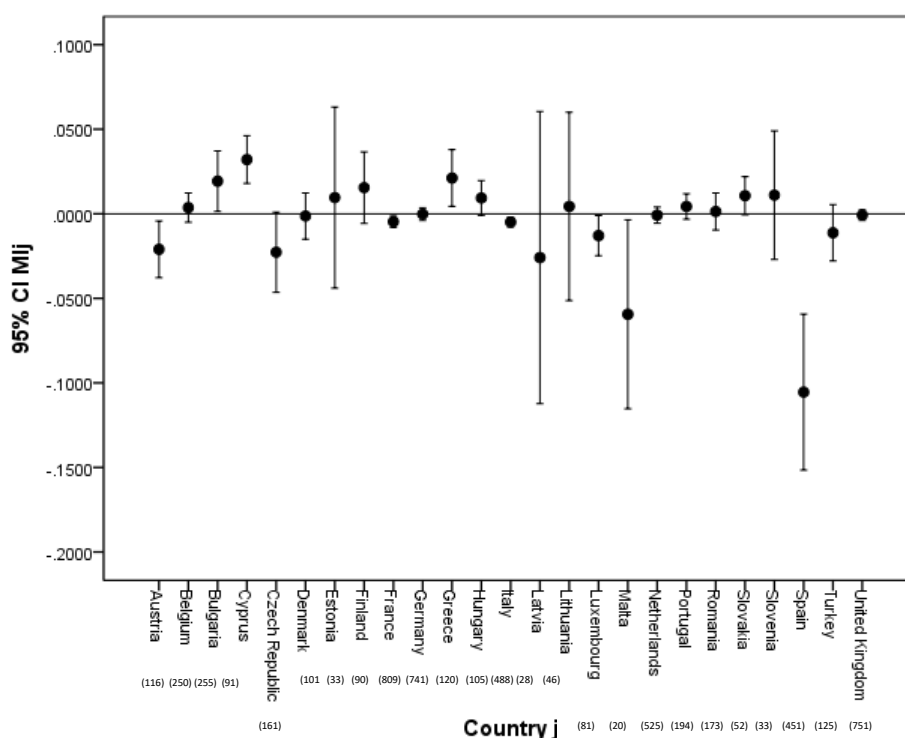
$0 < M_{ij} < 1$ points to a certain degree of country specialization in a given commodity group,

$-1 < M_{ij} < 0$ indicates insufficient country specialization in the commodity group.

Analysis and results

The main objective of the paper is to quantify the impact of the specialization rate on the volume of cross-border mergers and acquisitions realized in the target countries of the European area in the monitored period 1998-2015.

We measured the degree of specialization of the manufacturing and service sectors in the countries of the European area during the period 1998-2015 by using the above mentioned Michael index. We calculated the Michaely index from the data obtained on exports and imports of the individual manufacturing and service sectors in the countries of the European area, as shown in Figure 1.



Legend: the numbers in () are the numbers of M&A in each target country in all sectors

Picture 1 Average values of realized cross-border mergers and acquisitions within sectors in the target countries of the European area in the reference period 1998-2015 (Michaely index)

(Source: own processing)

The mean values with the 95% confidence interval of the Michael Index for the target countries, ie countries to which cross-border mergers and acquisitions were directed, are shown in Figure

1. For countries whose average Michael Index values are below a straight line (with the $y = 0$ guideline), we are talking about a lack of average country specialization. Conversely, for countries whose average Michael Index values are above the straight line (with the $y = 0$ guideline), we are talking about the country's average specialization in the sectors we consider (production and service sectors). Extreme values are formed by Malta, Spain and Belgium, where the Michael Index is below 0 and therefore countries do not have narrowly specialized production and service sectors. During the reporting period, 20 transactions were carried out in Malta in the form of cross-border mergers and acquisitions, which means that the number of transactions in the country decreased as the specialization rate decreased. There were 260 cross-border M&A transactions in Belgium and 451 cross-border M&A transactions in Spain. In these countries, the specialization rate did not affect the number of cross-border mergers and acquisitions realized. In 2009, Spain was among the three most important European regions for the development of investment activities, which could have had a positive impact on the number of cross-border mergers and acquisitions in the country. The calculated Michael's index, which is higher than 0 in Bulgaria, Greece, Hungary, the Slovak Republic and Cyprus, indicates the average specialization of countries in the manufacturing and service sectors. Using the T bars (T bars), which show us the 95% confidence interval of the Michael's average value estimate, we see that the highest number of cross-border M&As realized was in Bulgaria and Greece, which could be due to lower taxes in Bulgaria and Greece. improving the business environment. The essence of specialization is that European countries can increase their standard of living and real income precisely by specializing in producing and delivering the services they can produce and deliver with the highest labor productivity and the lowest cost. It is with such products and services that a country will enter into foreign trade relations with other countries in order to obtain from them goods and services that are more advantageous for it than to produce and provide at home. The highest number of cross-border M&A transactions in the reporting period was in France (809), Germany (741), Italy (488), the Netherlands (525), Spain (451) and the United Kingdom (751). The number of cross-border mergers and acquisitions implemented in these countries could have been influenced by the high-quality business environment, developed infrastructure and scientific and technological advances.

