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IDENTIFICATION OF THE BANKING BUSINESS MODELS IN THE FINANCIAL DEVELOPMENT CONTEXT (THE CASE OF THE MACEDONIAN BANKING SECTOR)

Abstract

This study deals with the corporate strategy of the commercial banks in Macedonia and their business models, particularly emphasizing on the bank's structure and performance. For this purpose cluster analysis of 14 banks is conducted in order to identify the existing matrix of bank business models and to consider the existence and determination of strategic groups in the Macedonian banking system clusters. The results are leading to clear distinction between two bank clusters: high performance group and low performance group of commercial banks. In addition to the analysis the possible strategic adjustments are discussed in the context of the financial development of banking in Macedonia and the financial globalization. The paper may be useful for the corporate management of the banks and other financial institutions, particularly in the field of marketing and risk management.

Key words: *banking business models, cluster analysis, performance groups, financial development*

JEL classification: *G21*

ИДЕНТИФИКАЦИЈА БАНКАРСКИХ БИЗНИС МОДЕЛА У КОНТЕКСТУ ФИНАНСИЈСКОГ РАЗВОЈА (СЛУЧАЈ МАКЕДОНСКОГ БАНКАРСКОГ СЕКТОРА)

Абстракт

Ова студија се бави корпоративном стратегијом комерцијалних банака у Македонији и њиховим пословним моделима, посебно наглашавајући структуру и учинак банке. У ту сврху се врши кластерска анализа 14 банака како би се идентификовала постојећа матрица банкарских модела пословања и размотрило постојање и одређивање стратешких група у македонском банкарском систему - кластерима. Резултати доводе до јасне разлике између два кластера банке: групе пословних банка са високих перформанси и групе са ниским перформансама.Као додатак анализе, дискутирано је могуће стратешко прилагођавање у контексту финансијског развоја банкарства у Македонији и финансијске глобализације. Рад може бити користан за корпоративно управљање банкама и другим финансијским институцијама, посебно у области маркетинга и управљања ризицима.

Introduction

According to the Strategic Groups Theory, strategic group is a group of corporations that make similar decisions in key areas (Koller, 2001), reflected in the similar values of strategic variables, distinguishing the groups with high and low performance - high / low performance groups. That means banks that are located in the same strategic group have similar patterns of response to changes in external factors (for eg. regulatory changes). The strategic groups can be differentiated according to their key resources and market characteristics, distinguishing clusters based on bank resources and clusters based on market characteristics. In terms of lower levels of market development (shallow financial markets) banks can be classified into clusters according to the structure of resources.

Profound changes in the banking sector are no longer optional, especially in the case of the low performance group of banks. The strengthening of the capacity for delivering strategic changes is basic precondition for sustainable development in the banking industry. Furthermore, as a result of the Great Financial Crisis of 2008 the world leading banking experts promoted the access point- analysis of banking risks through analysis of banking business models as a risks source in the context of financial globalization. This is the major theoretical standpoint of this research. The study elaborates the question in the case of Macedonia in order to set the foundations of a modern structural analysis of the banking system on the path to higher levels of financial integration and development.

The Macedonian banking system includes fifteen commercial banks in it. Eleven banks are predominantly foreign-owned, of which seven are part of banking groups. For the consideration of the business models, it is important to mention that the Macedonian banks are operated as universal banks, according to the types of registered activities. The list of activities varies from bank to bank. The statistical requirements of the Central Bank divide the banking activities in the following segments: population, non-financial sector, financial institutions and state.

The world practice divides banks in three business models by their major activities: retail banking, wholesale banking and investment banking. Otherwise, according to the current legislation in Macedonia there is no commonly accepted basic criterion for distinguishing (segmentation) of banking activities between retail banking and wholesale banking. Some banks according to the internal and the banking group’s policies make such distinctions, and such data is available in the Annual Reports of banks under IFRS in the section “Reporting by Operative Segments” in terms of the financial result as well as the separation of assets and liabilities section.

