

UDC 336.71:005.95/.96(497.7)
Original scientific paper

Klimentina POPOSKA^{*})
Marko TRPKOSKI^{})**

**PERSONNEL COSTS MANAGEMENT IN BANKING–CASE
OF THE MACEDONIAN BANKING SECTOR**

Abstract

The overall development and outcomes of business entities are primarily dependent on the adequate principles of human resource management. This presents the main reason for the classification of staff costs as one of the most specific expenditure categories in modern and dynamic business environment.

As successful personnel costs management could be identified an optimal balance establishment between the shareholders, management and employees interests, in order to reach long-term stability, growth and sustainable development of commercial banks. The identification of the key variables that affect the personal costs as an expenditure category, leads to improved analysis on banking institutions and consequently to more accurate management decisions and actions.

In the research study on the case of banking sector in Macedonia, was found that the share of personnel costs in the category of non-interest expenses depends on: capital adequacy ratio, rate of capital and reserves in total assets, share of highly liquid assets in total assets, as well as the business results presented through profitability indicators ROAE and ROAA. However the results may vary if the tests are performed on different groups of banks as well as on the individual bank institutions level. Adopted to the specific features of individual banks and combined with other banking models, this model could be a useful additional analytical tool in bank management information systems.

^{*}) Ph.D, Institute of Economics-Skopje, University Ss Cyril and Methodius-Skopje, Prolet 1, 1000 Skopje, Republic of Macedonia, E-mail: klimentinapoposka@yahoo.com.

^{**}) Ph.D, NLB Tutunska banka AD Skopje, Vodnjanska 1, Skopje, Republic of Macedonia, E-mail: m.trpkoski@yahoo.com

Key words: Banks, human resources, personal costs, model.

JEL classification: G21

Introduction

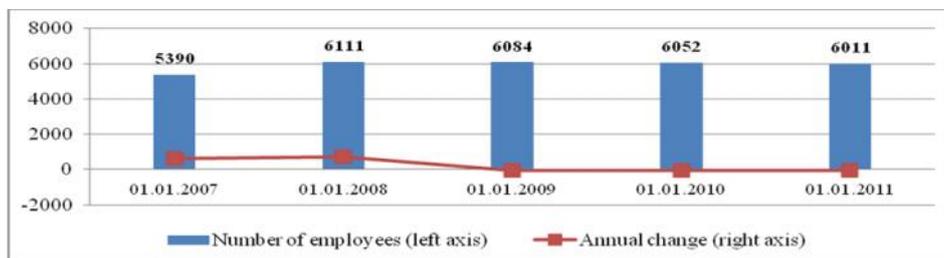
In our recent research activities related to the situation in Macedonian banking sector, we constituted alternative models in terms of: development of a new products for retail banking customers (Poposka, Trpkoski, 2013, March), analyses of the risks for banking sector connected to the companies in the construction industry (Poposka, Trpkoski, 2013, April) as well as secondary model for capital adequacy management connected with implementation of the new Basel 3 standards (Poposka, Trpkoski, 2013, May). The model in this paper identifies the key variables that are significant for the rate of share of personnel costs in total amount of non-interest expenses in Macedonian banking sector, as a segment which is not covered with our previous research papers.

On global level, developments in the banking sector in recent years, points to the need of increased cost effectiveness in all business processes, activities and decisions. Banks are at a crossroads. Cutting costs through tactical efficiencies may be a winning short-term strategy, but beating the competition long term requires structural change (Accenture 2008). As a segment of cost optimization solutions, some banks have traditionally viewed call centers as a means to cut costs or improve customer satisfaction but this channel has failed to deliver on both of these missions. Some of them are considering to reduce this channel cost by moving more transactions to self-service options; others are aiming to make it profit center that drives sales growth and a number of banks are doing both (Gupta, McMahon, Jain & Kanagasabai, 2008). Other banks as one of the possible cost effectiveness strategies, found outsourcing of their non-core processes to third party vendors. This could deliver the twin benefits of lower employee overheads and higher productivity among bank employees who could focus their energies on the core business (Jaymalya Palit, 2007).

Human resources are the major assets of all business entities. However, they represent one of the key cost categories of commercial banks. Compared to other types of non-interest expenses, the

shareholders views for this group of costs are often inconsistent. The shareholders aim to reduce the cost of human resources. Contrary, employees always have demands for higher wages and benefits. The management in order to establish a balance between the two groups must respond to a number of challenges from internal and external nature. The dynamics of the movement in the number of employees in the Macedonian banking sector is given by Graph 1.

