

ANALYSIS OF PROFITABILITY IN DEPOSIT MONEY BANKS: TURKEY EXAMPLE¹



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ABSTRACT In this study, it is aimed to analyze the effect on the profitability of deposit banks operating in the Turkish banking sector between 2002Q4-2015Q2 using dynamic panel data methods. In working, profitability as a variable; two ratios were used: asset profitability and profitability over equity. According to the results of the analysis, the net interest margin has a significant effect on the net profitability of public and private banks. Non-interest income is equally effective in the active profitability of public and private banks and foreign banks. On the contrary, non-interest income is more dominant in public and private banks than in affecting equity profitability.

Keywords: Deposit Banking, Profitability Indicators, Panel Data Analysis

Jel Codes: E00, E44, G21

Scope: Economics

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MEVDUAT BANKALARINDA KARLILIK ANALİZİ: TÜRKİYE ÖRNEĞİ



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ÖZ Bu çalışmada 2002Q4-2015Q2 döneminde Türk bankacılık sektöründe faaliyet gösteren mevduat bankalarının kârlılığı üzerindeki etkisinin dinamik panel veri yöntemleri kullanılarak incelenmesi amaçlanmıştır. Çalışmada, bir değişken olarak kârlılık; varlık kârlılığı ve özkaynak kârlılığı olmak üzere de iki oran kullanılmıştır: Analizlerde kamu ve özel sermayeli bankaların yanı sıra yabancı sermayeli bankalar dikkate alınmıştır. Analiz sonuçlarına göre net faiz marjı kamu ve özel sermayeli bankaların aktif kârlılığında önemli bir etkiye sahiptir. Faiz dışı gelir kamu ve özel sermayeli bankalar ve yabancı sermayeli bankaların aktif kârlılığında aynı oranda etkilidir. Bunun aksine faiz dışı gelir özsermaye kârlılığını etkilemede kamu ve özel sermayeli bankalarda daha ağır basmaktadır.

Anahtar Kelimeler: Mevduat Bankacılığı, Kârlılık İndikatörleri, Panel Veri Analizi

Jel Kodu: E00, E44, G21

Alanı: İktisat

Türü: Araştırma

1. INTRODUCTION

Banking sector is one of the most important actors in terms of economic development. Banks have an important role in economy in terms of capital accumulation, growth of firms, and providing economic wealth. The strong and profitable banking system takes the lead in providing stability and enables economy to be more durable against macroeconomic shocks. As in all over the world, also in our country, the most important component of financial sector is bank and banking. Banks can be basically divided into two groups as commercial banks and development and investment banks. Commercial banks collecting deposit and distributing these to those having need are in the position to be part of the most important of banking sector and whose relative share is the highest. The financial instrument, in which the accumulations of people, accepted as the main resources of savings, are valued the most intensively, is banking deposits. On the other hand, an important part of business world i.e. individual businesses and institutional companies, are met by bank credits. Therefore, commercial banks necessarily have reached the position to be the most important mediators of either banking sector or financial sector.

The most important aims of banks like the other companies is to be able to maximize their profits. Hence, the performances and success of banks are measured with their profitability. In this study, the profitability of banks is attempted to be analyzed through active profitability and equity capital profitability. Considering the financial tables of 11 private and public capital banks and 8 foreign capital banks being active in Turkey between the years of 2002Q4-2015Q2, it was aimed to analyze profitability indicators. In the scope of study, the effect of financial structures of deposit banks on profitability was analyzed by using dynamic panel data methods (Pooled Mean Group Estimator –PMGE and Mean Group Estimator -MGE).

2. LITERATURE REVIEW

In the literature, many studies were carried out toward measuring banking sector performance by analyzing bank profitability. In Table 1, some of empirical studies of interest are given as summary.