Some banks in the area of retail banking activities include banking operations with individuals, while others except for the individuals here include operations with SMEs. The wholesale banking terminology is not widely used by the Macedonian banks and is subject to miss-use. Some banks have equated it with the commercial banking, corporate banking, while some of the banks include only activities with large clients (institutional clients, large corporations and state) within the wholesale banking segment. The conclusions delivered from the banking statements analysis is that the sectorial division of banking activities in Macedonia is not harmonized with the international standards, especially in the case of the local banks. The investment banking activities have minor participation within Macedonian banking system, usually offered on the margines of the commercial bank’s offer of banking products.

Generally speaking, the business model of the Macedonian banks is labeled as traditional - featuring a simple structure of traditional deposit and credit activities and minor representation of activities in the field of investment banking, primarily as a result of the demand for traditional banking products. The level of accuracy of the terminology is not sufficiently supportive to the financial development context of the Macedonian banks.

A comparative approach to the analysis of the structure of the Macedonian banking system against the European banking system indicates relatively shallow banking market in terms of its rich array of banking institutions operating in the EU, which implies differentiation of business models, legal forms and ownership structures. The key variables taken to identify the main business models in the EU are: the size of the banks, sources of funds, as well as exposure to foreign entities.

For the purposes of this study various phenomena, processes, conditions and structures have been analysed that are present in the world practice and literature, thereafter similarities and differences are identified, being present in the case of Macedonia in the context of the processes of the financial globalization. Given the fact that the survey is the first of its kind in the case of the Macedonian banking system, first the case was tentatively analyzed in order to create a preliminary model that is meeting the needs of the study. Subsequently the econometric models used in referring researches on regional and global level were analyzed (Ayadi, R et all, 2011). The world research practis in this field varies according to the number of analyzed banks and the number of variables observed in samples, but the coverage of variables on financial performance is constant within the majority of studies (Altunbas at al.,2011). According to recent relevant researches it is confirmed that the business model significantly affects the financial performance and risk exposure of banks. Analogously, by comparing financial performance we can successfully determine the banks linkage with similar banking business models and risk profiles. The following financial variables are chosen as conceptually significant variables that are further analyzed in the case study: the financial indicators of funds structure (Diamond, 1984), structure of liabilities (Gatev et al, 2009), liquidity, profitability (Beck T. et al., 2013), efficiency and capital adequacy (Le Leslé and Avramova, 2012). Indicators on the ownership structure are not taken into account due to the dominance of private capital into the banking system in Macedonia. Also indicators of the revenue structure are not included because of the dominance of interest income in all banks. The selected eight key indicators for individual banking institutions are analyzed for a period of four years. Relevant data is used from the statistics of the Central Bank, commercial banks, as well as statistical data from other relevant international financial institutions (BIS, ECB, WB, IMF etc) and the corresponding literature by famous experts and banking scholars.

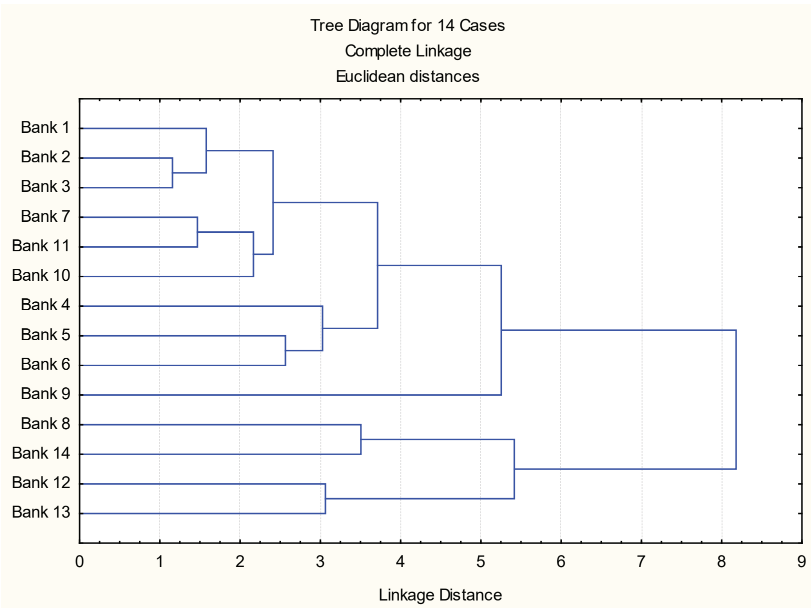
Identification of banking business models in the Macedonian banking sector