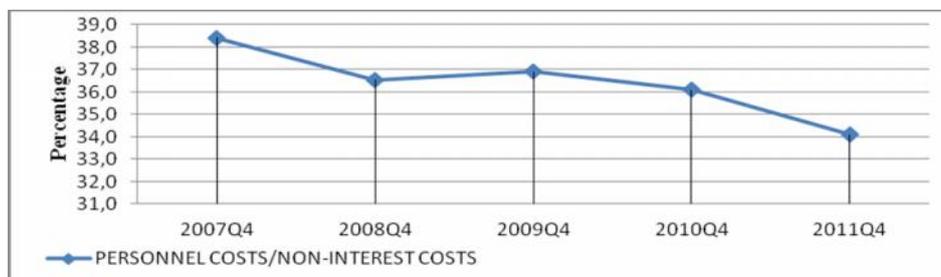
Graph1. Employment in the Macedonian banking sector



Source: NBRM (2012), Annual report for the banking sector in Republic of Macedonia for 2011, www.nbrm.mk.

Based on the data presented by Graph 1, it can be concluded that the number of employees in the banking sector in the country has seen significant growth in period 2007-2008, while in the period 2008-2011, a decreasing trend. Here arises the following dilemma – Is the change in the number of employees affects the rate of participation of personnel costs in the total amount of non-interest expenses of the banking sector? The answer may be partly found analyzing the Graph 2.

Graph2. Personnel costs in the Macedonian banking sector and their share in the total amount of non-interest expenses



Source: NBRM (2012), Own calculations based upon the data from the report " Indicators for financial stability of Macedonian banking system in Republic of Macedonia for the period 2001-2012", www.nbrm.mk.

Graph 1 and 2 presents only a general picture for the movement of the number of employee's and the share of this costs category in the total amount of non-interest expenses. However, many other questions arise, which initiate further analysis such as:

1. Whether the category of bank customers (retail or business subjects) affects the level of expenditures for human resources?
2. Determination of the relationship (if any) between the level of capitalization and rate of share of personnel costs in the total amount of non-interest costs in banking?
3. Whether the trends on key profitability indicators (ROA and ROE) lead to an increase or decrease in the costs of human resources and if so, in which direction?
4. Whether the processes of non-performing loans collection are realized through internal resources or external service providers e.g. outsourcing agencies?
5. Whether staff expenses adequately follow the business dynamics of the banks?

Some of these challenges will be a subject to a secondary model for personnel costs management, presented in the following parts of this paper. Finding appropriate responses to these questions, shall improve the management information systems with useful data that presents on step forward in making better and more rational business decisions in bank management.

1. Identification of variables and expected statistical effects

The human resources present a key component for development, competitiveness and success of all business entities. Personnel expenditures in general are connected to salaries for employees and other benefits as well as the costs associated with training and other types of investments in human resources.

For gaining sustainable competitive advantage e.g. Efficiency, Innovation and Responsiveness, it's highly recommended that organizations (especially those that activates in the financial services sector) should attend to the empowerment of employees in the appropriate form (Mohammad Safari Kahreh, Heidar Ahmadi and Asgar Hashemi, 2011).

The significance of the individual variables that affect the cost of staff of commercial banks primarily depends by the individual strategy of each bank. Certain banks are focused on market share increasing, others towards achieving a higher rate of on equity return (ROE) or increased rate of return on assets (ROA), focusing on stability goals through maintaining high level of capital adequacy, targeting different category of customers (retail or corporate clients) in order to reach lower risk profile etc.

Regarding the above mentioned information on the rate of share of personnel costs in the total amount of non-interest expenses, the following variables are expected to have statistical influence:

1. **Retail loans/gross loans to nonfinancial entities**– it's expected that through the tests of this variable an answer would be reached connected to the dilemma whether the focus on particular category of customers (in this case retail clients), increases or reduces the share of personnel costs in the total amount of non-interest expenses? An reasonable expectation is that if banking sector notes tendency of increase in the share of loans to individual clients in the total loans to N.F.E., the rate of participation of personnel costs in total amount of non-interest expenses would also increase as a result of the higher number of employees in the selling and products maintaining and managing activities;
2. **Business loans/gross loans to nonfinancial entities**–The expectations about the impact of this variable on the share of personnel costs in the total amount of non-interest expenses are

contrary to the expectations for the impact of variable **retail loans/gross loans to nonfinancial entities**;