Table 1: Literature Summary

Authors	Year	Method	Dependent Variables	Independent Variables
Molyneux and Thornton	1992	Least Square Method	Active and equity profitability	Real Interest, Concentration, Public Property, Equity, Personnel Expenditure, Liquidity
Saunders and Schumacher	2000	Panel Data-Two-Stage Method	Net Interest Margin	Net Non –Interest Expenditure, Fixed Active, Equity, Interest Rate Volatility

Bashir	2001	Panel Data	Active and Equity Profitability	Equity, Credit, Fixed Active, Growth Rate, Bank Size
Abreu and Mendes	2001	Panel Data-Two-Stage Method	Net Interest Margin, Active and Equity Profitability	Equity, Unemployment Rate, Inflation, Personnel Expenditure, Credit Market Share
Atanasieff, Lhacer and Nakane	2002	Panel Data	Net Interest Margin	Macroeconomic Variables
Guru, Staunton and Balashanmugan	2000	Panel Data	Active Profitability	Liquidity Capita Sufficiency, Expenditure Method, Partnership Structure of Bank, Bank Size, External Economic Conditions
Barajas and Salazar	1999	Panel Data	Net Interest Margin	Credit Quality, Financial Liberalization
Jiang, Tang, Law and Size	2003	Panel Data	Active Profitability	Provision , Non-Interest Expense, Non-Interest Income, Tax Income, Inflation Rate, Growth Rate, Real Interest
Demirguc-Kunt and Huizinga	2000	Panel Data	Net Interest Margin and Active Profitability	Fixed Active, Credit, , Deposit, Non-Interest Expense, Foreigner Property, Real Interest , Inflation, Growth Rate, Required Reserve Ratio, Tax Rate, Existence of Deposit Insurance System, Concentration, Stock Market Capitalization
Naceur	2003	Panel Data	Net Interest Margin and Active Profitability	Equity, Non-Interest Expense, Credit, Inflation, Concentration, Stock Market Capitalization
Tunay and Silpar	2006	Panel Data	Net Interest Margin, Active and Equity Profitability	Non- Interest Expense, Equity, Credit, Non-Interest Income, Bank Size, Inflation, Growth Rate , Concentration, Banking Sector Size, Stock Market Capitalization
Çoban and Şahin	2011	Regression Analysis	Real Profit Rate	Rediscount Rate, Bank Deposit Interest Rate, Liquidity Ratio, Required Reserve Ratio
Çoban, Yorgancılar and Kabaklı	2015	The Malmquist Total Factor Productivity Index	Paid in Capital, Number of Staff, Total Deposit	Total Credits, Net Current, Profit/Loss

When the above table is considered, it is seen that the profitability of banking sector is analyzed by using the different variables. Molyneux and Thornton (1992) in respect of the period 1986-1989, for 18 European countries, examining private sector banks, cooperative, and public sector credit organizations, studied on the determinants of bank profitability and identified a positive relationship between the interest rate level of countries, bank concentration, and shareholder of government and stock return. Saunders and Schumacher (2000) studied the determinants of net interest margin of 614 banks in 6 European Union (EU) countries and USA between the years of 1988-1995. Authors utilized two stage method developed by Ho and Saunders (1981). Net interest margin was calculated as the rate of the difference of interest incomes

from interest expenses to the actives with average interest return. For each country, in respect of the years 1988-1995, a regression analysis was made, in which the rate of the difference of non-interest expenses from non-interest incomes to average actives and rate of actives not having interest return to average actives, and rate of equity to total passives are independent variables. In all countries, the effect of net non-interest incomes (non-interest incomes – non-interest expenses/average actives) on net interest margin was found statistically significant and positive. In another study, carried out by Abreu and Mendes (2001), during 10 years' period, interest margin and profitability components of the banks in European countries were analyzed. These researchers express that the expected bankrupt costs of the banks, whose capital bases are strong, are lower and that they can turn these advantages of them into profitability. Jiang, Tang, Law and Sze (2003), in their common studies, between the years 1992-2002, using the data of 14 banks in Hong Kong and macro variables, studied the determinants of the rate of pretax profit to actives. The rate of reserves to total credits, rate of non-interest incomes to total actives, share of non-interest incomes in total actives, and rate of tax expenses to pretax total incomes were found significant as micro determinants. Naceur (2003), using panel regression technique and the data of the years 1980-2000 studied, in Tunisia, studied the effects of bank-specific variables, financial structure and macroeconomic variables on net interest margin and active return. The results of the study revealed that as the rate of equities, general expenditure, and credits to total actives increases, bank profitability is positively affected. Demircuc-Kunt and Huizinga (2000), between the years 1988 -1995, using the data of 7900 banks from 80 countries, studied the determinants of net interest margin and pretax active return. Bank-specific characters, macro indicators, taxing, deposit insurance, financial structure, and legal indicators were used as explanatory variables. Among bank-specific characters, a significant and positive relationship was found between the rate of equities to actives and net interest margin and pretax active return. Also in our study, net interest margin, rate of interest incomes to actives, rate of equity capital to total liabilities, and bank size positively affect bank profitability (active and equity capital profitability) in such a way that it will overlap with economic expectations.