Explanation of the results of the cluster analysis

Based on the analysis of selected quantitative indicators the division of a cluster of large, medium and small banks is reviewed and chosen as the most adequate. For its financial performance, the cluster of large banks determines the average values in the entire sample, concluded from the values of the variance. The cluster of small banks has lower performance in terms of profitability and particularly affects the determination of the marginal value of the intervals. With the improvement of their performance comes to reducing the coefficient of variation of individual variables. Small and medium-sized banks show similar trends and performance, especially regarding the operating expenses relative to total assets, amount of deposits in relation to total liabilities etc. It must also be noted the tendency for reduction of deposits in the case of small banks due to the need of cutting expenditures in conditions of limited opportunities for placing additional assets (risks in the real sector, restrictive credit policies, etc). The large banks cluster does not perform this tendency (if the variables are considered as relative indicators). Large banks due to large amounts of deposits might face with dual problems: expensive uncompetitive credit products or lower financial results. We must emphasize that this situation could be theoretically differentiated depending whether the bank is a local bank or a part of an international banking group (local banks availability of alternative sources is smaller and their dependence on the amount of mobilized deposits is relatively stronger). In such circumstances, banks that are part of the banking group have a competitive advantage if they receive an inflow of capital by the parent bank. Some medium-sized banks still stand out in terms of the variable which represents the ratio between loans and deposits, which reflects the expansive credit policy of the certain banks.

The previous interpretation of the similarities in the financial performance of the commercial banks is confirmed by the results of the statistical analysis carried out in the program Statistica. Due to the relatively small number of observations, as the most appropriate was selected the agglomerative hierarchical cluster analysis method, i.e all banks at the beginning of the statistical analysis are considered belonging to a single cluster. In the subsequent steps by a complete linkage method the distance values of the variables in the observed banks is examined, by analysis of the maximum distance between two entities analyzed within a cluster. The distance between the analyzed entities is measured and expressed in standard Euclidean distance (Kruskal, J.B. and Wish, M., 1978, Mergaerts, F. and Vander Vennet, R., 2016).

Dendrogram



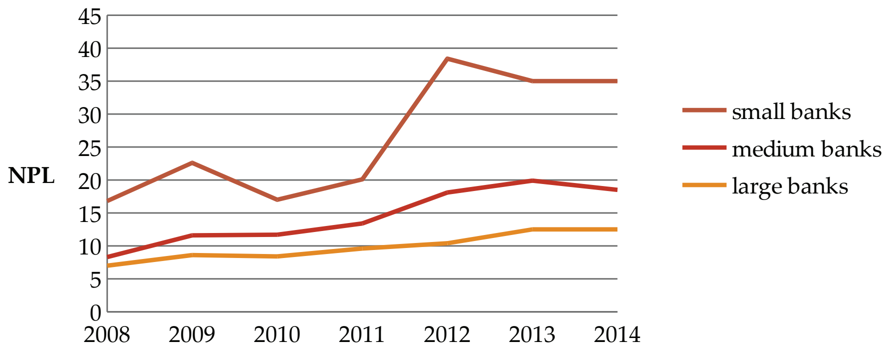
The econometric procedure is consisted of five steps of grouping of the observed banks in clusters. In the first step nine banks clusters are differentiated, with particular distinction of the similarity of the strategies of two major banks (Bank 2 and 3). In the second step six clusters are formed, including all the three major banks (Bank 1, 2, 3) into same cluster. Finally, all banks form two clusters[1].