Table 1 Competitiveness of production and service sectors in the target countries of the European area in the reference period 1998-2015 analyzed by the Michael Index

		Banks	Chemicals, rubber, plastics, non-metallic	Construction	Education, Health	Food, beverages, tobacco	Gas, Water, Electricity	Hotels & restaurants	Insurance companies	Machinery, equipment, furniture, recycling	Metals & metal products	Other services	Post and telecommunications	Primary Sector (agriculture, mining, etc.)	Publishing, printing	Textiles, wearing apparel, leather	Transport	Wholesale & retail store	Wholesale & retail trade	Wood, cork, paper
		Mij	Mij	Mij	Mij	Mij	Mij	Mij	Mij	Mij	Mij	Mij	Mij	Mij	Mij	Mij	Mij	Mij	Mij	Mij
Austria	Mean	-0.06	-0.20	-	-	0.02	0.00	0.01	-	-0.03	0.00	-0.01	0.00	-	0.01	0.01	0.01	0.00	0.14	0.00
	Count	14	5	0	0	6	4	1	0	24	4	43	2	0	3	1	1	1	3	2
Belgium	Mean	-0.06	-0.07	0.01	0.00	0.00	0.02	0.00	0.00	0.01	0.04	0.02	-0.01	0.00	0.01	0.00	0.00	0.01	-0.02	0.02
	Count	20	11	2	1	11	10	9	3	14	8	131	3	1	1	1	11	2	12	2
Bulgaria	Mean	0.18	-0.02	-0.04	-	0.00	0.09	0.02	0.01	-	-0.03	0.01	-	-0.07	-0.02	-0.03	0.00	-0.01	-0.06	-0.02
	Count	20	9	3	0	10	11	3	5	0	2	143	0	5	1	4	1	6	5	1
Cyprus	Mean	0.02	-	-0.02	-0.02	0.00	-	-	0.00	-0.06	-0.04	0.10	0.03	-	-	-	-0.01	-	-0.02	-
	Count	20	9	3	0	10	11	3	5	0	2	143	0	5	1	4	1	6	5	1