3. METHODOLOGY

In this study, with moving from quarterly financial tables, published by the Bank Associations of Turkey (TBB), the data belonging to the period of 2002Q4-2015Q2 were used. In the scope of the study, the effect of the financial structures of deposit banks being active in Turkish Banking Sector on the profitability was analyzed by using dynamic panel data methods (Pooled Mean Group Estimator- PMGE and Mean Group Estimator-MGE)

3.1. Definition of Data and Variables

The variables used in the analysis are like seen in Table 2.

Table 2: Variables and Their Definitions

Variables	Definition of Variables	Symbol of Variables
Active Profitability	Net Profit/Total Actives	ACP
Profitability of Equity	Net Profit/Equity Capital	EQP
Net Interest Margin	Net Interest Incomes/Total Actives	NIM
Non-Interest Income	Non Interest Incomes/Total Actives	NOIM
Bank Size	Total Actives of Bank/Total Actives of Banking Sector	BANSI
Equity	Equity Capital/Total Liabilities	EQ

Resource: TBB, 2015.

As profitability variable taking place in Table 2, two ratios are used as active profitability and profitability through equity capital. According to this, these profitability indicators are discussed in the study as dependent variable, while the variables of net interest margin, rate of non-interest incomes to actives, bank size, and rate of equity capital to liabilities are considered as explanatory variables.

In this study, the effect of financial structures of banks on profitability level was analyzed by making distinction between private and public capital banks and foreign capital bank. In this scope, 11 private and public capital banks and 8 foreign capital banks were taken into consideration. In the analyses, in which package program in version Stata 12 was used, the data belonging to the variables were compiled with moving from financial tables published by the Banks Association of Turkey.

3.2. Method

In the estimation of the effect of financial structures of deposit banks being active in Turkish Banking Sector on profitability, Pooled Mean Group Estimator -PMGE and Mean Group Estimator -MGE will be utilized. While presenting the relationship between variables, in order to identify which estimator produced accurate results, long term homogeneity will be tested by Hausman test (1978).

MGE does not put any constraint on Regressive Distributed Lag-ARDL and derives the long term parameters from the mean value of long term parameters obtained from individual ARDL estimations. The main feature of MGE is that it enables either long term or short term parameters to differentiate between individuals. In PMGE, parameters are the same between units in long term. In order to be able to make a preference between these estimators,

Hausman test is used. Panel vector error correction model used in the analysis of long and short term relationships is as follows (Hausman, 1978: 1269):

$$\Delta y = \phi_i \varepsilon_{it-1} + \beta'_{i1} x + \sum_{j=1}^{p-1} \lambda_{ij1} \Delta y_{it-1} + \sum_{j=0}^{q-1} \delta_{ij1} \Delta x_{it-j} + u_{it}$$

In the model, ϕ_i denotes error correction parameter; λ_{ij1} , coefficients of lagged dependent variable (scalars); $\delta_{ij2}(kx1)$, coefficient vectors; indices i , the number of country; t , time; q , optimal lagging length; and u_{it} error term. That error correction term is negative –valued and statistically significant reveals that short-term deviations between co-integrated series will disappear in long term and series will reach equilibrium in long term.

In the study, the models to be estimated in the scope of error correction model is shown below.