The optimal number of clusters is determined at the point of clustering where the biggest jump is registered in the mutual distance between two subsequent steps of the clustering procedure. The Dendrogram display confirms the existence of three bank clusters of large, medium and small banks. The clusters of large and medium banks recorded significant distinction relative to the cluster of small banks, identified as **low performance cluster** for future consideration.

The indicators of credit risk as the dominant bank risk (due to the traditional nature of banking) additionaly confirm the existence of the previously identified cluster structure from the aspect of the risk exposure in the same manner additionally relating the risk issues for the individual bank clusters. The cluster of small banks risk profile is identified as more exposed to the NPL portfolio relative to the clusters of large end medium banks.

Figure 1

The participation of NPL by bank clusters



Weaknesses of the cluster analysis and specific adjustments for mitigation

First, subjectivity is a limiting factor in the cluster analysis, especially regarding the choice of analyzed banks and determining the optimal number of clusters. This issue is partly mitigated by including all commercial banks in the survey except the Macedonian Bank for Development Promotion.

Second, the cluster analysis in this paper is intended to be basic analysis of the structure of the banking system in Macedonia, so some aspects were subject to

[1] Cluster 1(Bank 1,2,3,7,11,10,45,6,9) and Cluster 2(Bank 8,14,12,13)

abstraction. This study can serve as a basis for future research in the context of the evolution of bank business models in Macedonia to higher levels of market development through innovation and segmentation with focus on the correlation with appropriate risk profiles, targeting the acceleration of the financial development within acceptable levels of risk in banking operations.

Third, for additional clarification and explanation of the results a set of qualitative variables are added to the analysis. The quantitative indicators are sufficient input and adequate bases for a short term forecast analysis. In order to appropriately address the long-term development aspects and perspectives of banks in a strategic analysis, it is considered more beneficial to single out **large banks** that are part of an international banking group like banks with the **lowest risk potential and major development opportunities**, and the **small local banks as banks with high risk potential and limited development opportunities**. The addition of the **internationalization aspects** derives the conclusion that in small banking markets (as in the case with Macedonia) the internationalization of banks by major international banking groups can be a strong factor for relatively stable growth by increasing the potentials for competitiveness, efficiency, also capacity for reorganization, availability of resources and skills and greater transparency. In the past fifteen-year period of transformation and modernization of the banking system, we have noted examples of tangible results in improving the performance of local banks through the model of entry of foreign investor (foreign bank). It is particularly remarkable case of Komercijalna Banka AD Skopje, and there are other examples of this kind (eg. the takeover of the Ohridska Banka AD Skopje by Societe Generale Bank Paris, acquisition of Export and Credit Bank by Turkiye Halk Bank, as other.

Table 1. The participation of assets by operating segments in the three largest banks in Macedonia

year	business segment	Bank 1		Bank 2		Bank 3	
		assets	index	assets	Index	assets	index
2016	retail banking	14.210.097	15%	35.460.047	53%	37.769.463	49%
	comercial banking	82.518.822	85%	31.433.314	47%	40.046.093	51%
2015	retail banking	13.401.192	14%	32.738.665	50%	34.661.719	49%
	comercial banking	79.819.273	86%	32.096.409	50%	35.919.480	51%
2014	retail banking	11.023.426	12%	28.138.459	46%	32.198.814	45%
	comercial banking	77.742.985	88%	32.368.238	54%	39.444.115	55%
2013	retail banking	9.235.899	14%	24.510.921	38%	49.113.587	68%
	comercial banking	57.902.843	86%	40.516.034	62%	23.300.212	32%
2012	retail banking	7.972.076	10%	22.939.925	38%	45.929.136	71%
	comercial banking	71.640.925	90%	37.861.035	62%	18.496.351	29%
2011	retail banking	7.639.166	13%	15.234.368	33%	41.175.645	73%
	comercial banking	51.085.230	87%	31.079.339	67%	15.294.268	27%
2010	retail banking	7.799.962	15%	13.144.027	30%	38.597.091	70%
	comercial banking	45.088.675	85%	30.237.353	70%	16.362.426	30%