	Count	51	0	1	3	4	0	0	1	1	3	22	1	0	0	0	3	0	1	0
Czech Republic	Mean	0.20	0.26	0.01	-	0.00	0.01	0.02	0.01	0.05	0.01	0.03	0.03	0.06	0.00	0.00	0.01	0.15	0.00	0.22
	Count	18	14	9	0	9	10	1	3	13	9	46	3	1	1	2	4	3	12	1
Denmark	Mean	0.00	0.01	0.01	-	0.00	-	-	-	0.06	0.01	0.03	-	0.00	0.12	-	0.00	-	0.01	0.00
	Count	3	5	1	0	5	0	0	0	19	2	47	0	1	1	0	6	0	7	1
Estonia	Mean	0.03	0.34	0.08	-	0.22	0.04	-	-	0.03	0.01	0.01	-	-	-	0.12	0.09	-	0.01	0.03
	Count	2	1	2	0	3	5	0	0	1	1	12	0	0	0	1	2	0	2	1
Finland	Mean	0.00	0.00	-	-	0.00	0.00	-	-	0.01	-	0.03	-	-	-	-	0.01	0.00	0.01	0.04
	Count	2	2	0	0	3	2	0	0	11	0	47	0	0	0	0	11	1	6	3
France	Mean	0.07	0.02	0.01	0.01	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.00	0.01	0.01	0.02	0.00	0.00	0.04	0.01
	Count	30	34	14	1	32	21	14	10	76	14	424	6	2	22	18	25	5	40	13
Germany	Mean	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.02	0.01	0.00
	Count	30	47	13	2	23	18	9	14	125	15	343	1	4	6	5	25	1	26	21
Greece	Mean	0.07	0.04	-	-	0.18	0.00	-	0.00	0.00	0.06	0.02	0.07	-	0.01	-	0.01	0.02	0.03	0.00
	Count	47	4	0	0	2	3	0	5	2	1	37	3	0	3	0	3	1	7	1
Hungary	Mean	0.05	0.02	0.01	0.07	0.00	0.01	0.05	0.00	0.01	0.00	0.00	0.04	0.00	-	-	0.02	-	0.02	0.07
	Count	16	5	4	1	6	8	2	4	4	2	34	1	5	0	0	6	0	4	2
Italy	Mean	0.02	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.03	0.01
	Count	84	19	3	2	21	24	18	15	43	12	158	11	1	3	6	19	4	20	4
Latvia	Mean	0.31	0.01	-	-	0.09	0.08	0.03	0.04	-	-	0.05	-	0.22	-	-	-	-	0.05	-
	Count	3	3	0	0	2	1	1	2	0	0	10	0	4	0	0	0	0	2	0
Lithuania	Mean	0.16	0.15	-	-	0.00	-	-	0.07	0.00	-	0.03	-	0.03	-	-	0.23	-	-	-
	Count	8	9	0	0	8	0	0	3	1	0	14	0	1	0	0	2	0	0	0
Luxembourg	Mean	0.01	0.02	-	-	-	-	-	0.00	0.00	0.06	0.02	0.00	0.03	0.01	-	0.02	0.01	0.02	-
	Count	17	1	0	0	0	0	0	2	1	3	49	1	1	2	0	1	1	1	0
Malta	Mean	0.03	-	-	-	-	-	-	0.29	-	0.10	0.04	0.02	0.12	-	-	0.12	-	-	-
	Count	4	0	0	0	0	0	0	1	0	1	11	1	1	0	0	1	0	0	0
Netherlands	Mean	0.02	0.03	0.00	0.01	0.04	0.01	0.01	0.00	0.06	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.01
	Count	25	27	6	2	14	8	6	15	35	11	288	6	10	14	1	22	2	27	3
Portugal	Mean	0.04	0.03	0.00	0.01	0.02	0.00	0.01	0.01	0.00	0.01	0.00	-	0.02	0.04	-	0.02	0.00	0.00	0.02
	Count	43	23	3	2	12	16	1	2	1	4	56	0	3	4	0	8	1	6	9
Romania	Mean	0.05	0.04	0.02	-	0.02	0.00	0.02	0.00	0.06	0.12	0.01	0.00	0.02	-	0.10	0.03	0.03	0.03	0.04
	Count	34	13	7	0	13	9	3	13	11	7	39	1	4	0	3	1	3	4	3
Slovakia	Mean	0.02	0.01	-	-	0.01	0.01	-	0.01	0.00	0.01	0.02	0.16	0.00	-	-	0.03	0.04	0.00	-
	Count	16	4	0	0	4	4	0	1	1	1	12	1	2	0	0	2	1	3	0
Slovenia	Mean	0.08	-	-	-	0.02	0.00	-	-	0.05	0.06	0.01	-	-	-	-	0.08	-	0.14	0.01
	Count	11	0	0	0	3	2	0	0	2	1	5	0	0	0	0	3	0	3	1
Spain	Mean	0.05	0.51	0.01	0.03	0.10	0.22	0.06	0.07	0.29	0.06	0.05	0.01	0.00	0.01	0.32	0.17	0.01	0.12	0.01
	Count	38	22	8	6	21	33	8	21	30	8	171	4	4	5	4	16	2	36	6

Turkey	Mean	0.03	0.08	-	0.05	0.02	0.03	0.03	0.02	0.01	0.01	0.01	-	0.02	-	0.02	0.02	0.37	0.00	0.02
	Count	15	13	0	1	10	2	2	7	5	7	35	0	5	0	1	1	3	8	2
United Kingdom	Mean	0.04	0.02	0.01	0.00	0.02	0.01	0.00	0.02	0.02	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.02
	Count	54	33	4	2	28	19	15	10	88	20	360	5	14	15	10	20	4	31	8

(Source: own processing)