Model I:

$$\begin{aligned} \Delta ACP = & \phi_i \varepsilon_{it-1} + \beta'_{i1} NIM + \beta'_{i2} EQ + \beta'_{i3} + BANSI + \sum_{j=1}^{p-1} \lambda_{ij1} \Delta ACP_{it-1} \\ & + \sum_{j=0}^{q-1} \delta_{ij1} \Delta NIM_{it-j} + \delta_{ij2} \Delta EQ_{it-j} + \delta_{ij3} \Delta BANSI_{it-j} + u_{it} \end{aligned}$$

Model II:

$$\begin{aligned} \Delta ACP = & \phi_i \varepsilon_{it-1} + \beta'_{i1} NOIM + \beta'_{i2} EQ + \beta'_{i3} + BANSI + \sum_{j=1}^{p-1} \lambda_{ij1} \Delta ACP_{it-1} \\ & + \sum_{j=0}^{q-1} \delta_{ij1} \Delta NOIM_{it-j} + \delta_{ij2} \Delta EQ_{it-j} + \delta_{ij3} \Delta BANSI_{it-j} + u_{it} \end{aligned}$$

Model III:

$$\begin{aligned} \Delta EQP = & \phi_i \varepsilon_{it-1} + \beta'_{i1} NIM + \beta'_{i2} EQ + \sum_{j=1}^{p-1} \lambda_{ij1} \Delta EQP_{it-1} + \sum_{j=0}^{q-1} \delta_{ij1} \Delta NIM_{it-j} \\ & + \delta_{ij2} \Delta EQ_{it-j} + u_{it} \end{aligned}$$

Model IV:

$$\Delta EQP = \phi_i \varepsilon_{it-1} + \beta'_{i1} NIM + \beta'_{i2} NOIM + \beta'_{i3} + BANSI + \sum_{j=1}^{p-1} \lambda_{ij1} \Delta EQP_{it-1} + \sum_{j=0}^{q-1} \delta_{ij1} \Delta NIM_{it-j} + \delta_{ij2} \Delta NOIM_{it-j} + \delta_{ij3} \Delta B_{it-j} + u_{it}$$

In Model I and II, while as independent variable, active profitability is analyzed, in Model III and IV, equity capital profitability was analyzed as independent variable.

4. EMPIRICAL RESULTS

In this study, in which the effect of financial indicators in Turkish banking sector on profitability is mentioned, with moving from the data belonging to the period of 2002Q4-2015Q2, analyses were made by using panel data method:

4.1. Estimation Results for Public and Private Capital Banks

In the study, in testing stationarity of the data, Augmented Dickey Fuller (ADF) tests in the types of Im, Pesaran and Shin, and Fisher were used. The results of unit root tests made for public and private banks take place in Table 3. According to these results, it was accepted that series is stationary at their original levels.

Table 3: Panel Unit Root Tests (Public and Private Equity Banks)*

Variables	Levin, Lin &Chu				Im, Pesaran and Shin W-stat				ADF			
	Constant		Constant&Trend		Constant		Constant&Trend		Constant		Constant&Trend	
	Stat.	Prob.	Stat.	Prob.	Stat.	Prob.	Stat.	Prob.	Stat.	Prob.	Stat.	Prob.
ACP	3.71	0.99	2.74	0.99	0.32	0.626	-3.13	0.000	33.7	0.052	52.01	0.000
EQP	-3.43	0.000	-2.60	0.004	-3.46	0.000	-1.12	0.130	46.3	0.001	26.5	0.230
NIM	-1.66	0.047	-1.32	0.092	-7.62	0.000	-9.59	0.000	111.7	0.000	141.02	0.000
NOIM	-3.66	0.000	-5.26	0.000	-4.86	0.000	-8.94	0.000	82.86	0.000	193.4	0.000
BANSI	-3.59	0.000	-4.35	0.000	-4.36	0.000	-4.49	0.000	61.7	0.000	67.3	0.000
EQ	-3.24	0.000	-2.03	0.02	-3.35	0.000	-0.59	0.275	44.8	0.000	22.3	0.441

* The values of LLC and Breitung are t statistics values, while the values of other tests are chi-square values.

Schwarz Information Criteria (SIC) was used to choose the gap lengths.

Between the series that is stationary from the same degree, in order to measure whether or not there is a long term relationship, in other words, specific to public and private capital banks, and the effect of financial structure on profitability, co-integration relationship between the variables included in the study were analyzed by using Pedroni and Kao co-integration tests. As the findings seen in Table 4 indicate, in all of models, there is a long term relationship between the variables.