3. **Capital adequacy ratio coefficient**– through the tests of this variable information about the impact of capital adequacy on the dependent variable would be obtained;
4. **Non-performing loans/gross loans to nonfinancial entities**–the increase of the share of non-performing loans could initiate hiring of additional personnel in delinquency portfolio management which leads to higher personnel costs. On the other hand, if banks decided to use services from external agencies, the rate of share of personnel costs could decline relative to the total amount of non-interest expenses;
5. **Capital and reserves/total assets**– the change in participation rate of equity in total assets could affect the perception of stakeholders and their directions to bank managing boards in the segment of human resource policy;
6. **Highly liquid assets/total assets** – it's expected that banks which have higher fast liquidity coefficient, didn't spend a significant portion of their human resources capacity for intensive daily asset management activities. As a result it's considered that this variable would be moving in the opposite direction from the movement of the rate of share of personnel costs in the total amount of non-interest expenses;
7. **ROAE** – the lower rate of return on average equity rate could stimulate firing of employees in order to reach improved costs efficiency. The secondary model should answer the question whether banks improve their cost effectiveness by reducing expenditures for human resources of through optimization of other types of non-interest expenses.
8. **ROAA**– we cannot predict how the movement of this variable would affect the share of personnel costs in the total amount of non-interest expenses of the banks in Macedonian economy.

The methods for analyses on the statistical data and model specification are given in the next section of this research paper.

2. Statistical data and model specification

The testing data for the model are taken from the report “Indicators of financial stability of the banking system of Republic of Macedonia in the period 2001-2012” published on the website of the National Bank of Republic of Macedonia. Some of the performed tests on the econometric relevance of the model are presented in the Annexure part of this paper.

The data processing activities will be performed by multiple regression analysis through application of the least squares method presented with the following mathematical equation:

$$y = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 + b_8x_8 + u$$

$b_0 - b_8$ -coefficients of the individual variables in the model

$x_1 = \text{RETAIL LOANS} / \text{GROSS LOANS TO NONFINANCIAL ENTITIES}$

$x_2 = \text{BUSINESS LOANS} / \text{GROSS LOANS TO NONFINANCIAL ENTITIES}$

$x_3 = \text{CAPITAL ADEQUACY RATIO}$

$x_4 = \text{NON - PERFORMING LOANS} / \text{GROSS LOANS TO NONFINANCIAL ENTITIES}$

$x_5 = \text{CAPITAL AND RESERVES} / \text{TOTAL ASSETS}$

$x_6 = \text{HIGHLY LIQUID ASSETS} / \text{TOTAL ASSETS}$

$x_7 = \text{ROAE}$

$x_8 = \text{ROAA}$

$u = \text{STOCHASTIC ERROR} - \text{random error.}$

The effects of the identified independent variables on the rate of share of human resource expenditures in the total amount of non-interest bank expenses are analyzed in the following part of this research study.

3. Analysis of the results

The regression analyze results are presented in Table 1, while the realized control tests of the model parameters from econometrical point of view in the Annexure section of this paper.

Table 1
Results of regression analysis of the independent variables impact on PERSONNEL COSTS/NON-INTEREST COSTS for the period Q42001 – Q32012

Dependent Variable: PERSONNEL COSTS/NON-INTEREST COSTS
 Method: Least Squares
 Date: 03/20/13 Time: 23:42
 Sample: 2001Q4 2012Q3
 Included observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RETAIL LOANS/GROSS LOANS TO N.F.E.	0.231981	0.219174	1.058433	0.3008
BUSINESS LOANS/GROSS LOANS TO N.F.E.	-0.007558	0.279309	-0.027059	0.9786
CAPITAL ADEQUACY RATIO	0.803438	0.335929	2.391693	0.0253
NON-PERFORMING LOANS/GROSS LOANS	0.614071	0.359376	1.708715	0.1010
CAPITAL AND RESERVES/TOTAL ASSETS	-2.013544	0.954925	-2.108589	0.0461
HIGHLY LIQUID ASSETS/TOTAL ASSETS	-0.501952	0.166853	-3.008343	0.0063
ROAE	-1.305465	0.318748	-4.095598	0.0004
ROAA	12.26165	2.392488	5.125064	0.0000
C	42.37749	26.66554	1.589223	0.1257
R-squared	0.893883	Mean dependent var		37.14085
Adjusted R-squared	0.856973	S.D. dependent var		2.817752
S.E. of regression	1.065643	Akaike info criterion		3.197291
Sum squared resid	26.11866	Schwarz criterion		3.609530
Log likelihood	-42.15666	Hannan-Quinn criter.		3.333937
F-statistic	24.21781	Durbin-Watson stat		1.888735
Prob(F-statistic)	0.000000			

Source: Individual calculations based on the time series data for the banking sector, published by National Bank of Macedonia.