Regarding the analysis of the banking activities of the **high performance group** of banks by business segments we must notify it considers data of the three largest banks as a representative sample of the high performance segment and the banking system as a whole. The general conclusion is that banks in Macedonia are using the comfort of the **universal bank business model** with reference to the marketing aspects. Some of the banks that are part of a larger international banking group, have implicit constraints in terms of directions (targets) in operations, as determined by the parent bank and significantly pre-determined individual customer segments in their banking activities directly influenced by the business strategies policies and models of the banking group. Local banks in this respect have the discretion to direct their activities in accordance with their internal policies. With small exceptions, we can note about the dominance of the corporate clients segment in the case of Bank 1(large local bank).

In the case of the Bank 2 and Bank 3 similar strategies toward segmentation of the banking activities are prevailing, particularly in the period after the year 2014. It must be borne in mind that they represent part of major **international banking groups in the EU**. The business model of Bank 3 is determined by the continuous domination of the retail banking in total banking activities, which clearly highlights the strategic objectives of the bank in corelation with the strategic goal of streamlining its operations to this retail customer segment. If we observe the basic principles that underpin the strategy of the banking group represented in Macedonia by Bank 2 (at the higher and corporate level), we may confirm the strategic decision about the dominance of retail banking, as well as the retail defined focus on certain segments of the bank daughter located in Macedonia in the period after the year 2014. If we make a brief overview of the business model of the Banking Group represented in Macedonia by Bank 3, it may be noted that it is a universal bank present in the region in the observed period, with clearly defined and targeted customer segments i.e. operational and management policies tailored towards particular market segmentation on exact profitable basis.

Table 2. The financial result in the three largest banks in Macedonia by segments

Year	business segment	Bank 1	Bank 2	Bank 3
2016	retail banking	-105.716	1.703.316	1.591.878
	comercial banking	953.072	903.400	854.157
2015	retail banking	-744.682	960.689	1.267.020
	comercial banking	1.237.787	341.879	830.979
2014	retail banking	-1.147.041	123.713	176.424
	comercial banking	1.579.526	981.381	810.794
2013	retail banking	-589.406	1.004.052	1.194.639
	comercial banking	734.669	212.277	-338.815
2012	retail banking	-1.078.389	814.201	398.284
	comercial banking	1.382.248	1.201.091	36.546
2011	retail banking	-1.013.188	60.009	350.621
	comercial banking	2.483.087	1.675.890	287.921
2010	retail banking	-1.372.884	n/a	268.599
	comercial banking	3.124.787	n/a	347.164

Regarding the banking segments linkage with the financial result the conclusions are as follows: in the case of Bank 1 (the largest local bank), the corporate clients segment realizes greater profitability relative to the retail banking segment. At the contrary the client segment retail banking realizes continuous loss. One of the reasons for this result is the high amount of deposits in this segment, as a generator of large amounts of interest expenses. The remaining two large banks (part of international banking group) are performing with substantial retail focus, but both segments work continuously on a profitable basis, with the retail banking segment autperforming the commercial banking segment. Consequently we conclude towards the dominance of retail banking strategy as a leading bank business model with higher level of profitability especially a case when it comes to international banks.

Furthermore the analysis could be extended by inclusion of additional qualitative indicators (country risk, type of listing, bank size - systemic importance) in the context of higher level of distinction and determination of optimal clusters.

Conclusion

The final result is in favor of identification of two major bank clusters: big banks that are part of an international banking group as a high performance bank cluster and lower risk profile banks; on the opposite side of the risk matrix pattern is the small local bank business model. The further identification of the low performance and vulnerable business bank models is particularly important starting point for addressing the specific issues and timely taken relevant actions and measures such as: development and implementation of financial programs for increasing the cost efficiency measures and improving the efficiency in the allocation of capital, reducing risk exposures and adequate policy adjustment of prices in terms of risk exposure, as well as market related activities in order to improve the market position through mergers, acquisitions, financial innovations especially in the case of low performance banking institutions in the financial development perspective.

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