Table 4: Cointegration Test Results (Public and Private Equity Banks)*

Depended Variable	ACP				EQP			
	Model I		Model II		Model III		Model IV	
Statistics	Stat.	Prob.	Stat.	Prob.	Stat.	Prob.	Stat.	Prob.
Panel v-Statistic	3.641	0.0001	3.033	0.0012	4.993	0.0000	0.498	0.3092
Panel rho-Statistic	-1.177	0.1195	-6.479	0.0000	-2.918	0.0018	-2.979	0.0014
Panel PP-Statistic	1.265	0.8971	-5.888	0.0000	-3.391	0.0003	-4.076	0.0000
Panel ADF-Statistic	2.539	0.9945	-5.029	0.0000	2.843	0.9978	-4.243	0.0000
Group rho-Statistic	-2.714	0.0033	-4.766	0.0000	1.233	0.8913	-1.714	0.0432
Group PP-Statistic	-6.481	0.0000	-8.271	0.0000	0.670	0.7486	-3.769	0.0001
Group ADF-Statistic	-6.835	0.0000	-4.626	0.0000	1.065	0.8566	-4.217	0.0000
Kao Test	2.673	0.004	5.677	0.000	-4.165	0.000	-1.394	0.0817

* Schwarz Information Criteria (SIC) was used to choose the gap lengths.

After identifying long term relationship between the variables, the direction and degree of this relationship can be estimated by using error correction models. In Turkish banking sector, the effect of financial indicators on profitability was tested by both PMGE and MGE estimators, based on 4 different models. In Model I and II, while active profitability is dependent variable, in Model III and IV, profitability through equity capital is dependent variable.

In Model I, estimated for public and private capital banks, the variables of net interest margin, rate of equity capital to total liabilities, and bank size were used. According to Hausman test statistics (2.54), PMGE estimator gives accurate results for this equation. According to PMGE results, net interest margin positively affects active profitability in both long and short term; bank size, in long term; and the rate of equity capital to liabilities, in short term (Table 5). For this equation, error correction parameter was found negative and

significant. According to this, about 41% of unbalances emerging in the short term will improve in the long term, and approaching long term balance will be provided. In Model II, instead of net interest margin, the rates of non-interest incomes to actives were used as explanatory variable. Hausman test statistics estimated for this equation (38.5) indicates MGE is valid. The main findings of MGE reveal that the rate of non-interest incomes to actives is significant for both short and long term. In addition, error correction parameter (0.56) is statistically significant. Hence, about 56% of imbalances emerging in the short term will improve in the long term.

Table 5: PMGE, MGE and Hausman Test Results (Public and Private Equity Banks)*

Variables	Dependent Variable: ACP		Dependent Variable: EQP	
	Model I	Model II	Model III	Model IV
ec NIM	0.32*** (0.029)		0.08 (0.033)**	0.65 (0.211)**
ec NOIM		0.34 (0.110)**		0.73 (0.120)***
ec EQ	-.008 (0.011)	0.055 (0.043)	0.97 (0.015)***	
ec BANS	0.057 (0.019)**	1.40 (0.878)		-0.136 (0.108)
SR Ec	-0.41 (0.032)***	-0.56 (0.039)***	-0.104 (0.021)***	-0.171 (0.034)***
D1. NIM	0.24 (0.025)***		0.015 (0.016)	-0.096 (0.166)
D1. NOIM		0.32 (0.074)***		-0.032 (0.075)
D1. EQ	0.132 (0.07)*	0.100 (0.072)	0.834 (0.029)***	
D1. BANS	0.585 (0.452)	0.004 (0.425)		-11.6 (10.46)
Constant	-0.058 (0.041)	-0.711 (0.438)*	-0.086 (0.038)**	1.61 (0.385)***
Hausman Test	2.54	39.56	4.77	4.76

* The coefficients in parentheses indicate standard errors.

In Model III, in which the profits through equity capital were used as dependent variable, net interest margin and the rate of equity capital to total liabilities were used as explanatory variable. Hausman test, made for this equation, shows that PMGE produces more consistent results. The findings show parallelism with the findings obtained in active profit model. In this meaning, net interest margin and equity capital positively affect the profitability in both the long and short period: Error correction coefficient obtained for this equation is also negative (- 0.10) and significant. In Model IV, the variables of

the rate of non-interest incomes to total actives and bank size were used. PMGE results are valid for this equation. According to PMGE results, the rates of non-interest incomes to actives affect profitability in long term. This effect is positive and consistent with the theoretical expectations.