The average values calculated by the Michaely index in the target countries of the European area in the production sector and in the service sector in the reporting period are shown in Table 4. The values of the Michaely Index are marked in red and green in the table. The red color indicates 25% of the lowest values of the Michael index and the green color indicates 25% of the highest values of the index. For each country of European territory, an indication of the number of cross-border mergers and acquisitions carried out in that production or service sector is recorded. Above-average observations with values higher than 50% of observations are highlighted in yellow in the table. As in the source countries (Table 3), the target countries in the banking sector in Austria, Belgium, France, Italy and the United Kingdom have a Michely index lower than 0 and hence do not have an average specialization in the sector. The difference between source and destination countries is the number of cross-border mergers and acquisitions implemented. It can be seen that in the target countries the highest number of cross-border M&A transactions was carried out only in Italy and the United Kingdom, where the lack of specialization in the sector does not affect the implementation of M&A. In the chemical, rubber, plastic and non-metal sectors, the Michaely Index indicates that if the index is lower than 0, countries do not have an average sector specialization, and therefore the number of cross-border mergers and acquisitions is decreasing (Austria, Belgium, Greece, Hungary). , Luxembourg) and vice versa, if the Michaely index is higher than 0, the countries have an average specialization in that sector and therefore the higher the index value, the greater the number of cross-border M&As implemented (France and Germany). For the sector, other services Austria, the Czech Republic, Denmark, Romania and Spain are not narrowly specialized in the sectors of the sector, but despite the fact that more cross-border mergers and acquisitions have been channeled into the sector over the period under review. the sector involves different sectors. The Michaely Index indicates the average specialization in the other services sector in Belgium, Bulgaria, Finland, France, Germany, Italy, the Netherlands, the United Kingdom and Cyprus, which represents a higher country specialization in the sector as well as a higher number of cross-border mergers and acquisitions. to countries. There are extreme cases in Germany, France and the United Kingdom, where the index tells us a value slightly higher than 0, which means that countries do not have above-average specialization, but an excessive number of cross-border M&A has been channeled to countries. strong cultural influences and quality of the environment. Countries in Europe in the remaining manufacturing and service sectors, based on Michael Index calculations, do not indicate significant industry specialization and were therefore not relevant to investors from other countries during the reporting period.

Discussion

Based on the results of calculations of the MI (Michaely Index) according to MI, we can conclude that the manufacturing and service sectors in the target countries of the European area in the reporting period 1998-2015 achieved a specialization rate in some target countries

(Bulgaria, Greece, Hungary, Slovak Republic). Republic, Cyprus). Countries that have achieved a degree of specialization have been considered appropriate countries for several forms of investment, for example. cross-border mergers and acquisitions. Source countries have seen the attractiveness of the target countries mainly due to the country's increasing competitiveness, low taxes and an improving business environment. The most attractive sectors that were the main target of the merger are considered eg. banking, chemical, rubber, plastic and non-metallic products, other services. Countries that have achieved a degree of specialization in the manufacturing and service sectors need to be viewed from two angles. On the one hand, the individual sectors of the European space countries are facing increasing competition from other developed economies, particularly in the high-tech sector. On the other hand, multi-sector production is increasingly moving to low-cost economies, some of which focus on higher value-added segments

Conclusion

At present, it is crucial for the countries of the European area to establish themselves and maintain themselves in global markets. Continuous growth in competition, increasing demands and demands from companies are manifested in mergers or acquisitions, thus limiting opportunities for weaker and less competitive companies in the target countries. Based on the results of the effect of the specialization rate (MI) in the target countries of the European area over the reporting period on the volume of cross-border mergers and acquisitions realized, we can conclude that the degree of specialization of the target countries seeking business as an investment opportunity.

Záver

V súčasnosti je kľúčové pre krajiny európskeho priestoru presadiť sa a zároveň sa udržať na globálnych trhoch. Neustály nárast konkurencie, zvyšujúce sa nároky a požiadavky od obchodných spoločností sa prejavujú spájaním formou fúzií či akvizícií a tak obmedzujú príležitosti pre slabšie a menej konkurencieschopné obchodné spoločnosti v cieľových krajinách. Na základe výsledkov vplyvu miery špecializácie (MI) v cieľových krajinách európskeho priestoru za sledované obdobie rokov na objem realizovaných cezhraničných fúzií a akvizícií, môžeme konštatovať, že miera špecializácie cieľových krajín, ktoré vyhľadávajú obchodné spoločnosti ako investičnú príležitosť.

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