If the values from Table 1 are integrated into previously presented formula, the equation would have the following design:

$$y = 42.37749x_0 + 0.231981x_1 - 0.007558x_2 + 0.803438x_3 + 0.614071x_4 - 2.013544x_5 - 0.501952x_6 - 1.305465x_7 + 12.26165x_8 + u$$

The coefficients b0, b1, b3, b4 and b8 have a positive impact on the variable PERSONNEL COSTS/NON-FINANCIAL COSTS, while the coefficients b2, b5, b6 and b7 negative impact on the dependent variable.

Through p values, could be concluded that the independent variables RETAIL LOANS/GROSS LOANS TO N.F.E. and BUSINESS LOANS/GROSS LOANS TO N.F.E. do not have statistical influence on the dependent variable PERSONNEL COSTS/NON-INTEREST COSTS.

The model presents that variable NON-PERFORMING LOANS/GROSS LOANS is statistically insignificant for the dependent variable, which to some extent is contrary to the previous expectations. Although these independent variables in the tests didn't have statistical significance, we consider that for complete confirmation of this conclusion more tests should be performed primarily on the level on different group of banks as well as on level on individual bank institutions, for statistically relevant period of observations.

The model presents that variable: CAPITAL ADEQUACY RATIO and ROAA have a positive statistical impact on the dependent variable, while independent variables CAPITAL AND RESERVES/TOTAL ASSETS, HIGHLY LIQUID ASSETS/TOTAL ASSETS and ROAE, a negative statistical influence on dependent variable.

The value of R-squared (0.893883), presents that independent variables with CCA 89% determine the dependent variable which is acceptable result from statistical point of view. In the same time autocorrelation parameter presented with the value of Durbin-Watson statistics (1.888735) is in the proper range which means that the model is satisfactory and relevant in this part of the tests.

Discussion and conclusion

Based on the results of the secondary model, it can be concluded that personnel costs do not depend from the rate of participation of loans to retail clients or legal entities in total loans to non-financial entities issued by the banks. This conclusion to some extent is contrary to initial expectations. However, these results are related to whole banking sector and they do not necessarily reflect the situation in all individual banks.

The model presents information that the movement in the CAPITAL ADEQUACY RATIO ((Tier 1 + Tier 2)/Risk Weighted Assets) on Macedonian banks, has proportional trend with the share of the personnel costs in total amount of non-interest costs, while that the variable CAPITAL AND RESERVES/TOTAL ASSETS a reverse movement from the direction of the dependent variable. The statistical impact of these two independent variables opens a new dilemma and suggests further analysis for more accurate identification of the main reasons for these results. As a part of the further challenges, could be identified:

1. Determination of the relationship between the capital adequacy ratio and the intensity and primarily objectives of the costs optimization activities;
2. The determination of the relationship between the share of TIER 2 and management freedom for business decisions connected to the number of employments and personnel costs could be identified as other challenge;
3. Some of the Macedonian banks could take higher risks if they managed with higher amount of capital from secondary sources (TIER 2). In the same time managing boards of these institutions could be empowered with higher freedom in asset and liabilities management. This capital could lead to market expansion activities and growing tendency of personnel costs (which would follow the business dynamics). The share of own capital and reserves in total assets in these circumstances are logically moving in the opposite direction from the dependent variable.

The model presented that the variable HIGH LIQUIDITY/TOTAL ASSETS has opposite direction from the dependent variable PERSONNEL COSTS/NON-INTEREST COSTS. Lower liquidity rate leads to more intensive activities by staff in the

segment of asset and liability management. Banks with lower high liquid assets are using more of their staff capacity in order to reach an adequately asset and liability management.

The rate on average capital returns (ROAE) has an opposite movement from the share of personnel costs in the total amount of non-interest costs, while the variable ROAA proportional trend to the same dependent variable.

Lower rate of ROAE could lead to growing in staff number arranged into activities connected to delinquency portfolio operations. According to the results of the secondary model, as a general conclusion could be mentioned that Macedonian banks are using more internal resources than external agencies for delinquency portfolio management services, because in the opposite case, other types of non-interest costs should be growing which would lead to lower rate of the share of the personnel costs in the total amount of non-interest expenditures.