4.2. Estimation Results of Foreign Capital Banks

In foreign capital banks, the results of unit root test carried out toward whether or not the variables used for testing the effect of financial structure on profitability levels are stationary are presented in Table 6.

Table 6: Panel Unit Root Tests (Foreign Banks)*

Variables	Levin, Lin &Chu				Im, Pesaran and Shin W-stat				ADF			
	Constant		Constant&Trend		Constant		Constant&Trend		Constant		Constant&Trend	
	Stat.	Prob.	Stat.	Prob.	Stat.	Prob.	Stat.	Prob.	Stat.	Prob.	Stat.	Prob.
AP	-1.44	0.07	-2.29	0.011	-5.70	0.000	-7.74	0.000	86.6	0.000	96.2	0.000
EQP	0.69	0.75	2.46	0.99	-5.81	0.000	-6.73	0.000	85.39	0.000	78.4	0.000
NIM	0.63	0.73	3.62	0.99	-5.26	0.000	-4.38	0.000	65.8	0.000	50.27	0.000
NOIM	-6.35	0.000	-0.19	0.42	-5.95	0.000	-4.90	0.000	69.73	0.000	55.14	0.000
BANS	-1.21	0.111	-1.68	0.04	-1.42	0.077	-1.82	0.034	26.46	0.047	31.3	0.012
EQ	-1.34	0.089	-1.81	0.035	-2.24	0.012	-1.81	0.034	28.44	0.028	27.8	0.033

* The values of LLC and Breitung are t statistics values, while the values of other tests are chi-square values.

Schwarz Information Criteria (SIC) was used to choose the gap lengths.

When Table 6 is examined, it was reached the conclusion that the variables are stationary at their levels.

The presence (absence) of co-integration relationship between stationary series from the same degree was tested by means of Pedroni and Kao co-integration tests (Table 7).

Table 7: Cointegration Test Results (Foreign Banks)*

Dependent Variable	ACP				EQP			
	Model I		Model II		Model III		Model IV	
Statistics	Stat.	Prob.	Stat.	Prob.	Stat.	Prob.	Stat.	Prob.
Panel v-Statistic	1.381	0.0836	2.431	0.0075	4.736	0.0000	4.934	0.0000
Panel rho-Statistic	-6.756	0.0000	-8.867	0.0000	-11.20	0.0000	-9.561	0.0000
Panel PP-Statistic	-10.120	0.0000	-11.386	0.0000	-12.50	0.0000	-16.910	0.0000
Panel ADF-Statistic	-9.265	0.0000	-10.444	0.0000	-11.24	0.0000	-10.790	0.0000

Group rho-Statistic	-6.253	0.0000	-7.707	0.0000	-8.941	0.0000	-7.123	0.0000
Group PP-Statistic	-11.194	0.0000	-12.687	0.0000	-12.382	0.0000	-16.315	0.0000
Group ADF-Statistic	-10.150	0.0000	-10.000	0.0000	-10.413	0.0000	-9.702	0.0000
Kao Test	-9.151	0.0000	-0.419	0.3374	-1.866	0.031	-2.458	0.0000

* Schwarz Information Criteria (SIC) was used to choose the gap lengths.

As will be understood the results taking place in Table 7, it was seen that there was a long term relationship between the variables in all models.

In foreign capital banks, the analysis results of the effect of financial structure on profitability were presented in Table 8.

Table 8: PMGE, MGE and Hausman Test Results (Foreign Banks)*

Variables	Dependent Variable: ACP		Dependent Variable: EQP	
	Model I	Model II	Model III	Model IV
Ec NIM	0.169 (0.030)***		0.013 (0.002)***	0.016 (0.02)***
Ec NOIM		0.34 (0.078)***		0.011 (0.002)***
Ec EQ	0.035 (0.012)**	0.148 (0.053)**	-0.001 (0.0008)	
Ec BANS	0.385 (0.110)**	2.78 (2.524)		0.056 (0.008)***
SR Ec	-0.52 (0.088)***	-0.62 (0.091)***	-0.58 (0.094)***	-0.55 (0.127)***
D1. NIM	0.169 (0.028)***		0.0132 (0.002)***	0.007 (0.025)**
D1. NOIM		0.282 (0.090)**		0.012 (0.005)**
D1. EQ	0.056 (0.0168)**	-0.02 (0.031)	.001 (0.002)	
D1. BANS	0.82 (0.643)	-0.38 (0.65)		0.043 (0.024)***
constant	-0.387 (0.108)***	-1.54 (0.514)**	0.024 (0.006)***	-0.049 (0.0216)**
Hausman Test	5.95	9.14	1.02	4.56

* The coefficients in parentheses indicate standard errors.