The results obtained on the level of banking sector don't have to reflect the individual condition for all banks in the country. Namely, we suggest that for more accurate results, the model should be used in combination with other banking models on the level on each individual bank.

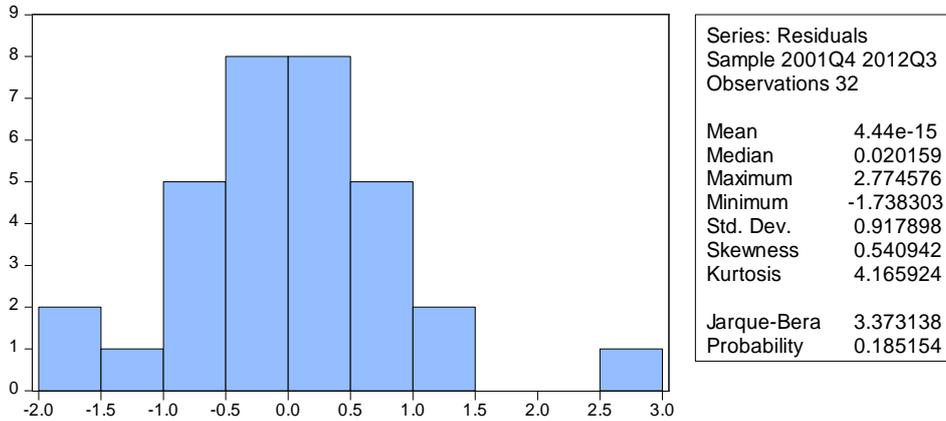
The tests of the model on the level on each individual bank could provide more adequately confirmation or rejection on the results from the tests. It's considered that the model could present interesting information for the bank management for the comparative analysis purposes. Due to the lack of relevant academic and practical literature linked with the topic of this research, for accurately confirmation of the results obtained through the secondary model, more empirical tests should be performed.

References

1. Accenture (2008), *A Strategic Approach to Cost Reduction in Banking*, Achieving High Performance in Uncertain Times.
2. Gupta A., McMahon S., Jain A. and Kanagasabai K.,(2008), *Redefining the Mission for Banks Call Centers Cut Costs, Grow Sales, or Both*, Booz and Company.
3. Mohammad Safari Kahreh, Heidar Ahmadi and Asgar Hashemi (2011), Achieving competitive advantage through empowering employees: An empirical study, *Far East Journal of Psychology and Business*, Vol.3, No 2, May 2011, Far East Research Centre, pp.26-37.
4. National Bank of Republic of Macedonia (2012), Annual report for the banking sector in Republic of Macedonia for 2011, www.nbrm.mk.
5. National Bank of Republic of Macedonia (2013), Indicators for financial stability of Macedonian banking system in the period 2001-2012, www.nbrm.mk.
6. Palit J., (2007), *Banking Efficiency Beyond Cost Cutting*, Finacle from Infosys, Infosys Technologies Limited, Plot No.44, Electronics City, Hosur Road, Bangalore-560100, India.
7. Poposka K., Trpkoski M., (2013, March), Alternative models for a retail banking products development, *Journal of Sustainable Development*, Volume 4, Issue 5, Integrated Business Faculty, Skopje, Republic of Macedonia, pp.39-57.
8. Poposka K., Trpkoski M., (2013, April), Alternative banking models for analysis of risks generated by construction companies in Republic of Macedonia, *Journal of Sustainable Development*, Volume 4, Issue 6, Integrated Business Faculty, Skopje, Republic of Macedonia, pp.5-25.
9. Poposka K., Trpkoski M., (2013, May), Secondary capital adequacy management model with overview of Basel III - Case on the banking sector in the Republic of Macedonia, *TIJ's Research Journal of Economics & Business Studies – RJEBS*, Volume 2, Number 07, pp.21-32.

**Annexure:
Appendix 1**

Results from Jarque - Bera test:



Appendix 2

Segment of the results from Breusch-Godfrey Serial Correlation
LM Test:

F-statistic	0.028050	Prob. F(2,21)	0.9724
Obs*R-squared	0.085259	Prob. Chi-Square(2)	0.9583

Appendix 3

Segment of the results from Heteroskedasticity Test: Breusch-Pagan-
Godfrey

F-statistic	0.471146	Prob. F(8,23)	0.8638
Obs*R-squared	4.505683	Prob. Chi-Square(8)	0.8089
Scaled explained SS	3.684571	Prob. Chi-Square(8)	0.8844