In Table 8, according to Hausman test statistics (5.95), carried out on Model 1, in which dependent variable is active profitability; PMGE findings produce more consistent results. In parallel with the results obtained in public and private capital banks, the results obtained here also reveal that net interest margin positively affect profitability in both short and long term. For this equation, it is seen that the rate of equity capital to liabilities produces significant results for both terms and bank size for long term. Error correction parameter of equation is negative and significant. The main findings of Model

II, in which MGE is valid, show that the rate of non-interest incomes to actives positively affect profitability in both long and short term. The rate of equity capital to liabilities was also accepted significant in long term. For Model III, in which profitability through equity capital, PMGE estimator is valid. According to this, it positively affects profitability in the short and long term. According to Model IV, net interest margin, rate of non-interest incomes to actives, and bank size statistically significant and positively affect profitability rate in long term in compliance with expectation.

When analysis results are assessed together, net interest margin, rate of interest incomes to actives, rate of equity capital to total liabilities and bank size positively affect profitability rates (active and equity capital profitability) in such a way that it will overlap with economic expectations. In the model, in which active profitability is used as dependent variable, in public and private capital banks, it is seen that the coefficient of net interest margin is higher compared to foreign capital banks. This case reveals that the effect of public and private sector interest incomes on profitability is higher compared to those of foreign capital banks. On the other hand, in foreign capital banks, the effect of non-interest incomes on profitability is quite close to the coefficients in public and private capital banks: For example, in the model of active profit, while the effect of non-interest incomes on profitability is 0.34 in the area of both banking in the long term, in short period, this value actualized as 0.32 for public and private capital banks and 0.28 for foreign capital banks. In foreign capital banks, for commission and dividend incomes, known as non-interest incomes, the effect of capital market transaction incomes on profitability turned out higher than the effect of interest incomes. When an evaluation is made in terms of the model, it can be said that in the group of public and private capital, Model III works well and in foreign capital banks, Model I, II, and IV.

5. CONCLUSION

At the present days, in the development of economy sectors, banking sectors has a leading role. Therefore, performance and financial stability of banking system is important for each production unit in economy. In this context, performance of banking sector is affected from both idiosyncratic elements and the variables of economy, in which it is.

In this study, it was aimed to analyze the effect of financial structures of deposit banks being active in Turkish banking sector on their profitability between the periods of 2002Q4-2015Q2 by using dynamic panel data methods. In the study, as profitability variable, two ratios were used as active profitability and equity capital profitability

According to the analysis results, in either public or private capital or

foreign capital banks, net interest margin, rate of interest incomes to actives, rate of equity capital to total liabilities, and bank size positively affect profitability rates (active and equity capital profitability) in such a way that it will overlap with economic expectations. In the models, in which active profitability is used as dependent variable, in public and private capital banks, it is seen that coefficient of net interest margin is higher compared to foreign capital banks. While the rate of net interest incomes to total actives positively affects active profitability in the rate of 32% in private capital banks, it positively affects in the rate of 17% in foreign capital banks. The rate of non-interest incomes to total actives positively affects active profitability both in private capital and public capital and foreign capital banks in the rate of 34%. When total actives of banking sectors are not valued, while the rate of net interest incomes to total actives positively affects equity capital profitability in the rate of 8% in public and private capital banks, when total actives of banking sector are valued, it positively affects in the rate of 65%. This rate attracts attention as 13% and 16% in foreign capital banks. While the rate of non-interest incomes to total actives is effective in the rate of 73% on equity capital profitability, this rate is 0.11% in foreign capital banks.

As a conclusion, net interest margin has an important effect on active profitability of public and private capital banks. Non-interest income is effective in the same rate on active profitability of public and private capital banks and foreign capital banks. In contrast to this, non-interest incomes more predominate in public and private capital banks in terms of affecting equity capital profitability.

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